GREAT BASIN NATURALIST MEMOIRS
Number 13 Brigham Young University 1992

A Catalog of Scolytidae and Platypodidae (Coleoptera), Part 2: Taxonomic Index Volume A



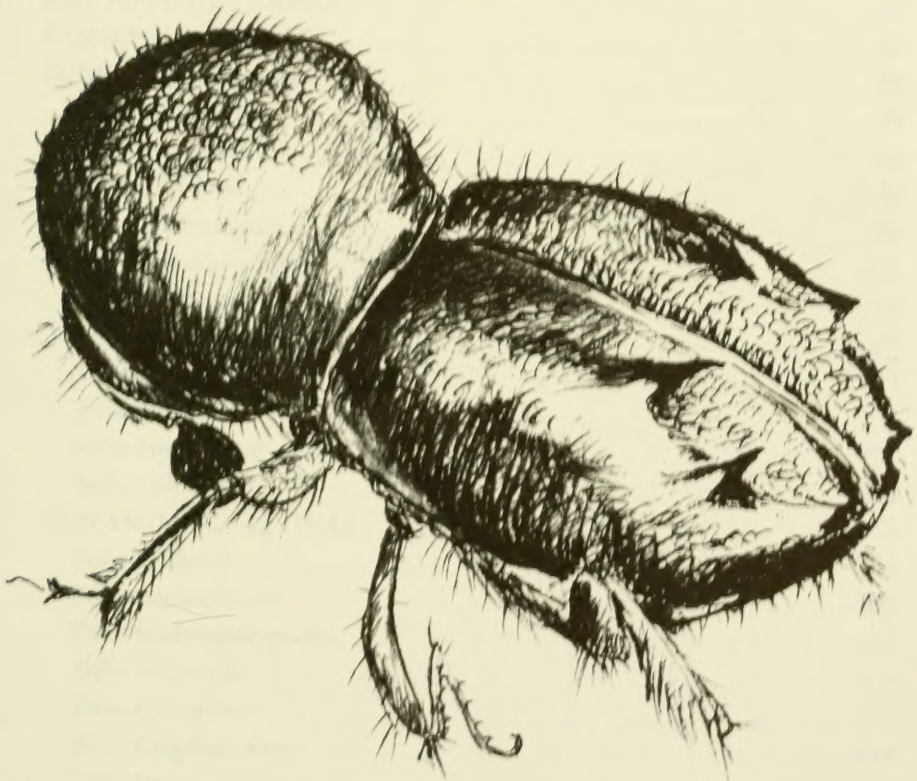
112

HARVARD UNIVERSITY

Library of the
Museum of
Comparative Zoology

GREAT BASIN NATURALIST MEMOIRS
Number 13 Brigham Young University 1992

A Catalog of Scolytidae and Platypodidae (Coleoptera), Part 2: Taxonomic Index Volume A



LIBRARY
MUS. COMP. ZOOLOGY,
CAMBRIDGE, MASS.

MCZ
LIBRARY

NOV 1 5 1993

HARVARD
UNIVERSITY

Copyright © 1992 by Brigham Young University. All rights reserved.
Printed in the United States of America.

ISBN 0-8425-2310-3

CONTENTS

Part 2, Volume A

ABSTRACT 1
INTRODUCTION (English) 1
INTRODUCTION (French) 7
EINLEITUNG (German) 13
INTRODUCCION (Spanish) 19
LIST OF MUSEUM TYPE REPOSITORIES 25
KEY TO SUBJECT AREAS 27
FAMILY SCOLYTIDAE 28
SUBFAMILY HYLESININAE 28
Tribe Hylastini 29
Tribe Hylesinini 64
Tribe Tomicini 103
Tribe Phrixosomini 189
Tribe Hyorrhynchini 191
Tribe Diamerini 193
Tribe Bothrosternini 205
Tribe Phloeotribini 217
Tribe Phloeosinini 236
Tribe Hypoborini 271
Tribe Polygraphini 283
SUBFAMILY SCOLYTINAE 313
Tribe Scolytini 313
Tribe Ctenophorini 383
Tribe Scolytoplatypodini 401
Tribe Micracini 408
Tribe Cactopinini 435
Tribe Carphodicticini 437
Tribe Ipini 438
Tribe Dryocoetini 539
Tribe Crypturgini 615
Tribe Xyloterini 632
Tribe Xyleborini 651

Part 2, Volume B

Tribe Xyloctonini 835
Tribe Cryphalini 842
Tribe Corthylini 949
Subtribe Pityophthorina 949
Subtribe Corthylina 1034
GENERA INCERTAE SEDIS 1082
FAMILY PLATYPODIDAE 1084
SUBFAMILY COPTONOTINAE 1084
Tribe Coptonotinae 1084
Tribe Mecopelmini 1086
Tribe Schedlarini 1087
SUBFAMILY TESSEROCERINI 1088
Tribe Diapodini 1088
Tribe Tesserocerini 1097
SUBFAMILY PLATYPODINAE 1113
Tribe Platypodini 1113
HOST LIST AND SPECIES REPORTED TO ATTACK THEM 1241
SUPPLEMENT TO THE 1987 BIBLIOGRAPHY 1349
ADDENDUM 1440
INDEX FOR PLATYPODIDAE 1441
INDEX FOR SCOLYTIDAE 1460

GREAT BASIN NATURALIST MEMOIRS

A Catalog of Scolytidae and Platypodidae (Coleoptera), Part 2: Taxonomic Index

No. 13 Brigham Young University, Provo, Utah 1992

Stephen L. Wood[1] and Donald E. Bright, Jr.[2]

ABSTRACT.—Cataloged in two volumes is the world fauna of Scolytidae (including two subfamilies, 25 tribes, 225 genera, and about 5,812 species) and of Platypodidae (including three subfamilies, seven tribes, 32 genera, and 1,463 species). The higher categories are listed phylogenetically, together with pertinent bibliographic citations of literature listed in a previously published bibliography. Within each genus the species are listed alphabetically together with: (1) a citation of the original description (and original genus, if different from the present genus), (2) the kind of type and its sex, if known, (3) type locality (with lectotype designation, if applicable), (4) type repository, (5) a representation of published figures, (6) geographical distribution, (7) host distribution, (8) three categories of notes, and (9) citations of references to all published literature from 1758 to 1991. Reference citations for each species are divided into eight subject areas, with authors listed alphabetically (including year and page citations) within each of the subject areas. Synonyms for genera and for species-group names are listed by chronological priority below the valid name for the taxon together with type validation data, notes, and references. Infrasubspecific names are cited under notes of the valid taxon. An appendix to the catalog includes: (a) a world host-list, with the beetle species reported to attack each plant species listed, and (b) a supplement to the previously published bibliography (Wood & Bright 1987) that updates the original to the end of 1989. An index lists all nominate taxa and their associated nomen nudums. This is the first serious attempt to catalog the world fauna of Scolytidae since 1910 and Platypodidae since 1914.

The following pages contain the first serious attempt to list and catalog the world fauna of Scolytidae since Hagedorn (1910d) and of Platypodidae since Strohmeyer (1914b, 1914c). Also included is a supplement to the bibliography that was Part 1 of this catalog, that updates the literature citations to the end of 1989. Citations of taxonomic and biogeographic articles are included to 1991.

Items of special interest and concern to us that have arisen during preparation of this volume include the following: (a) The quantity of known biological information was a surprise. It was expected that at least 20 percent of all nominate species would be cited only once by the original description and that an additional 20 percent would be cited fewer than five times. A superficial review suggests that species cited only once constitute less than 5 percent of the total, and those cited fewer than five times only slightly more than an additional 5 percent. (b) The rate at which species are being transported through commerce to establish breeding populations in extra-territorial areas of the earth should be a matter for worldwide alarm. Following a century when scarcely one species per decade reached the USA, at least six species were established there between 1985 and 1989; four additional species were reported in 1990 and three more in 1991. The economic impact of these introduced species is already being felt and will increase. The fact that three of these 13 reproduce by the normal bisexual method suggests that a significant gap in plant inspection procedures at

[1] Life Science Museum and Department of Zoology, Brigham Young University, Provo, Utah 84602.
[2] Biosystematics Research Centre, Canada Department of Agriculture, Ottawa, Ontario, Canada K1A 0C6.

ports of entry exists and should be a matter for great concern to agriculture and forestry. More extensive and more thorough surveys designed to detect introduced species, especially in the vicinity of major ports of entry, are urgently needed. Similar patterns of spread through commerce are a worldwide concern for all nations; none are exempt. (c) Closely related to the preceding factor is the need for more thorough training and additional research opportunities for developing insect taxonomists. We are not aware of any serious young taxonomic specialists in Scolytidae or Platypodidae either in graduate school or in professional service anywhere in the world. The identification of these insects is often unusually difficult and professional competence requires 10 to 20 years of experience in this field. Amateur and half-trained specialists frequently make gross errors in judgment, as attested by the number and distribution of synonyms listed in this volume. These errors are frequently costly at a level that is frightening to anyone who studies the consequences of them. Immediate attention to this problem is needed for all insect groups having enormous economic concern, such as the Scolytidae. All species of Scolytidae are internal plant parasites and, consequently, are potential vectors of plant disease or are of concern due to direct attack on plant hosts.

Schedl Factor in Scolytidae Research

This catalog would not be complete, or even understandable, without at least a brief comment on the procedures and activities of Karl Eduard Schedl (1898-1979). Schedl was a major factor in the study of Scolytidae and Platypodidae for more than 50 years. He became interested in Scolytidae at the age of 17 when he observed the frass produced by an *Ips* species that was attacking a broken pine that fell across the World War I military trench in which he was concealed. Following the war, he received training in forest ecology and soon thereafter became interested in systematics. He published 342 articles on bark beetle taxonomy and is the author of more than 2,000 nominate species. Although he occasionally used the word "evolution," or other terms adopted from the New Systematics, his concept of the species was entirely morphological in the pre-1940 sense. His use of the subspecies designation was not that of a geographical race, but of any minute morphological deviation from his "type" (usually they were no more than aberrations). He told SLW that he did not accept the International Code on Zoological Nomenclature as binding for him; for this reason, he formulated his own code of nomenclature which was not written or discussed with colleagues.

Schedl had the habit of placing a manuscript name on a specimen he could not identify. These names often then remained in his collection for decades and were cited repeatedly in the literature by himself or others before they were formally described or associated with a previously named species. Another confusing habit, both to himself and to colleagues, was his recognition of a "male holotype" and a "female holotype" for each species. This habit led, on numerous occasions, to the double description of species (and creation of homonymous synonyms). Fortunately, he published a list of the Platypodidae type material in his collection (Schedl 1978a) and, later, a similar volume for Scolytidae (Schedl 1979c). These catalogs are only partly complete, but list the "holotypes," lectotypes, and neotypes in his collection. Many of these designations are invalid and, consequently, should be used with caution. Many of the species he had previously named from syntypic series were incorrectly given a "holotype," most of the lectotypes are listed with no indication of their geographical origin or of other data associated with the selection, and, in our opinion, none of the neotypes meet the requirements of the Code.

Another item requiring an explanation, in order for the reader to understand this catalog, is how a significant portion of the Eggers Collection came into the possession of Schedl. Near the end of World War II, Hans Eggers, the acknowledged world authority on Scolytidae at that time, contacted W. H. Anderson, curator of Scolytidae and Platypodidae at the Smithsonian Institution, and offered to sell his collection to them for $4,000. The Smithsonian accepted the offer and paid the full amount to Eggers in advance. Eggers began to pack and ship the collection to Washington, but he died when less than one-third of it had been sent. Because of the military occupation of Germany and travel difficulties in Europe at the close of the war, a European entomologist was engaged to complete the packing and shipping of the collection. That entomologist was Karl E. Schedl (Anderson,

W. H. & Anderson 1971:1-2). Only a fragment of that portion of the Eggers Collection placed in the care of Schedl arrived in Washington, while a substantial portion of both type and non-type material appeared in the collection of Schedl.

Schedl (1979c:2) published an account of how this significant portion of the Eggers Collection came into his hands. He told this same, but much more detailed, account to SLW in September 1965 at Lienz. However sincere this Schedl account might have been, it is contradicted by an account given by Mrs. Viktor Butovitsch (daughter of Hans and Elsa Eggers) on separate occasions to L. G. E. Kalshoven and F. G. Browne and reported to SLW. In her account, Schedl simply took what he wanted for his own use. The documentable facts bearing on this transaction are: (1) At the time of her husband's death, Elsa Eggers was senile to the point that "she did not even know her own name." After Hans died, their daughter was her legal guardian and conducted all of her personal business, none of which involved the collection or Schedl. (2) In 1952 and again in 1961, W. H. Anderson and S. L. Wood together examined and reviewed a large number (more than 20) of Smithsonian Institution (USNM) loan forms that were typewritten, single-spaced, and signed by Karl E. Schedl acknowledging receipt of several hundred primary and secondary types taken on loan from the Eggers Collection while Schedl prepared it for shipment. These loan forms had been imposed upon Schedl by the U.S. military attache who supervised Schedl's packing and sorting of the collection. Schedl apparently did not know those forms were sent directly to the Smithsonian Institution. According to W. H. Anderson, and D. M. Anderson (his successor), and confirmed by our own independent observations, none of that material was ever returned to Washington. In our catalog, problems related to conflicting statements on repositories are cited repeatedly. Similar problems with unreturned loans from the Forest Research Institute, Dehra Dun, from CSIRO, Canberra, and from other institutions are cited throughout the catalog.

In order for the user of this catalog to understand how a dozen Eichhoff types came into the possession of Schedl, the following is given. As told by Schedl to SLW in September 1965, near the close of World War II, Schedl was a major in the German army and had some responsibility for the management of forested areas in the Nazi (German) occupied countries of Europe. Schedl was in Poland when the eastern front collapsed, and before he fled he stopped at the Stettin Museum where the Dohrn Collection was housed (that collection included a dozen or more of Eichhoff types). When Schedl reached the museum, it had been abandoned except for the curator of Coleoptera who was just leaving. According to Schedl, when he asked the curator about the Eichhoff types, the curator told him to take them and flee for his life. Except for these specimens, the material in the Stettin Museum was destroyed by the war.

Materials and Methods

As mentioned in the Introduction to Part 1 of this catalog (Wood & Bright 1987), the catalog had its beginnings in 1946 when SLW began taxonomic and author card files in conjunction with a systematic search of literature treating Scolytidae and Platypodidae worldwide. These card files were continued until about 1980, but are reasonably complete only to 1970. These files are supplemented by a pinned collection of more than 100,000 specimens of Scolytidae and 3,000 of Platypodidae and a large collection of duplicate material preserved in ethanol. Of this material, most, including more than 2,000 biological species, were collected by himself from North and South America, Asia, Australia, Europe, Japan, New Guinea, and Sri Lanka. In addition, from 1960 to 1990, SLW exchanged identified specimens with several major museums and with Browne, Krivolutskaya, Kurenzov, Murayama, Schedl, etc. He has provided an identification service to professional colleagues in exchange for a portion of the specimens submitted by them for identification from 1945 until the present time. In order to authenticate the identification of species, he has taken examples for direct comparison to primary types to: AMNH (New York), CAS (San Francisco), MCZ (Cambridge), USNM (Washington), CNCI (Ottawa) in North America; BMNH (London), IZL (Leningrad), IZM (Moscow), MZU (Helsinki), MNHN (Paris), NHMW (Wien), Schedl Collection (Lienz) in Europe; FRI (Dehra Dun), Nobuchi Collection (Ibaraki) in Asia. Numerous primary and secondary types have been examined through brief loans from numerous other museums and private sources. He has examined authentic specimens

of about two-thirds of the nominate species listed below.

DEB became acquainted with cataloging procedures during 1961-1963 while he was a graduate student working with SLW. This interest intensified during the 1970s, and in 1981, the authors united their efforts to compile this catalog. DEB has collected extensively in Canada, USA, and Mexico in North America and in Borneo. He has been a research scientist at the Canadian National Collection of Insects, Arachnids, and Nematodes (CNCI, Ottawa) since 1966. He has visited the following museums for the purpose of studying type material for this project and related research: CAS (San Francisco), FMNH (Chicago), MCZ (Cambridge), USNM (Washington), Wood Collection in North America; BMNH (London), MNHN (Paris), NHMW (Wien) in Europe. Numerous additional primary types have been examined through brief loans from other museums and private sources. An identification service, similar to that outlined above, has been provided since 1966.

In order for the user to understand and deal effectively with errors that may be found in the catalog, an understanding of the procedures followed in compiling it is essential. Basic information on each taxon included in the catalog was organized on data sheets of two kinds: (1) genus-group category sheets, and (2) species-group category sheets. On these sheets, the name, author(s), type data, type repository data, original genus, subsequent genus, source of original description, valid name of taxon, notes, geographical distribution, and hosts were listed on one side of the sheet. On the reverse or back side of each sheet, citations were written by hand under each of the eight categories cited in the introduction of Part 1 of this catalog (Wood & Bright 1987:3-16). SLW was responsible for the review of literature published from 1758 to 1959; he and his staff worked at the M. L. Bean Life Science Museum, Brigham Young University, Provo, Utah, USA. DEB was responsible for the review of literature from 1960 to 1989; he and his staff worked at the Canadian National Collection of Insects, Arachnids, and Nematodes, Canada Department of Agriculture, Ottawa, Ontario, Canada.

In the review of literature available to us (Wood & Bright 1987, references not marked by an [*] asterisk), each of us (SLW and DEB) extracted names to be indexed and wrote the beetle names, author, year of publication (including subletters), and page numbers on slips of paper. These data were then copied by technical staff on the back side of the data sheets cited above in the appropriate subject areas on those sheets. Many of the references marked with an asterisk (*) in the 1987 volume have since been found and the data have been indexed.

The senior author entered: (Item A) the basic taxonomic and distributional data from the data sheets into an IBM/PS Model 30 computer that had been networked with other museum computers to expand capacity. Each nominate taxon was then assigned a code number based on (a) three digits to identify the genus name, (b) three digits to identify the valid species name, and (c) two digits to identify the subspecies or synonym names. A word processor specialist then entered by computer number (Item B) all citations of each taxon in the appropriate subject areas for literature published from 1758 to 1959. The same procedure was followed at Ottawa for entering on a similar computer (Item C) all citations from 1960 to 1989. Copies of data diskettes, along with a hard copy of their contents, were then sent from Ottawa to Provo. The word processor specialist then combined in the computer Items B and C, alphabetized and edited the citations, then transferred the combined Items B and C to Item A to produce a rough draft of the full text of the catalog. On a few occasions, an error was made in entering the proper code number. We hope we have found and corrected all such errors, but the user should be alerted to the fact that all may not have been found.

At this point, the senior author then reviewed his taxonomic card files that were a composite of his entries from original literature that had been supplemented by entries from similar files microfilmed for him by the Smithsonian Institution and representing 50 years of independent research at Washington. Entries in the rough draft data base were then checked and supplemented by the card file entries, thus significantly expanding and verifying entries in the rough draft. Hard copies of the corrected manuscipt were then prepared and given to each author for detailed review and were checked item by item with the original data sheets. The final draft was prepared following entry of these corrections.

In the review of original articles, names were often cited on only one page even though the

name of that taxon may have appeared many times within that article. We note also that, in using the supplementary card file, indexers who prepared those files may have cited (a) only page one of the article, or (b) the entire article (e.g., pages 1-40) as applying to this taxon, when in reality the name is cited only once on page 34. Even though this may be misleading, it enabled us to cite definite references to numerous articles we could not examine (those marked by an [*] asterisk in the bibliography).

The assignment of articles to eight subject areas, while a good idea, was not as practical as one might have supposed. Many published articles were clearly assignable to one or more definite subject areas; others were not. We sometimes disagreed on the proper assignment, and even found ourselves assigning a given article to one subject area on one day and to a different subject area the next. One should pay attention to all eight subject areas when reviewing literature for a more restricted subject.

We fully realize that cataloging is an on-going process to which many contribute. The articles we have found and reviewed, for the most part, represent only those segments of literature in which key words attracted reviewers' attention. There is a large quantity of literature hidden in the archives of ecology, forestry, systematics, etc., which has not yet come to the attention of catalogers, that will be very useful. Perhaps this catalog will stimulate others to contribute additional information from such hidden sources.

PROCEDURES

Species contained in this catalog are organized under two families: Scolytidae and Platypodidae. All species assigned to these families from 1758 to 1991 and their synonyms known to us are included. Within each family, the subfamilies, tribes, and genera are organized phylogenetically as presented in Wood (1986a) for Scolytidae. Because there is no modern classification of Platypodidae available, this family is organized on a tentative phylogenetic arrangement that is based on a combination of Strohmeyer (1914b, 1914c), Schedl (1939p), and tentative concepts of SLW. The references listed under family, subfamily, and tribe headings are not intended to be exhaustive, but include only those works thought to be significant in the development of classification of the group. Citations of references listed under each species are as complete as our resources permitted. As indicated above, the cutoff date is 1989 for all subject areas except for taxonomic and geographical data.

The species within each genus that are recognized here as valid are listed in bold type in alphabetical order with their authors. The author name is followed in regular type by: (a) the year and page in which the name was first validated in nomenclature (this date is the one given in Part 1 of the bibliography of this catalog [Wood & Bright 1987] regardless of other considerations, and, in some instances, is known to be technically incorrect; most discrepancies are noted). When the species was originally named in a genus other than the one to which it is now assigned, that original genus is given in parentheses following the page number and before the period [.]. (b) The period is followed by an indication of the kind of primary type on which the taxon is based (holotype, lectotype, neotype, syntype) and the sex of the type, if known. The type information is concluded by a semicolon [;]. (c) The semicolon is followed by the type locality, as given in the original publication. When a discrepancy between the published type locality and that given on the labels of the type is known, the change is noted. Several authors, notably Schedl, listed all localities from which both primary and secondary types came; when this situation was found, we listed all localities. The type locality information is concluded with a semicolon [;]. (d) The semicolon is followed by a designation of the type repository as published with the original description. When the designated repository is different from the present location of the type, the change is noted. For example, several hundred of the Eggers types that belong to the Smithsonian Institution are presently in NHMW, Wien (see above remarks under "Schedl Factor . . ."). The names of most repositories are reduced to initials of the repository, and these initials are followed by the name of the city (or for Madagascar, by the name of the island). The full names of the repositories are given at the end of this Introduction. The full names of infrequently cited repositories are given in full. Personal collections are cited by the name of the owner, followed by the city name, if known. (e) When lectotypes have been designated, the name, year, and page of lectotype designation are given following a comma after the repository name and city.

Indented below each valid species name, the

following may appear: (a) figures: the citation of figures is given only when a figure of suitable quality is available. Poor quality figures and multiple citations were avoided. (b) Geographical distribution is given alphabetically with the countries of a particular continent clustered but separated from one another by a slash [/]. Subdivisions within a country are separated by commas. A few departures from normal geographical designations are incorporated in this section: (1) the Bahama Islands and Trinidad Island are treated as islands of the Antilles Islands, not as part of their adjacent continents; (2) Sakhalin Island (USSR), the Japanese Islands, Taiwan, and Hong Kong are all treated as part of Asia; (3) the Andaman Islands and Nicobar Islands are treated as part of India; (4) Malaya refers only to the continental peninsula and includes Singapore, it is not synonymous with Malaysia; (5) in order to conserve space for the frequently cited Malayan Archipelago, the inaccurate designation "Indonesia" was employed to include most of Indonesia, but excluded all of New Guinea, and included insular Malaysia; and (6) African islands were listed separately but clustered with African countries, except Madagascar which is treated as a separate land mass. (c) Hosts are listed alphabetically by the scientific names used by the authors of the articles cited. In most instances, we did not modernize the nomenclature or correct errors in spelling of hosts unless we were thoroughly familiar with the names. (d) Notes fall into three categories that are designated by numbers: category (1) notes include information that impacts nomenclature; category (2) notes pertain to synonymy; and category (3) notes convey significant messages from the authors of the present catalog to the reader and cite redescriptions, nomen nudums, and other information of importance.

Subspecies are geographical races that form distinctive populations that may intergrade with other subspecies. Because bark and ambrosia beetles are essentially internal plant parasites that are subjected while within their host to very limited environmental stresses, geographical races are uncommon in these families. Subspecies are recognized here only when sufficiently thorough studies have been made to convince the authors that recognizable geographical races exist. Almost all of Schedl's subspecies, and those of most other authors prior to 1960, are either aberrations that have no status in nomenclature or are cryptic (or sibling) species that are actually good species that lack obvious diagnostic characters. The names of subspecies recognized here have the subspecific and author names in bold type and are indented below the name of the species to which they belong. When subspecies are recognized, the names of synonyms of each subspecies are listed below the bold type name of the subspecies to which they belong.

Synonyms are indented below the valid names to which they belong; they are given in italics in chronological priority. The data on their types are listed as given for the valid species names to which we have added the original and other significant citations that establish synonymy.

Nomen nudums that have been cited in synonymy are listed in the index and in the category (3) Notes under the valid names. Nomen nudums of unknown species affinity were omitted from this catalog.

Under the side-heading "References," below each nominate taxon, the citations to published literature are presented. These are organized under the eight subject areas described in Wood & Bright (1987:16). These citations are organized alphabetically by author name(s). Author names are spelled as in Wood & Bright (1987) and exclude diacritic marks or spelling changes used to compensate for the removal of diacritic marks (except, Dobner =Doebner).

Eight genera, of which five are known only as fossils, are listed in the Incerta Cedis category. The types of two living genera in this category were from Africa and are now lost. Their placement must await additional information. The eighth genus was named so recently that we have not had time to locate the types.

ACKNOWLEDGMENTS

This segment of the catalog is an index to the work of others. We recognize and appreciate the efforts of the thousands of authors who have contributed toward the expansion of our knowledge of the Scolytidae and Platypodidae. We sincerely appreciate the help we have received from hundreds of librarians who have made special efforts to procure photocopies of needed articles for our use. We also thank the many curators of collections who assisted us as we examined type material at their museums, and those who arranged for loans that enabled us to resolve numerous taxonomic problems.

We are most appreciative to a dedicated staff who endured much or all of the seven years required by this project, for their help in this monotonous and boring task. The staff at Brigham Young University consisted of Rita Farias Espinel (1 year), Nadja Kummer (1 year), Imelda Lom (1 year), Pilar Pizarro Sweany (3 years) who aided in the extraction of citations; Carla Jolayne Rice (2 years) operated the computer; Dr. C. Selby Herrin (7 years) did all of the computer programming, consulting, maintenance, and management. The staff at Ottawa consisted of Jennifer Read (4 years) who aided with bibliography preparation, Robert E. Skidmore (2 years) was a general project assistant, Derrik Bell (1 year) was a computer entry specialist, Larry Spears (2 years) was the computer programmer and consultant.

The work at Brigham Young University was financed through major research awards received from the U. S. Department of Agriculture, Competitive Research Grants Program grant number 87-CRCR-1-2582, and through the National Science Foundation, Biological Research Resources Program award number 8711632. The work at Ottawa was financed by the Canada Department of Agriculture.

We thank our colleagues who kindly consented to prepare translations of this Introduction for the benefit of users.

INTRODUCTION

Les pages qui suivent représentent le premier essai sérieux d'un catalogage de la faune mondiale des Scolytidae depuis Hagedorn (1910d) et des Platypodidae depuis Strohmeyer (1914b, 1914c). Est également incorporé un supplément de mise à jour de la bibliographie (cf. 1ère partie de ce catalogue) jusqu'à la fin de 1989. Les notes de systématique et de biogéographie sont incluses jusqu'en 1991.

Les faits d'un interêt particulier qui sont apparus durant la préparation de ce volume son les suivants: (a) la quantité d'informations biologiques connues a été une surprise. Nous pensions qu'au moins 20% des espèces nominales ne seraient citées qu'une seule fois par la description originale, et qu'environ 20% des autres espèces seraient citées moins de 5 fois. Une estimation rapide montre que les espèces qui ne sont citées qu'une fois ne représentent que moins de 5% du total, et que celles citées moins de 5 fois representent un peu plus de 5%. (b) Le taux d'introduction des espèces par le biais des échanges commerciaux et qui s'établissent hors de leur zone d'origine doit être un sujet d'inquiétude au niveau mondial. Apres un siècle durant lequel à peine un espèce par décennie atteignait les Etats-Unis d'Amerique, au moins six espèces s'y son établies entre 1985 et 1989; quatre autres espèces ont été repertoriées en 1990, et encore trois autres en 1991. L'impact économique de ces espèces introduites se fait d'ores et déjà sentir et ne fera que s'accroître. Le fait que trois de ces treize espèces se reproduisent normalement suggère qu'il existe une lacune très significative dans les procédures phytosanitaires portuaires et ceci doit être un sujet de préoccupation pour l'agriculture et la sylviculture. Des procédures plus rigoureuses destinées a détecter d'éventuelles introductions, en particulier à proximité des terminaux protuaires, devraient être mises en place de manière urgente. Ce type de dissémination par les circuits commerciaux est un sujet de préoccupation pour toutes les Nations, aucune n'en est exempte. (c) En rapport étroit avec le facteur précédent, apparaît la nécessité impérieuse de développer la taxonomie des insectes et de former sérieusement des taxonomistes. A notre connaissance, il n'y a actuellement pas dans le monde de jeunes taxonomistes spécialisés dans l'étude des Scolytidae ou des Platypodidae, que ce soit dans les Universités, ou dans des organismes publics. L'identification de ces insectes est souvent d'une rare difficulté, et une compétence professionnelle dans ce domaine ne s'acquiert que sur une période de 10 à 20 ans. Les amateurs et les professionnels non spécialistes commettent souvent de grossiéres erreurs de jugement comme cela est attesté dans le présent volume par le nombre des synonymes. Ces erreurs sont souvent coûteuses par les conséquences qu'elles entraînent. Une attention immédiate à ces problèmes d'introduction est indispensable pour tous les groupes d'insectes d'importance économique comme les Scolytidae. Toutes les espèces de cette famille sont des parasites internes de plantes et sont de ce fait des vecteurs potentiels de maladies ou des déprédateurs directs des plantes-hôtes.

Le cas Schedl

Notre catalogue serait incomplet, ou même incompréhensible, sans au moins un bref commentaire sur le comportement et les activités de

Karl Eduard Schedl (1898-1979). Schedl fut un acteur important dans l'étude des Scolytidae et des Platypodidae pendant plus de cinquante ans. Il s'interessa aux Scolytidae vers l'age de 17 ans lorsqu'il observa le "frass" produit par une espèce d'*Ips* attaquant un pin cassé qui était tombé en travers d'une tranchée dans laquelle il se trouvait pendant la Première Guerre mondiale. Après cette guerre il suivit des cours d'entomologie forestière et s'intéressa rapidement à la systématique des Scolytidae. Il a publié 342 notes de taxonomie et est l'auteur de plus de 2 000 espèces nominales. Bien qu'utilisant parfois le mot "évolution" ou d'autres termes adoptés par la "Nouvelle Systématique," son concept personnel de l'espèce était entièrement morphologique, dans le sens pre-1940. L'utilisation qu'il fait de la sous-espèce ne concerne pas une "race" geographique, mais uniquement de très faibles variations morphologiques déviant du "type" (il ne s'agissait de rien d'autre que d'abérrations). Il raconta un jour à SLW qu'il considérait que les règles du Code international de nomenclature zoologique n'étainent pas un obligation pour lui. Pour cette raison il formula son propre code de nomenclature qui ne fut jamais écrit, et qui de ce fait ne put jamais être discuté.

Schedl avait pour habitude de placer un nom provisoire sous chaque individu qu'il ne pouvait identifier immédiatement. Quelquesuns de ces noms sont restés ainsi pendant des décennies, bien que lui et d'autres les aient cité de nombreuses fois dans la littérature, avant qu'ils ne soient formellement publiés ou rapportés à une espèce déjà connue. Une autre habitude déroutante qui lui était propre, ainsi qu'a d'autres collegues, était la désignation d'un holotype mâle et d'un holotype femelle pour chaque espèce. Cette habitude amena en de nombreuses occasions à une double description des espèces (et donc à la creation de synonymes qui sont aussi des homonymes). Fort heureusement il a publié une liste des matériaux typiques de Platypodidae de sa collection (Schedl 1978a), et un peu plus tard un volume similaire pour les Scolytidae (1979c). Ces catalogues son incomplets, mais recensent les "holotypes," lectotypes et neotypes de sa collection. Beaucoup de ces designations sont invalides et doivent en conséquence être utilisées avec prudence. Un grand nombre de ses "holotypes" proviennent de séries syntypiques, la plupart des lectotypes son désignés sans indication d'origine géographique ou d'éléments associés à ce choix. Enfin à notre avis, aucun des néotypes n'est conforme aux règles du Code.

Un dernier élément nécessitant une explication afin que les utilisateurs du catalogue comprennent bien le problème, es comment une partie de la Collection Eggers parvint en possession de Schedl. Vers la fin de la Seconde Guerre mondiale, Hans Eggers, le spécialiste mondial des Scolytidae à cette époque, contacta W. H. Anderson, Conservateur des Scolytidae et Platypodidae à la Smithsonian Institution et offrit de vendre sa collection pour 4 000 $. La Smithsonian accepta l'offre et paya la totalité de la somme immédiatement. Eggers commença le conditionnement et l'expédition de sa collection à Washington, mais décéda brutalement alors que seulement un tiers de la collection avait été expédiée. Du fait de l'occupation militaire en Allemagne et des difficultés de déplacement en Europe à la fin de la guerre, un entomologiste européen fut embauché pour terminer l'expedition. Cet entomologiste était Karl E. Schedl (Anderson, W. H. & Anderson 1971:1-2). Force est de constater que seulement une petite partie du reste de la collection Eggers confiée aux soins de Schedl arriva à Washington, alors qu'une partie substantielle du matériel typique et non-typique se retrouva dans la collection Schedl.

Schedl (1979c:2) a expliqué comment cette part significative de la collection Eggers est entrée en sa possession. Il répéta ceci, de manière beaucoup plus détaillée a SLW en septembre 1965 à Lienz. Cependant, pour sincère que soit le récit de Schedl il est en contradiction avec ce que racontra Mme Butovitsch (femme de Viktor Butovitsch et fille de Hans et Elsa Eggers) à diverses occasions à L. G. E. Kalshoven et F. G. Browne, propos qui furent rapportés à SLW. Dans cette version, Schedl aurait simplement conservé ce qui lui plaisait pour son usage personnel. Les faits avérés en rapport avec la transaction sont les suivants: (1) A la mort de son mari, Elsa Eggers était sénile au point "de ne pouvoir se souvenir de son propre nom." Apres la mort de Hans, leur fille devenue le "tuteur" legal s'occupait de toutes ses affaires, mais en aucun cas de ce qui concernait la collection de son père ou de Schedl. (2) En 1952, et de nouveau en 1961, W. H. Anderson et S. L. Wood en étudiant un grand nombre (plus de 20) feuilles de prêt de la Smithsonian, constatèrent qu'elles étaient

toutes tapées à la machine, à intervale simple, et signées par K. E. Schedl qui reconnaissait donc *de facto* avoir en communication plusieurs centaines de types primaires et secondaires pris dans la collection Eggers pendant qu'il préparait l'expédition du reste de cette collection. La rédaction de ces feuilles de prêt fut imposée à Schedl par l'Attache militaire U.S. qui supervisait le tri et la préparation de la collection. Il semble que Schedl ignorait que ces feuilles étaient envoyées immediatement à la Smithsonian à Washington. Selon W. H. Anderson et D. M. Anderson (son successeur), et confirmé par nos propres observations, aucun de ces matériaux ne fut jamais rendu à Washington. Dans notre catalogue, nous soulevons de nombreux cas d'incohérence sur le lieu de conservation de ces matériaux. D'autres problèmes de cette nature concernant des prêts du Research Institute, Dehra Dun; du CSIRO, Canberra; et d'autres instituts son cités tout au long du catalogue.

Enfin, pour que l'utilisateur de notre catalogue sache comment une douzaine de types de Eichhoff parvinrent en possession de Schedl, nous pouvons rapporter ce que Schedl lui-même raconta à SLW en Septembre 1965. Vers la fin de la guerre, Schedl était officier dans l'armée Allemand et occupait des fonctions de responsabilité dans la gestion des régions forestières des pays occupés par les troupes Allemand. Schedl était alors en Pologne quand le front Est s'écroula. Avant de s'enfuir il s'arrêta au Musée de Stettin où était conservée la collection Dohrn (qui contenait une douzaine ou plus de types de Eichhoff). Lorsque Schedl arriva au Musée, seul le conservateur de la section Coléoptères était encore présent, mais s'apprêtait à fuir. Selon les dires de Schedl, lorqu'il demanda à ce conservateur les types de Eichhoff, celuici lui dit de les prendre et de s'enfuir. Toutes les collections du Musée de Stettin furent completement detruites, sauf ces quelques spéciments.

Materiels et Methodes

Comme il est fait mention dans l'Introduction de la Partie 1 (Wood & Bright 1987), les prémices de ce catalogue remontent à 1946 lorsque SLW commença un fichier taxonomique et d'auteurs, en même temps qu'il entreprenait de manière systématique des recherches sur la littérature traitant des Scolytidae et des Platypodidae du monde. Ces fichiers furent continués jusqu'aux environs de 1980, mais ne sont, à cette date, vraiment complets que jusqu'en 1970. Ces fichiers son accompagnés d'une collection d'insectes piqués comprenant plus de 100 000 specimens de Scolytidae et 3 000 Platypodidae, ainsi qu'une importante collection de doubles conservés en alcool. La plupart de ce matériel, incluant en outre plus de 2 000 espèces biologiques, fut récolté par lui-même sur le continent américain, en Asie, en Australie, en Europe, au Japon, en Nouvelle-Guinée et au Sri Lanka. De plus, de 1960 à 1990, SLW a échangé des spécimens identifiés avec plusieurs Musées ainsi qu'avec Browne, Krivolutskaya, Kurenzov, Murayama, Schedl, etc. Il a fournit des identifications à ses collègues professionnels en échange d'une partie du matériel soumis de 1945 à aujourd'hui. Afin de s'assurer de l'identité des espèces, il a procédé a des comparaisons directes avec les types primaires des institutions suivantes: AMNH (New York), CAS (San Francisco), MCZ (Cambridge, Mass.), USNM (Washington), CNCI (Ottawa) en Amérique du Nord; BMNH (Londres), IZL (St. Peterbourg), IZM (Moscou), MZU (Helsinki), MNHN (Paris), NHMW (Vienne), la Collection Schedl (Lienz) en Europe; FRI (Dehra Dun), la Collection Nobuchi (Ibaraki) en Asie. De nombreux types primaires et secondaires ont été étudiés à l'occasion de prêts de nombreux autres Musées ou collections privées. Il a examiné les spécimens originaux d'environ deux tiers des espèces nominales citées ci-après.

DEB s'engagea dans ce projet en 1961-1963, lorsque étudiant, il travaillait avec SLW. Son intérêt s'est intensifié dans les années 1970, et en 1981 ils unirent leurs efforts pour competer et compiler ce catalogue. DEB a récolté de manière intensive au Canada, aux USA, au Mexique et a Bornéo. DEB est chercheur au Canadian National Collection of Insects, Arachnids and Nematodes (CNCI, Ottawa) depuis 1966. Dans le cadre de ses recherches et de la réalisation du présent project, il a effectué des missions d'etude des matériels typiques dans les Musées suivants: CAS (San Francisco), FMNH (Chicago), MCZ (Cambridge, Mass.), USNM (Washington), la Collection Wood pour l'Amérique du Nord; BMNH (Londres), MNHN (Paris), NHMW (Vienne) en Europe. De nombreux types primaires ont également été etudiés à l'occasion de prêts de nombreux

autres Musées ou collections privées. Un service d'identification, du même type que celui cité plus haut, a été mis en place depuis 1966.

De façon à ce que l'utilisateur comprenne et sache gérer les erreurs qui pourront être relevées dans le catalogue, il nous semble nécessaire de décrire les méthodes et procédures qui ont été utilisées pour son edification.

Les informations de base concernant chaque taxon ont été saisies sur des fiches de deux sortes: (1) fiches du groupe-genre, et (2) fiches du groupe-espèce. Sur ces fiches figurent le nom, le (les) auteur(s), les renseignements concernant le type, labels (etiquettes), lieu de dépôt, nom de genre original, nom de genre actuel, référence de la description originale, nom valide du taxon, notes diverses, distribution géographique ainsi que les plantes-hôtes. Au revers de ces fiches sont reportées à la main des références de rapportant aux huit rubriques citées dans l'Introduction de la Partie 1 de ce catalogue (Wood & Bright 1987:3-16). SLW est responsable pour ce qui concerne la littérature publiée de 1758 à 1959. Lui et son équipe ont travaillé au Monte L. Bean Life Science Museum, Brigham Young University, Provo, Utah, USA. DEB est responsable de la littérature des années 1960 à 1989. Lui et son équipe ont travaillé à la Canadian National Collection of Insects, Arachnids and Nematodes, Canada Department of Agriculture, Ottawa, Ontario, Canada.

Dans la littérature que nous avons pu consulter (Wood & Bright 1987), references sans asterisque [*], chacun de nous (SLW et DEB) a relevé les noms à indexer et a extrait le nom de l'insecte, l'auteur, l'année de publication (y compris l'indexation alphabétique) et les ont reporté sur des fiches. Ces renseignements furent ensuite recopiés par des collaborateurs de l'équipe au dos des fiches décrites précédemment, dans les différentes rubriques. Beaucoup des références marquées d'un astérisque [*] dans le volume de 1987 ont été consultées depuis et leur contenu a donc été indexé.

SLW a saisi: (rubrique A) les renseignements taxonomiques et biogéographiques de base sur un IBM/PS2 Model 60, relié par réseau à d'autres ordinateurs afin d'étendre ses capacités. A chaque taxon un numéro de code était attribue de la manière suivante: (a) trois chiffres pour identifier le nom du genre, (b) trois chiffres pour identifier le nom valide de l'espèce, et (c) deux chiffres pour identifier la sous-espèce ou les noms synonymes. Un spécialiste en traîtement de texte a saisi ensuite (rubrique B) toutes les citations pour chaque taxon dans les champs appropriés pour la littérature couvrant la période 1758-1959. La même procédure a été suivie à Ottawa pour la saisie sur un ordinateur similaire (rubrique C) de toutes les mentions entre 1960 et 1989. Des disquettes des informations ainsi que des copies-papiers étaient alors envoyées d'Ottawa à Provo. Le spécialiste en traîtement de texte réunissait alors les éléments B et C, procédait à leur classement, puis tranférait l'ensemble dans la rubrique A pour produire une copie brute du texte complet du catalogue. A quelques occasions il y eut des erreurs de saisie dans le code. Nous espérons avoir retrouvé et corrigé toutes ces erreurs, mais nous devons prévenir l'utilisateur qu'il peut en subsister encore quelques unes.

A ce moment, le premier auteur a repris toutes ses fiches qui étaient un composite de ses relevés dans la littérature originale complétées par des renseignements tirés de fiches similaires microfilmées provenant de la Smithsonian Institution et qui représentaient 50 années de travaux équivalents et indépendants à Washington. Les saisies du texte brut étaient alors vérifiées et complétées avec ces fiches, ce qui accroissait significativement leur volume et permettait de comparer les saisies du text brut. Des copies-papier du manuscrit corrigé étaient fournies à chaque auteur pour vérification et comparées rubrique par rubrique avec les relevés originaux. Le text définitif était alors mis au point en tenant compte de ces corrections.

Dans la bibliographie originale, les noms des taxons étaient souvent cités par une seule page même si le nom du taxon apparaissait plusssieurs fois dans le cours de l'article. Nous avon également noté que, en utilisant les fiches complémentaires, les personnes qui avaient préparés ces fiches avaient pu: (a) seulement fait apparaître la première page de l'article, ou (b) la pagination compléte (e.g., pages 1-40) s'appliquant à ce taxon, alors que son nom n'était cité qu'une seule fois page 34. Bien que ceci puisse être déroutant, cette situation nous permet de donner des références complètes à de nombreuses publications que nous n'avons pu consulter nous-mêmes, celles précédées d'un astérique [*] dans la bibliographie.

L'attribution des articles dans nos 8 rubriques, bien que répresentant une bonne idée, ne fut pas aussi aisée que nous l'avions supposé.

Beaucoup des articles publiés pouvaient facilement être classés dans une ou deux rubriques, alors que d'autres ne l'étaient pas. Nous nous sommes souvent opposés sur l'attribution à donner, et nous sommes même trouvés dans la situation ou un jour l'attribution était faite dans une rubrique et dans une autre rubrique le lendemain. Nous vous recommandons la plus grande attention sur le choix dans les 8 rubriques si vous rechercher des sujets très précis.

Nous avons clairement réalisé que le catalogage était une opération à laquelle beaucoup de choses contribuent. La plupart des articles que nous avons trouvés et analysés, ne représentent qu'une partie de la littérature dans laquelle des mots-clés ont attiré l'attention des "reviewers." Il y a une énorme quantité de renseignements cachés dans les publications d'écologie, de sylviculture, de systématique, etc., qui n'a pas encore attiré l'attention, et qui seront de la plus grande utilité. Nous espérons que le présent catalogue pourra stimuler nos collègues qui nous ferons connaître des références utiles dans cette littérature "cachée."

Procedures

Les espèces mentionnées dans cet ouvrage sont rangées dans deux familles: Scolytidae et Platypodidae. Toutes les espèces assignées à ces familles entre 1758 et 1991, ainsi que les synonymes qui nous sont connus sont également incluses. Pour les Scolytidae, l'arrangement des sous-familles, tribus et genres suit la phylogénie de Wood (1986a). Du fait de l'absence de classification récente des Platypodidae, cette famille est présentée selon une hypothèse de phylogenie reposant sur une combinaison de Strohmeyer (1914b, 1914c), Schedl (1939p) et les hypothèses de SLW. Les références citées pour le groupe-famille, les sous-familles et tribus ne se prétendent pas exhaustives, mais ne comprennent que les références que nous penson significatives dans l'étude de la classification supérieure. Les références données pour chaque espèce son aussi complètes que possible. Comme déjà signalé précédemment, la date limite pour les références est 1989 por toutes les rubriques, et 1991 pour la systématique et la biogéographie.

Les espèces que nous reconnaissons valides dans chaque genre sont imprimées en charactères gras, par ordre alphabétique avec le nom de leur descripteur. Le nom du descripteur est suivi en charactères "bas-de-casse" par: (a) l'année de parution et la page à laquelle le nom fut validé pour la première fois dans la nomenclature (la date est celle donnée dans la Partie 1 [Wood & Bright 1987], sans autre considération, même si dans quelques cas nous la savons incorrecte; la plupart de ces divergences sont notées). Quand l'espèce fut originellement décrite dans un autre genre que celui auquel elle est maintenant rattachée, le genre original est donné entre parenthèses () après la pagination et avant le point [.]. (b) Ce point est suivi d'indications sur la catégorie de type sur lequel le taxon est fondé (holotype, lectotype, néotype, syntype), ainsi que le sexe de ce type s'il est connu. Ces informations sur le type son suivies d'un point-virgule [;]. (c) Ce point-virgule est suivi de la localité typique donnée dans la publication originale. Quand une divergence entre la localité-type publiée et celle portée par les étiquettes du specimen a été relevée, elle est signalée. Plusieurs auteurs, notament Schedl, faisaient figurer la totalité des localities des types primaires et secondaires. Dans une telle situation, nous avons également fait figurer l'ensemble de ces localitiés. Ces renseignements sont suivis d'un point-virgule [;]. Ce point-virgule est suivi d'une indication du lieu de conservation du type tel qu'il a été publié dans la description originale. Quand le lieu de conservation est différent de celui publié, la modification est signalée. Par exemple, plusieurs centaines de types d'Eggers appartenant à la Smithsonian Institution sont actuellement conservés a Vienne (NHMW) (voir ci-dessus les remarques dans le paragraphe "Le cas Schedl"). Les noms de la plupart des institutions où sont déposés les types sont réduits à leurs initiales qui sont suivies du nom de la ville (ou pour Madagascar par le nom de l'île). Les noms complets de ces institutions sont données à la fin de l'introduction. Les noms non abrégés figurent pour les institutions citées peu fréquemment. Les collections personnelles sont citées par le nom de leur propriétaire, suivi du nom de la ville si elle est connue. (c) Quand des lectotypes ont été designées, le nom, l'année et la page de designation sont données après la virgule suivant les renseignements sur le lieu de dépôt.

En retrait, sous chaque nom d'espèce valide, peuvent apparaître les renseignements suivant: (a) figures: la mention d'une figure est donnée seulement lorsque celle-ce est de qualité

suffisante. Les figures peu significatives et ses citations multiples sont évitées. (b) La distribution géographique est donnée alphabétiquement par pays pour chaque continent qui sont séparés les uns des autres par une barre penchée [/]. Les subdivisions par pays sont séparées par des virgules. Quelques exceptions existent: (1) les îles Bahamas et celles formant la Trinidad sont traitées comme des îles des Antilles et non comme des morceaux des pays voisins; (2) les Iles Shakalines (CEI), les îles de l'archipel nippon, Taiwan et Hong-Kong sont traîtées comme des portions de l'Asie; (3) Andaman et Nocobar son considérées comme des morceaux de l'Inde; (4) "Malaya" se rapporte uniquement a la partie continentale de la peninsule et comprende Singapoure. Ce terme n'est pas synonyme de "Malaysia;" (5) afin réduire l'espace utilisé par le terme fréquemment publié de "Malayan Archipelago," le terme impropre de "Indonesia" a été utilisé pour couvrir la plus grande partie de l'Indonésie, mais en excluant la totalité de la Nouvelle-Guinée, tout en conservant la "Malaysia" insulaire; (6) les îles africaines sont nommées séparément mais sont rattachées aux pays du continent, sauf Madagascar qui est traîté comme un bloc continental. (c) Les plantes-hôtes figurent par ordre alphabétique en suivant les noms scientifiques utilisés par les auteurs cités. Dans la plupart des cas, nous n'avons pas réactualisé la nomenclature botanique ou corrigé les fautes d'impression, sauf quand nous étions très au courant des corrections à apporter sur certain noms. (d) Les publications rentrent dans 3 catégories qui sont désignées par des chiffres: les publications de la Catégorie (1) contiennent des informations concernant la nomenclature; les publications de la Catégorie (2) concernent la synonymie; et les notes de la Catégorie (3) renferment des renseignements provenant des auteurs du présent catalogue et citent les redescriptions, les *nominae nudae* et d'autres informations de première importance.

Les sous-espèces constituent des races géographiques qui forment des populations distinctes mais qui peuvent chevaucher avec d'autres sous-espèces. Parce que les Scolytidae et les Platypodidae son essentiellement des parasites internes de plantes, ils sont peu suject (tant qu'ils sont dans leur hote) aux "stress" environnementaux, de ce fait, les races géographiques sont peu nombreuses dans ces deux familles. Nous n'avons reconnu ici des sous-espèces que lorsque des travaux suffisemment précis existent pour convaincre les auteurs de la réalité d'une race géographique. De fait, la quasi totalité des sous-espèces décrites par Schedl, et celles de la plupart des auteurs, décrites antérieurement à 1960, sont soit des abérrations qui ne possèdent aucun statut dans la nomenclature ou sont des espèces cryptiques (sibling-species) qui nécessitent une redéfinition de leurs caractères. Les noms des sous-espèces reconnues dans le présent ouvrage sont imprimés en caractères gras ainsi que le nom de leur auteur et sont en retrait par rapport au nom de l'espèce. Quand des sous-espèces sont reconnues, les noms des synonyms de chaque sous-espèce figurent sous le nom en caractère gras auquel elle doivent être rapportées.

Les synonymes son placés en retrait sous le nom valide auxquels ils doivent être rapportées; ils apparaissent en caractères italiques dans l'ordre chronologique de priorité. Les renseignements donnés sur les types de ces synonymes figurent sous la même forme que pour les espèces valides, nous y avon ajouté les citations originales ou significatives pour ce qui concerne la synonymie.

Les *nominae nudae* qui sont placés en synonymie figurent dans l'index et dans la catégorie Notes (3) sous leur nom valide. Les *nominae nudae* des espèces dont les affinités spécifiques sont inconnues ne figurent pas dans le catalogue.

Dans les références, sous chaque taxon nominal, figurent les citations publiées dans la littérature. Celles-si sont regroupées dans les 8 rubriques proposées dans Wood & Bright (1987:16). Ces mentions apparaissent par ordre alphabétique de nom(s) d'auteur(s). Les noms d'auteurs apparaissent comme dans Wood & Bright (1987) et ne tiennent pas compte des signes diacritiques ou des modifications d'orthographe relatives cette absence de signes diacritiques (sauf Dobner =Doebner).

Huit genres qui ne sont connus que comme fossiles figurent dans la categorie *Incertae Sedis*. Les types de deux genres afrotropicaux actuels, mais perdus, figurent dans cette rubrique, leur position systématique ne pouvant être précisée sans autres information les concernant. Le huitieme genre a été décrit si récemment que nous n'avons pu encore localiser les types.

REMERCIEMENTS

Nous sommes reconnaissants aux milliers d'entomologists qui ont contribué a l'accroissement de nos connaissances sur les Scolytidae et les Platypodidae. Nous avon très sincerèment apprécié l'aide particulière reçue de centaines de bibliothécaires qui nous ont procuré les photocopies d'articles qui nous étaient nécessaires. Nous remercions également les nombreux conservateurs qui ont apporté leur aide dans l'étude de materiaux typiques déposés dans leurs institutions, ainsi que ceux qui nous ont communiqué des matériaux permettant de résoudre de nombreux problèmes taxonomiques.

Nous sommes particulièrement reconnaissants à notre équipe durant les sept années qui furent nécessaires pour mener à bien ce travail, pour les taches répétitives et souvent lassantes qu'ils ont eu à effectuer. L'équipe à Brigham Young University était composée de Rita Farías Espinel (1 année), Nadja Kummer (1 année), Imelda Lom (1 année), Pilar Pizarro Sweany (3 années) qui nous ont aidé dans "l'extraction" des citations; Carla Jolayne Rice (2 années) pour son travail a l'ordinateur; le Dr. C. Selby Herrin qui eut pendant 7 ans la responsabilité de la préparation des programmes informatiques, la maintenance et l'organisation. L'équipe d' Ottawa comprenait Jennifer Read (4 années) qui s'occupa de la préparation de la bibliographie, Robert E. Skidmore (2 années), assistant principal du projet, Derrik Bell (1 année) spécialiste de la saisie informatique, Larry Spears (2 années), programmeur et consultant.

Le travail à Brigham Young University a été financé par les principaux fonds de recherche de l'U.S. Department of Agriculture, Competitive Research Grants Program (fonds 87-CRCR-1-2582) et par la National Science Foundation, Biological Research Resources Program (no. 8711632). Le travail à Ottawa a été financé par le Canada Department of Agriculture.

Nous remercions également nos collègues qui ont assuré les traductions de cette introduction.

Traduit et adapte par J. J. Menier, MNHN, Paris.

EINLEITUNG

Die folgenden Seiten enthalten den ersten ernsthaften Versuch seit Hagedorn (1910d) die Weltfauna der Scolytiden und seit Strohmeyer (1914b, 1914c) die der Platypodiden aufzulisten und zu katalogisieren. Auch ist eine Ergänzung zur Bibliographie beigefügt, die als Band 1 dieses Katalogs erschien, und die Literature bis Ende 1989 erfasst. Zitate der systematischen und biogeographischen Literatur sind bis einschliesslich 1991 angemerkt.

Während der Erstellung dieses Bandes ergab sich eine Reihe von Tatsachen besonderen Interesses, darunter: (a) Der Umfang der biologischen Information war eine Überraschung. Es war erwartet, dass mindestens 20 Prozent der beschriebenen Arten lediglich einman in Form der Originalbeschreibung zitiert wurden und das weitere 20 Prozent weniger als 5 mal zu finden seien. Ein erster Überblick lässt vermuten, dass veniger als 5 Prozent der Arten nur einman zitiert wurden und wenig mehr als weitere 5 Prozent der gesamten Zitate weniger als 5 Veröffentlichungen betrafen. (b) Alarmierend ist die Rate, mit der Arten durch den Handel ausserhalb ihres Verbreitungsgebietes verschleppt werden und sich dort vermehren. Nach einem Jahrhundert, in dem kaum eine Art pro Jahrzehnt die USA erreichte, wurden zwischen 1985 und 1989 mindest 6 Arten eingeschleppt; weitere vier 1990 und 1991 zusätzlich drei. Der wirtschaftliche Impakt der eingeschleppten Arten ist bereits fühlbar und wird zunehmen. Die Tatsche, dass sich drie dieser 13 Arten ganz normal bisexuell fortpflanzen, lässt auf fehlerhaften Verfahren bei der Einfuhrkontrolle schliessen und sollte Land- und Forstwirtschaft nachdenklich stimmen. Häufigere und gründlichere Kontrollverfahren für die Entdeckung eingeschleppter Schädlinge sind besonderes in der Nähe von Einfuhrhäften dringend notwendig. Die Verschleppung durch den Handel ist eine weltweite Sorge für alle Nationen, keine ausgenomen. (c) Verbunden mit dieser Sorge ist der Bedarf an besserer Ausbildung und zusatzlichen Forschungsmöglichkeiten für Systematiker in der Entomologie. Uns ist kein junger Specialist bekannt, der sich ernsthaft mit der Taxonomie der Scolytiden oder Platypodiden befasst sei es als Graduierter oder Berufstätiger irgendwo in der Welt. Die Bestimmung dieser Insekten is oft ungewöhnlich schwierig und professionelle Kompetenz bedarf einer 10 bis 20 jährigen Erfahrung. Amateure und inkompetente Fachkräfte machen grobe Fehler wie sich aus der Zahl und Verbreitung der in diesem Band aufgeführten

Synonyma ergibt. Dergleichen Fehler können so kostspielig sein, dass jedem schwindlig wird, der die Konsequenzen bedenkt. Dieses Problem bedarf der schnellen und erhöhten Aufmerksamkeit für alle Insektengruppen mit grosser wirtschaftlicher Bedeutung wie den Scolytiden. Alle Borkenkäferarten sind minierende Pflanzenschädlinge und folglich potentielle Vektoren von Pflanzenkrankheiten neben dem direkten Befall der Wirtspflanzen.

Schedl und die Borkenkafer-Forschung

Dieser Katalog wäre nicht vollständig oder verständlich ohne auf die Methoden und Arbeiten von Karl Eduard Schedl (1898-1979) einzugehen. Für mehr als 50 Jahre war Schedl ein "Hauptfaktor" im Studium der Scolytiden und der Platypodiden. Sein Interesse an Borkenkäfer begann mit 17 Jahren als er das Bohrmehl einer *Ips*-Art in einer Kiefer beobachtete, die im Ersten Weltkrieg über einen Schützengraben gefallen war, in dem er sich befand. Nach dem Krieg studierte er Forstwissenschaften und interessierte sich alsbald für die Systematik. Er veröffentlichte 342 Artikel über die Borkenkäfer-Taxonomie und beschrieb mehr als 2,000 Arten. Obgleich er gelegentlich den Begriff "Evolution" oder andere Termini der Neuen Systematik benutzte, so war sein Konzept vom Artbegriff ein ausschliesslich morphologisches der Vorkriegszeit. Seine Beschreibung von Unterarten beruhte nicht auf geographischen Rassen sondern auf minuziösen Abweichungen von seinem "Typ" (gewöhnlich waren dies lediglich Aberrationen). SLW erzählte er, dass er den "International Code on Zoological Nomenclature" nicht für sich verbindlich halte; er verfuhr deshalb nach eigenen Regeln, die weder aufgeschrieben noch mit Kollegen diskutiert wurden.

Schedl pflegte einem Insekt, das er nicht bestimmen konnte, einen Manuskriptnamen zu geben. Diese Namen blieben oft für Jahrzehnte in seinem Sammlungen bestehen und wurden von ihm oder anderen wiederholt zitiert bevor sie formal beschrieben oder einer früher beschriebenen Art zugeordnet wurden. Eine andere Gepflogenheit, die ihn selbst und andere verwirrte, war die Beschreibung eines "Mänchen-Holotyps" und eines "Weibchen-Holotyps" für jede Art. Dieses Verfahren führte vielfach zur Doppelbeschreibung einer Art (und homonymen Synonyma). Zum Glück veroffentlichte er eine List der Typenmaterials, das sich in seiner Sammlung befand, zunächst für die Platypodiden (Schedl 1978a), später für die Scolytiden (Schedl 1979c). Diese Kataloge sind nur teilweise vollständig führen aber "Holotypen," die Lectotypen und Neotypen in seiner Sammlung auf. Viele der Zuordnungen sind ungültig und sollten deshalb mit Vorsicht benutzt werden. Viele Arten, die er zuvor aus syntypischen Serien benannt hatte, erhielten unkorrekter Weise einen "Holotyp," die meisten Lectotypen werden ohne Hinweis auf die geographische Herkunft oder anderen Daten ihrer Auswahl aufgeführt und u.E. entspricht keiner der Neotypen den Anforderungen des "International Codes."

Um dem Leser den Katalog verständlich zu machen, wäre auch zu erläutern, wie ein bedeutender Teil der Eggers Sammlung in den Besitz Schedl's kam. Gegen Ende des Zweiten Weltkrieges nahm Hans Eggers, seiner Zeit die weltweit anerkannte Authorität auf dem Gebiet der Borkenkäfer, Verbindung mit W. H. Anderson, dem Kurator für Scolytiden und Platypodiden am Smithsonian Institut auf und bot ihm seine Sammlung für $4,000 an. Das Institut akzeptierte das Angebot und bezahlte Eggers im Voraus. Eggers begann damit die Sammlung zu verpacken und nach Washington zu senden, starb aber bevor ein Drittel der Sammlung unterwegs war. Wegen der militärischen Besetzung Deutschlands und den Reiseschwierigkeiten in Europa zu Kriegsende wurde ein europäischer Entomologe engagiert, der die Versendung der Sammlung abwickeln sollte. Dieser Entomologe war Karl E. Schedl (Anderson, W. H. & Anderson 1971:1-2). Lediglich ein Bruchteil der Eggers Summlung, die Schedl übergeben war, kam in Washington an, während ein beachtlicher Teil des Typen- und Nichtypenmaterials in Schedl's Sammlung auftauchte.

Schedl (1979c:2) berichtete wie dieser bedeutende Teil der Eggers Sammlung in seine Hände kam. Dasselbe erzählte er SLW im September 1965 in Lienz ausführlicher. Wie aufrichtig Schedl's Bericht auch gewesen sein mag, er steht im Gegensatz su dem, war Frau (Mrs.) Viktor Butovitsch (Tochter von Hans und Elsa Eggers) bei unterschiedlichen Gelegenheiten L. G. E. Kalshoven und F. G. Browne erzählt hat und SLW berichtet wurde. Ihr

zufolge nahm sich Schedl einfach was er haben wollte. Dokumentierbare Fakten dieser Transaktion sind: (1) Beim Tod ihres Mannes war Elsa Eggers so senil, dass "sie nicht einmal ihren eigenen Namen wusste." Nach Hans Tod war die Tochter ihr gesetzmässiger Vormund und führte all ihre persönlichen Geschäfte, keines betraf die Sammlung oder Schedl. (2) 1952 und wiederum 1961 haben W. H. Anderson und S. L. Wood zusammen eine grössere Zahl (mehr als 20) von (USNM) Leihscheinen des Smithsonian Institut durchgeschen; auf den maschinen-geschriebenen und unterszeichneten Formalaren bestätigt Karl E. Schedl den Empfang von mehreren hundert primären und sekundären Typen, ausgeliehen von der Eggers Sammlung während er sie für den Versand vorbereitete. Der U. S. Militär-Attaché, der Schedl's Verpacken und Sortieren der Sammlung beaufsichtigte, hatte Schedl die Leihscheine auferlegt. Offenbar wusste Schedl aber nicht, dass diese Leihscheine direkt an das Smithsonian Institute gesandt wurden. W. H. Anderson und D. M. Anderson (seinem Nachfolger) zufolge sowie bestätigt durch eigene unabhängige Beobachtungen wurde das Material niemals Washington zurückgegeben. In unserem Katalog werden wiederholt Probleme zitiert die widersprüchliche Angaben über Sammlungsorte betreffen. Ähnliche Probleme bestehen mit nicht zurückgegebenen Ausleihen vom Forest Research Institute, Dehra Dun, vom CSIRO, Canberra, und anderen Institutionen und sind im Katalog erwähnt.

Zum Verständnis der Katalogbenutzer wird im folgenden erläutert wie Schedl in den Besitz eines Dutzend der Eichhoff Typen gelangte. Wie Schedl im September 1965 erzählte, war Schedl zu Ende des Zweiten Weltkrieges Major im deutschen Heer und mit der Bewirtschaftung von Wäldern in den besetzten Gebieten betraut. Als die Ostfront zusammenbrach war Schedl in Polen. Bevor er floh besuchte er das Stettiner Museum wo sich die Dohrn Sammlung befand (die Sammlung enhielt ein Dutzend oder mehr Eichhoff Typen). Als Schedl das Museum erreichte, war es verlassen mit Ausnahme des Kurators für Coleopteren. Gemäss Schedl empfahl im der Kurator die Eichhoff Typen, nach denen er gefragt hatte, mitzunehmen und um sein Laben zu rennen. Abgesehen von diesen Exemplaren wurde das Material des Stettiner Museums durch Kriegseinwirkung vernichtet.

Material und Methoden

Wie in der Einleitung zum Teil 1 des Katalogs (Wood & Bright 1987) erwähnt wurde der Katalog 1946 begonnen, indem SLW anfing Sach- und Autorenregister im Rahmen einer systematischen Erfassung der Scolytiden- und Platypodiden-Literatur aufzustellen. Diese Karteien wurden bis 1980 geführt, sind aber nur bis 1970 einigermassen vollständig. Diese Karteien wurden durch eine Sammlung von mehr als 100,000 genadelten Exemplaren der Scolytidae und 3,000 Platypodidae sowie eine umfangreiche Duplikatensammlung in Ethanol ergänzt. Das meiste Material, das mehr als 2,000 biologische Arten umschliesst, hat er selbst in Nord- und Sudamerika, Asien, Australien, Europa, Japan, Neu Guinea und Sri Lanka gesammelt. Zusätzlich hat SLW 1960 bis 1990 bestimmte Exemplare mit mehreren grossen Museen sowie mit Browne, Krivolutskaya, Kurenzov, Murayama, Schedl etc. ausgetauscht. Im Austausch gegen einem Teil der Exemplare hat er seit 1945 bis heute für Kollegen eingesandtes material bestimmt. Um die Bestimmung von Arten authentisch abzusichern hat er Proben mit den primären Typen verglichen beim: AMNH (New York), CAS (San Francisco), MCZ (Cambridge), USNM (Washington), CNCI (Ottawa) in Nordamerika; beim BMNH (London), IZL (St. Petersburg/Leningrad), IZM (Moskau), MZU (Helsinki), MNHN (Paris), NHMW (Wien), Schedl Sammlung (Lienz) in Europa; FRI (Dehra Dun), Nobuchi Sammlung (Ibaraki) in Asien. Auf dem Weg der Ausleihe wurden zahlreiche primäre und sekundäre Typen von vielen anderen Museen und aus privaten Quellen examiniert. Er hat die authentischen Exemplare von etwa zwei Dritteln der aufgeführten Arten untersucht.

DEB wurde mit dem Katalogisieren vertraut als er 1961-1963 als Student mit SLW arbeitete. Sein Interesse verstärkte sich in den 1970ern und beide Authoren vereinigten ihre Krafte 1981, um diesen Katalog zu schaffen. DEB sammelte weitgehend in Canada, USA, dem nordamerikanischen Mexico und in Borneo. Seit 1966 is er als Wissenschaftler in der Forschung an der Canadian National Collection of Insects, Arachnids, and Nematodes (CNCI, Ottawa) tätig. Er besuchte zum Studium des Typenmaterials für dieses Projekt und verwandte Forschung die folgenden Museen: CAS

(San Francisco), FMNH (Chicago), MCZ (Cambridge), USNM (Washington), Wood Collection in Nordamerika; BMNH (London), MNHN (Paris), NHMW (Wien) in Europa. Kurzfristige Ausleihen von anderen Museen und aus privaten Quellen dienten der Untersuchung weiterer Ersttypen. Ein Bestimmungs-Service, ähnlich dem oben beschriebenen, wurde seit 1966 angeboten.

Um dem Benutzer den Umgang mit Fehlern zu erleichtern, die im Katalog enthalten sein mögen, is es wichtig zu verstehen, in welcher Prozedur die Aufstellung erfolgte. Die Grundinformation über jedes Taxon im Katalog wurde auf zwei verschiedene Blätter verteilt: (1) Gattungs-Gruppen-Blätter und (2) Blätter der Artengruppen-Kategorie. Auf diesen Blättern wurde auf der einen Seite der Name, Autor(en), Angaben über Type, Aufbewahrungsort, ursprüngliche Gattung, spätere Gattung, Quelle der Original beschreibung, gültiger Name des Taxons, Notizen, geographische Verbreitung und Wirtspflanzen aufgeführt. Auf der Rückseite des Blättes wurden mit Handschrift unter jeder der acht, in der Einleitung des Teils 1 erwähnten Kategorien (Wood & Bright 1987:3-16) die Zitate eingetragen. SLW war für die Durchsicht der Literatur von 1758-1959 verantwortlich; er und seine Mitarbeiter arbeiteten im M. L. Bean Life Science Museum, Brigham Young University, Provo, Utah, USA. DEB war für die Literaturdurchsicht von 1960-1989 verantwortlich; er und seine Mitarbeiter waren an der Canadian National Collection of Insects, Arachnids, and Nematodes, Canada Department of Agriculture, Ottawa, Ontario, Canada, tätig.

Bei der Durchsicht der uns zugänglichen Literatur (Wood & Bright 1987, Quellenangaben ohne Stern-Markierung) wählte jeder von uns (SLW und DEB) Namen aus, die im Index erfasst werden sollten, und schrieb Käfernamen, Autor, Publikationsjahr (einschliesslich des zugeordneten Buchstaben) und Seitenzahlen auf Papierschnitzel. Diese Daten wurden von technischen Mitarbeitern auf die Rückseite der oben erwähnten Datenblätter im entsprechenden Gegenstandsbereich übertragen. Viele der Literaturangaben, die noch in dem Band von 1987 mit einem Stern (*) versehen waren, wurden inzwischen gefunden und deren Daten im Index aufgenommen.

Der Erste Autor übertrug: (Item A) die grundsätzlichen taxonomischen Daten und die Verbreitung von den Datenblättern in einen IBM/PS Model 60-Komputer, der mit anderen Museums-Komputern verbunden war, um die Kapazitä zu erhöhen. Jedes nominate Taxon erhielt dann eine Kodexnummer bestehend aus (a) drei Digits für die Identifizierung des Gattungsnamen, (b) drei Digits für den gültigen Artenamen und (c) zwei Digits für die Identifizierung der Unterart oder einer synonymen Bezeichnung. Ein Word-Prozessor-Spezialist fütterte dann mithilfe einer Komputernummer (Item B) alle Zitate eines Taxons in die entsprechende Gegenstandskategorie der Literatur von 1758-1959. Dasselbe Verfahren wurde in Ottawa für das Einbringen aller Zitate von 1960-1989 in einen ähnlichen Komputer (Item C) angewendet. Kopien der Disketten wurden darauf von Ottawa nach Provo gesandt. Der Word-Prozessor Spezialist kombinierte Item B und C, alphabetisierte und redigierte die Zitate. Er übertrug dann die kombinierten B und C Informationen auf Item A um einen Entwurf des vollen Textes des Katalogs ausdrucken zu lassen. Gelegentlich war die Eingabe der richtigen Kodenummer fehlerhaft. Wir hoffen aber, dass wir all diese Fehler gefunden und korrigiert haben. Der Leser sei jodoch darauf hingewiessen, dass vielleicht nicht alle Fehler gefunden wurden.

Daraufhin sah der Erstautor seine taxonomische Kartei durch, die seine Eintragungen von der Originalliteratur mit den Eintragungen ähnlicher Karteien zusammenfasste, die das Smithsonian Institut ihm als Mikrofilm zur Verfügung stellte und 50 Jahre unabhängige Forschungsarbeit in Washington repräsentiert. Die Eintragungen auf dem ersten Ausdruck wurden durchgesehen und durch die Kartei-Eintragungen ergänzt; auf diese Weise wurde der Inhalt des Entwurfs erweitert und verifiziert. Harte Kopien des korrigierten Manuskripts wurden dann jedem Autor zu eingehenden Durchsicht gegeben und Stück für Stück mit dem Originaltext der Datenblätter verglichen. Nach Eintragung dieser Korrekturen erfolgte der endgültige Ausdruck.

Bei der Bearbeitung der Originalartikel wurden Namen oftmals nur auf einem Blatt zitiert, obgleich der Name des Taxons mehrmals in dem Artikel erwähnt wurde. Wir bemerken auch, dass in der erganzenden Kartei (a) nur die erste Seite des Artikels oder (b) der gesamte Artikel (z.B. p. 1-40), der das Taxon betrifft, genannt wird, wenn in Wirklichkeit der Name

nur einmal auf Seite 34 erwähnt ist. Obgleich dies irreführend sein mag, es gab uns die Möglichkeit definitive Hinweise auf Arbeiten zu geben, die wir nicht einsehen konnten (solche Artikel, die in der Bibliograpie mit einem [*] Stern versehen sind).

Die Zuordnung der Artikel zu acht Sachgebieten war zwar eine gute Idee doch nicht so praktisch wie man denken möchte. Viele Publikationen waren einwandfrei einem oder mehreren Sachgebieten zuzuordnen, andere jedoch nicht. Manchmal konnten wir uns über die Zuordnung nicht einigen und bemerkten, dass wir selbst einen gegebenen Artikel an einem Tage so am anderen Tage einem anderen Sachgebiet zuordneten. Bei der Suche nach einer sehr speziellen information sollte man deshalb alle acht Sachgebiete berücksichtigen.

Wir wissen, dass Katalogisieren ein fortdauernder Vorgang ist, zu dem viele beitragen. Die Artikel, die wir gefunden und verarbeitet haben, repräsentieren insgesamt nur jene Literaturstellen, die durch Schlüsselworte auffielen. Es gibt eine grosse Menge Literatur in den Archiven der Ökologie, Forstwirtschaft, Systematik usw., die sehr nützlich wäre doch noch nicht von Katalogen erfasst wurde. Vielleicht stimuliert dieser Katalog Andere zusätzliche informationen aus verborgenen Quellen beizusteuern.

VERFAHREN

Die in diesem Katalog aufgeführten Arten erscheinen unter zwei Familien: Scolytidae und Platypodidae. Soweit uns bekannt, wurden alle Arten, die diesen Familien von 1758 bis 1991 zugeordnet wurden, mit ihren Synonyma aufgenommen. Innerhalb der Familien wurde die Unterfamilie, der Tribus und die Gattung phylogenetisch angeordnet wie bei Wood (1986a) für die Scolytidae. Da es keine neuere Klassifikation für Platypodiden gibt, wurde für diese Familie eine vorläufige Aufstellung vorgenommen, die sich auf Strohmeyer (1914b, 1914c), Schedl (1939p) und vorläufige Konzepte von SLW stützt. Die unter Familie, Unterfamilie und Tribus gemachten Literaturhinweise sollen nicht vollständig sein sondern auf solche Arbeiten hinweisen, die für die Entwicklung einer Klassifizierung wichtig sind. Die Literaturhinweise zu jeder Art sind so wollständig wie es uns möglich war. Wie erwähnt ist das Enddatum für alle Sachgebiete 1989 mit Ausnahme der taxonomischen und geographischen Informationen.

Die Arten innerhalb jeder Gattung, die als gültig anzusehen sind, werden in alphabetischer Reihenfolge mit Autor(en) fettgedruckt aufgeführt. Der Autorenname folgt in gewöhnlicher Schrift nach: (a) Jahr und Site der ersten gültigen Einführung in die Nomenklatur. (Dieses Datum entspricht dem in Teil 1 der Bibliographie dieses Katalogs [Wood & Bright 1987] ohne Berücksichtigung anderer Überlegungen, obgleich dies in einiger Fällen technisch inkorrekt ist; die meisten Widersprüche sind vermerkt.) Wenn eine Art ursprünglich einen anderen Gattungsnamen trug als heute, wird der alte Gattungsname in Klammern nach der Seite und vor dem Punkt (.) genannt. (b) Dem Punkt folgt ein Hinweis auf die Art des Primärtyps, auf dem die Beschreibung des Taxons basiert (Holotyp, Lectotyp, Neotyp, Syntyp) und das Geschlect soweit bekannt. Die Typeninformation endet mit einem Semikolon (;). (c) Dem Semikolon folgt der Fundort wie in der Originalveroffentlichung angegeben. Widersprüche zwischen publizierten Typenfundort und dem auf dem Etikett angegebenen sind vermerkt. Mehrere Autoren, besonderes Schedl, führen alle Orte auf, von denen sowohl Primär- wie Sekundärtypen kamen; in diesem Fall haben wir alle Fundorte aufgeführt. Die Fundortinformation endet mit einem Semikolon (;). (d) Dem Semikolon folgt die Angabe über die Deponierung der Typen wien sie in der Originalbeschreibung veröffentlicht wurde. Weicht der angegebene Aufbewahrungsort von dem heutigen ab, so wird der Wechsel vermerkt. So befinden sich z.B. heute mehrere hundert der Eggers Typen, die dem Smithsonian Institut gehören, im NHMW, Wien (s. die Bermerkungen unter "Schedl und die Borkenkäferforschung"). Die Namen der meisten Deponierungsorte sind auf die Anfangsbuchstaben beschränkt; dieser Bezeichnung folgt der Ortsname (oder für Madagascar der Name der Insel). Die vollständigen Namen der Deponierungsorte sind am Ende der Einleitung aufgeführt. Die vollen Namen der gelegentlich zitierten Deponierungsorte sind ausgeschrieben. Private Sammlungen sind mit dem Namen des Eigentümers bezeichnet, gefolgt vom Ortsnamen soweit bekannt. (e) Wurden Lectotypen ausgeworfen, folgen Name, Jahr und Seite

dieser Lectotypendesignierung einem Komma (,) nach der Angabe von Sammlung und Ortsnamen.

Unter jedem gültigen Artnamen mag eingetragen sein: (a) Abbildungen: Auf Abbildungen wird nur hingewiesen, wenn sie in geeigneter Güte vorliegen. Abbildungen geringer Qualität und Mehrfachzitate wurden vermieden. (b) Die geographiche Verbreitung wird alphabetisch innerhalb eines Kontinents mit Schrägstrichen (/) zwischen den Kontenenten angegeben. Landesteile sind durch ein Komma (,) getrennt. Einige Abweichungen von den üblichen geographischen Bezeichnungen sind: (1) die Bahamas und Trinidad werden als Antillen behandelt, nicht als Teile der angrenzenden Kontinente; (2) Sachalin (Russland), die japanischen Inseln, Taiwan und Hong Kong wurden als Teil Asiens behandelt; (3) die Andamanen und Nikobaren als Teil Indiens; (4) Malaya bezeichnet nur die kontinentale Halbinsel und schliesst Singapore ein, es ist nicht synonym mit Malaysia; (5) um Platz für das häufig zitierte malayische Archipel zu behalten, wurde die ungenaue Bezeichnung "Indonesien" benutzt. Es schliesst fast ganz Indonesien ohne New Guinea und das insulare Malaysien ein; und (6) afrikanische Inseln wurden getrennt aufgeführt aber mit den afrikanischen Ländern zusammengefasst, während Madagaskar als separate Landmasse behandelt wird. (c) Wirtspflanzen werden alphabetisch mit dem wissenschaftlichen Namen angegeben, den die Autoren in ihren Artikeln benutzen. In den meisten Fällen haben wir davon abgesehen die Nomenklatur zu ändern oder orthographische Fehler zu korrigieren, es sei, wir waren mit dem Namen völlig vertraut. (d) Mit Nummern versehene Bemerkungen gehören drei Kategorien an: Kategorie (1), die Information betrifft die Nomenklatur; Kategorie (2), die Bemerkungen betreffen Synonyma; und Kategorie (3), die Bemerkungen enthalten wichtige Mitteilungen der Autoren dieses Katalogs für den Leser und zitieren Wiederbeschreibungen, nomina nuda und andere wichtige Informationen.

Unterarten sind geographische Rassen, die eigene Populationen bilden sich aber mit anderen Unterarten vermischen können. Da Borken- und Ambrosiakäfer als subcortikale Parasiten in der Wirtspflanze sehr begrenztem Umweltstress ausgesetzt sind, treten geographische Rassen in diesen Familien seltener auf. Unterarten werden hier nur bestätigt, wenn fundierte Untersuchungen die Autoren von der tatsächlichen Existenz einer geographischen Rasse überzeugen. Fast alle der Schedl'schen Unterarten und jene der meisten anderen Autoren vor 1960 sind entweder Aberrationen ohne Nomenklaturstatus oder "cryptic (or sibling)" Arten, also gute Arten, denen offensichtliche diagnostische Merkmale fehlen. Die Namen der anerkannten Unterarten und ihrer Autoren sind fett gedruckt und unter dem Namen der Art eingesetzt, su der sie gehören.

Synonyma sind unter dem gültigen Namen genannt, zu dem sie gehören; sie sind nach ihrer chronologischen Priorität kursiv wiedergegeben. Die Angaben über ihre Typen sind entsprechend dem gültigen Artennamen aufgelistet, unter dem sie vereint wurden. Wir haben das Originalzitat und andere wichtegen Hinweise hinzugefügt, welche die Synonymie etablieren.

Nomina nuda sind im Index und in den Kategory (3) Bemerkungen unter dem gültigen Namen vermerkt. Die Nomina nuda unbekannter Artenzuordnung wurden aus diesem Katalog herausgelassen.

Unter "References" befinden sich die Literaturhinweise unter jedem Taxon. Diese sind unter acht Sachgebieten angeordnet wie in Wood & Bright (1987:16) beschrieben. Die Anordnung dieser Zitate ist alphabetisch nach Autorennamen. Autorennamen werden wie in Wood & Bright (1987) unter Weglassung diakritischer Zeichen oder orthographischer Anpassung buchstabiert mit Ausname des Umlauts (Dobner =Doebner).

Acht Gattungen, von denen fünf nur als Fossil bekannt sind, werden in der Kategorie Incerta Sedis genannt. Die Typen von zwei lebenden Gattungen kamen von Afrika und gingen verloren. Ihre Plazierung bedarf weiterer informationen. Die achte Gattung wurde so kurzlich beschrieben, dass wir keine Zeit hatten die Typen zu lokalisieren.

Danksagungen

Dieser Teil des Katalogs ist ein Index der Arbeit Anderer. Wir anerkennen und schätzen die Anstrengungen Tausender von Autoren, die Beiträge zur Kenntnis der Scolytiden und Platypodiden geleistet haben. Wir fühlen uns tief für die Hilfe verpflichtet, die wir von Hunderten von Bibliothekaren erfahren haben; sie bemühten sich uns Fotokopien der

benötigten Arbeiten zu besorgen. Wir danken auch vielen Kuratoren von Sammlungen, die uns bei der Prüfung des Typenmaterials in ihren Museen halfen oder solches ausliehen. Dies hat uns geholfen zahlreiche taxonomische Probleme zu lösen.

Äusserst dankbar sind wir einer motivierten Mitarbeiterschaft, die viele oder alle der sieben Jahre dieses Projektes durchhielten, für ihre Hilfe bei dieser monotonen und langweiligen Aufgabe. Die Mitarbeiter an der Brigham Young Universität waren Rita Farias Espinel (1 Jahr), Nadja Kummer (1 Jahr), Imelda Lom (1 Jahr), Pilar Pizzaro Sweany (3 Jahre), der bei Literaturauszügen half; Carla Jolayne Rice (2 Jahre) bediente den Komputer; Dr. C. Selby Herrin (7 Jahre) bewaltigte die gesampt Programmierung, Beratung, Wartung und Management. Die Mitarbeiter in Ottawa waren Jennifer Read (4 Jahre) die bei der Herstellung der Bibliographie half; Robert E. Skidmore (2 Jahre) war allgemeiner Projektassistent; Derrik Bell (1 Jahr) als Komputer-Spezialist; Larry Spears (2 Jahre) als Programmierer und Berater.

Die Arbeiten an der Brigham Young Universität wurde durch Drittmittel finanziert. Forschungsmittel bewilligten das U.S. Department of Agriculture, Competitive Research Grants Program grant number 87-CRCR-1-2582, die National Science Foundation, Biological Research Resources Program award number 8711632. Die Arbeiten in Ottawa wurden vom Canada Department of Agriculture finanziert. (Translation—J. P. Vité).

INTRODUCCIÓN

Las páginas que siguen contienen el primer intento serio de relacionar y catalogar la fauna mundial de Scolytidae desde Hagedorn (1910d) y de Platypodidae desde Strohmeyer (1914b, 1914c). También se incluye un suplemento a la bibliografía que constituyó la 1ª Parte de este catálogo, que pone al día las referencias bibliográficas hasta el año 1989 inclusive. Las citas de artículos taxonómicos y biogeográficos incluyen hasta 1991.

Entre los temas de especial interés, o en las que nos hemos visto particularmente implicados, podemos mencionar: (a) La cantidad de información biológica conocida resultó sorprendente. Se consideraba que al menos un 20% de todas las especies nominadas habrían sido citadas solamente una vez aparte de la descripción original, y que otro 20% habrían sido citadas menos de 5 veces. Una revisión superficial sugiere que las especies citadas sólo una vez representan menos del 5% del total, y que aquellas citadas menos de 5 veces sólo representan un porcentaje ligeramente superior a otro 5%. (b) Los niveles de transporte de especies a través del comercio, estableciéndose poblaciones reproductoras en áreas extradistribucionales del planeta, deberia ser un tema preocupante a nivel mundial. Después de un siglo en que las especies que llegaban a los Estados Unidos superaban escasamente una por década, entre 1985 y 1989 se establecieron al menos seis especies, cuatro especies más fueron registradas en 1990, y tres más en 1991. El impacto económico de estas especies introducidas ya se está percibiendo y se incrementará. El hecho de que tres de esas trece especies se reproduzcan por la via bisexual normal sugiere que existen lagunas significativas en los procedimientos de inspección de plantas en los puertos de entrada. Ello debería ser un tema de gran importancia en los campos agrícola y forestal. Se precisan urgentamente controles más profundo y más rigurosos, diseñados para detectar especies introducidas, especialmente en la vecindad de los puertos de entrada más importantes. Los patrones de dispersión de este tipo, a través del comercio, tienen una implicación mundial y conciernen a todos los paises, sin excepción. (c) Un punto estrechamente relacionado con el anterior es la necesidad de un adiestramiento en mayor profundidad, y más oportunidades de investigación, para los taxónomos de insectos que se hallan en periodo de formación. Cualquier taxónomo joven y serio, especialista en Scolytidae y Platypodidae, ya sea en la Universidad o en un servicio profesional en cualquier parte del mundo, resulta prácticamente ignorado. Pero la identificación de estos insectos a menudo es particularmente difícil, y llegar a alcanzar una competencia profesional requiere de 10 a 20 años de experiencia en el tema. Los aficionados y los especialistas pobremente adiestrados, con frecuencia cometen errores serios de criterio, como lo muestran el número y la repartición de los sinonimos recogidos en este volumen. Con frecuencia esos errores son tan lamentables que llegan a asustar a cualquiera que estudie sus consecuencias. Este problema requiere una atención inmediata

en todos aquellos groupos que, como los Scolytidae, tienen enormes implicaciones económicas. Todas las especies de Scolytidae son parasitos endogenos de plantas y, en consecuencia, constituyen vectores potenciales de enfermedades de plantas o bien enemigos directos de la planta hospedante.

Schedl y los Scolytidae

Este catálogo no estaría completo, o incluso sería incomprensible, sin un breve comentario acerca de los métodos y de las actividades de Karl Eduard Schedl (1898-1979). Durante más de 50 años, Schedl ejerció una gran influencia en el estudio de los Scolytidae y de los Platypodidae. Se interesó en los Scolytidae a la edad de 17 años, durante la Primera Guerra Mundial, cuando observó los vestigios del ataque de una especie de *Ips* en un pino caído sobre la trinchera donde se hallaba refugiado. Después de la guerra, recibió una formación en ecología forestal y poco después pasó a interesarse en la sistemática. Publicó 342 artículos sobre taxonomía de escolítidos, y fue el autor de más de 2.000 especies nominadas. Aunque ocasionalmente utilizó la palabra "evolucion" y otros términos adoptados de la Sistemática Moderna, su concepto de especie fue enteramente morfológico, en el sentido asumido antes de 1940. Su utilización de la designación de subespecies no era en el sentido de una raza geográfica, sino en el de cualquier minúscula desviación morfologica de su "tipo" (en general no eran más que aberraciones). Le explicó a SLW que no aceptaba el Codigo Internacional de Nomenclatura Zoológica como vinculante para él; por esta razón, formulo su propio código de nomenclatura, el cual no fue nunca escrito o debatido con otros colegas.

Schedl tenia la costumbre de poner nombres inéditos a aquellos ejemplares que no podía identificar. Esos nombres a menudo permanecían en su colección durantes decadas y fueron citados repetidamente en la literatura, tanto por el propio Schedl como por otros autores, antes de que fueran descritos formalmente o bien asociados con especies previamente nominadas. Otra costumbre que llevaba a confusión, tanto para él como para sus colegas, era que reconocía un "holotipo macho" y un "holotipo hembra" para cada especie. En numerosas ocasiones esta costumbre ha conducido a descripciones dobles de especies (y al establecimiento de sinónimos y homónimos). Afortunadamente, publicó una lista del material típico de Platypodidae de su colección (Schedl 1978a) y, más tarde, un volumen similar dedicado a los Scolytidae (Schedl 1979c). Estos catálogos sólo son parcialmente completos, pero dan una relación de "holotipos," lectotipos y neotipos de su colección. Muchas de esas designaciones no son válidas y, en consecuencia, deberian usarse con cautela. Se mencionan "holotipos" en muchas de las especies que había nominado previamento a partir de series sintípicas, muchos de los lectotipos se relacionan sin indicar el orígen geográfico o los datos en los que se basa la elección de los mismos, y, en nuestra opinión, ninguno de los neotipos cumple los requisitos del Código.

Para una mejor comprensión de este catálogo es necesario explicar el sistema por el cual Schedl consiguio una porción significativa de la colección de Eggers. Hacia el final de la Segunda Guerra Mundial, Hans Eggers, reconocido como la autoridad mundial en Scolytidae en esta época, contactó con W. H. Anderson, conservador de Scolytidae y Platypodidae en el Smithsonian Institution, y ofreció vender su colección a esa institución por 4.000 dolares. El Smithsonian Institution aceptó la oferta y pagó por adelantado a Eggers la cantidad total estipulada. Eggers empezó a embalar y a remitir la colección a Washington, pero murió habiendo enviado menos de un tercio de la misma. A causa de la ocupación militar de Alemania y de las dificultades para viajar por Europa a finales de la guerra, un entomólogo europeo se encargó de completar el embalaje y envió de la colección. Ese entomólogo fue Karl E. Schedl (Anderson, W. H. & Anderson 1971:1-2). Solamente una porción de la parte de la colección puesta bajo la tutela de Schedl llegó a Washington, mientras que una parte sustancial del material, tanto típico como no típico, apareció en la colección de Schedl.

Schedl (1979c:2) publicó el relato de como llegó a sus manos esta porción significativa de la colección de Eggers. Este mismo relato, aunque mucho más detallado, se lo contó a SLW en Lienz, en Septiembre de 1965. Sin embargo, por muy sincera que haya sido esta explicación, se contradice con lo relatado por la Sra. Butovitsch (esposa de Viktor Butovitsch e hija de Hans y de Elsa Eggers) en ocasiones diferentes a L. G. E. Kalshoven y F. G. Browne y referido a SLW. Según este relato, Schedl simplemente

tomó lo que precisaba para su propio uso. En relación con este asunto, los hechos documentados son: (1) Cuando su marido murió, Elsa Eggers se hallaba en estado senil, hasta el punto de que "incluso no sabiá cual era su propio nombre." Después de la muerte de Hans, su hija era su representante legal y gestionaba todos sus asuntos personales, ninguno de los cuales tenía relación con la colección o de Dr. Schedl. (2) En 1952, y de nuevo en 1961, W. H. Anderson y S. L. Wood examinaron y repasaron conjunctamente una gran cantidad (más de 20) de hojas de préstamo del Smithsonian Institution (USNM), mecanografiadas a simple espacio y firmadas por Karl E. Schedl reconociendo haber recibido cientos de tipos primarios y secundarios sacados de la Colección Eggers mientras Schedl preparaba la misma para su envío. Dichas hojas de préstamo fueron firmadas por Schedl a instancias del agregado militar americano que supervisó el ambalaje y la preparación de la colección. Aparentamente, Schedl ignoraba que esas hojas fueron enviadas directamente al Smithsonian Institution. Segun W. H. Anderson y D. M. Anderson (su sucesor), estos materiales no fueron nunca devueltos a Washington, lo cual confirma las observaciones propias hechas independientemente. En nuestro catálogo, se cita repetidamente las diferentes explicaciones relacionadas con la problematica sobre el deposito de los materiales. A lo largo del catálogo también se citan problemas similares de préstamos no devueltos y pertenecientes al Forest Research Institute, Dehra Dun, y al CSIRO, Canberra.

La explicación que sigue es para que el lector comprenda como una docena de tipos de Eichhoff llegaron a la colección de Schedl. Según contó Schedl a SLW en Septiembre de 1965, cerca del final de la Segunda Guerra Mundial, Schedl era comandante del ejercito aleman y tenía ciertas responsabilidades en la gestión de bosques de los países ocupados por Alemania. Schedl se hallaba en Polonia cuando cayó el frente del Este y, antes de efectuar la retirada, pasó por el Stettin Museum, donde se conservaba la coleccion Dohrn (la cual incluía una docena o más de tipos de Eichhoff). Cuando Schedl llegó, el museo había sido abandonado por casi todo el personal excepto por el conservador de Coleoptera, el cual estaba a punto de marcharse. Según Schedl, cuando le pregunto al conservador por los tipos de Eichhoff, éste le dijo que los tomara y seguidamente huyó para salvarse. A excepción de estos ejemplares, los materiales del Stettin Museum fueron destruidos por la guerra.

Material y Métodos

Como ya se mencionó en la Introducción de la 1ª Parte de este catálogo (Wood & Bright 1987), los inicios del mismo tuvieron lugar en 1946, cuando SLW empezó a confeccionar fichas taxonómicas y de autores, en conjunción con una búsqueda sistemática de la literatura sobre Scolytidae y Platypodidae a nivel mundial. Esas fichas se hallan suplementadas por una colección de más de 100.000 ejemplares de Scolytidae y 3.000 de Platypodidae montados, y por una gran colección de material duplicado conservado en etanol. Gran parte de este material, incluyendo más de 2.000 especies biológicas, fue recolectado por él mismo en Norteamérica, Sudamérica, Asia, Australia, Europa, Japón, Nueva Guinea y Sri Lanka. Además, entre 1960 y 1990, SLW intercambió ejemplares identificados con diversos museos importantes y con Browne, Krivolutskaya, Kurenzov, Murayama, Schedl, etc. Ha proporcionado un servicio de identificación a colegas profesionales, recibiendo a cambio una parte de los ejemplares recibidos para estudio desde 1945 hasta la actualidad. Con el fin de confirmar la identificación de las especies, ha seleccionado ejemplares comparados directamente con tipos primarios en el AMNH (New York), CAS (San Francisco), MCZ (Cambridge), USNM (Washington), CNCI (Ottawa) en Norteamérica; BMNH (London), IZL (Leningrad/St. Petersburg), IZM (Moscow), MZU (Helsinki), MNHN (Paris), MHNW (Wien), Colección Schedl (Lienz) en Europa; FRI (Dehra Dun), Colección Nobuchi (Ibaraki) en Asia. Numerosos tipos primarios y secundarios han sido examinados a través de préstamos de corta duración facilitados por otros museos y de fuentes privadas. Ha examinado ejemplares confirmados de unos dos tercios de las especies nominadas que se relacionan más adelante.

DEB se familiarizó con los métodos de catalogación durante 1961-1963, mientras trabajaba con SLW como postgraduado. Este interés se incremento durante la década de 1970, y en 1981 ambos autores unieron sus esfuerzos para recopilar este catálogo. DEB ha realizado recolecciones exhaustivas en Canadá,

Estados Unidos y Mexico, por lo que se refiere a Norteamérica, asi como en Borneo. Ha sido investigador científico en la Canadian National Collection of Insects, Arachnids and Nematodes (CNCI, Ottawa) desde 1966. Con el fin de estudiar material típico para este proyecto e investigaciones relacionadas, ha visitado los siguientes museos: CAS (San Francisco), FMNH (Chicago), MCZ (Cambridge), USNM (Washington) y Colección Wood, por lo que se refiere a Norteamérica; BMNH (London), MNHN (Paris) y NHMW (Wien), en Europa. Numerosos tipos primarios adicionales han sido examinados a través de préstamos de corta duración de otros museos y de fuentes privadas. Desde 1966 ha proporcionado un servicio de identificación similar al descrito anteriormente.

En aras de una mayor comprensión y para que el usuario pueda enfrentarse de manera efectiva con los errores que puedan hallarse en este catálogo, es esencial que se entiendan los métodos seguidos en su recopilación. La información básica de cada taxón que se incluye en el catálogo ha sido organizada en hojas de datos de dos tipos: (1) hojas de datos a nivel de genero, y (2) hojas de datos a nivel de especie. En esas hojas, el nombre del autor(es), datos del tipo, lugar de depósito, género original, género subsiguiente, fuente de la descripción original, nombre válido del taxón, notas, distribución geográfica, y hospedantes, se anotaban en una cara de la hoja. Al reverso de la misma se escribian a mano las citas en cada una de las ocho categorias mencionadas en la 1ª Parte de este catálogo (Wood & Bright 1987:3-16). SLW se responsabilizó de revisar la literatura publicada entre 1758 y 1959; junto con su equipo, en el M. L. Bean Life Science Museum, Brigham Young University, Provo, Utah, Estados Unidos. DEB se responsabilizó de revisar la literatura desde 1960 a 1989; junto con su equipo, en la Canadian Collection of Insects, Arachnids and Nematodes, Canada Department of Agriculture, Ottawa, Ontario, Canada.

Durante la revisión de la literatura a que tuvimos acceso (Wood & Bright 1987, referencias no marcadas con un [*] asterisco), cada uno de nosotros (SLW y DEB) extrajo los nombres para ser incluídos en los índices y anotó sobre papel los nombres de los coleópteros, autor, año de publicación (incluyendo letras suplementarias), y número de páginas. Después, el equipo técnico copiaba estos datos en el reverso de las hojas antes mencionadas, sobre las áreas temáticas apropiadas de las mismas. Muchas de las referencias marcadas con un asterisco (*) en el volumen de 1987 had sido localizadas posteriormente y los datos se han incluido en los indices.

El primer autor registró: (Conjunto A) la infomación básica taxonómica y distribución de los coleópteros en las hojas de datos, en una ordenadora IBM/PS2 Modelo 60, conectado por una red informática con las ordenadoras del museo para ampliar su capacidad. A cada taxón nominado se le asignó un número de código basado en (a) tres dígitos para identificar el nombre genérico, (b) tres dígitos para identificar el nombre válido especifico, y (c) dos dígitos para identificar las subespecies o sinónimos. Después, un especialista en proceso de textos entró mediante notación de ordenadora (Conjunto B) todas las citas de cada taxón en las áreas temáticas apropiadas, recogidas en la literatura publicada entra 1758 y 1959. El mismo procedimiento fue seguido en Ottawa, entrando todas las citas entre 1960 y 1989 en una ordenadora similar (Conjunto C). Desde Ottawa se enviaron a Provo copias de los disquettes con los datos conjuntamente con una copia sobre papel del contenido de los mismos. El especialista en proceso de textos combinó entonces los Conjuntos B y C, editó en orden alfabético las citas y, a continuación, transfirió la combinación de los Conjuntos B y C al Conjunto A, obteniendo un primer borrador del texto completo del catálogo. En escasas ocasiones se había producido un error al introducir el número de código apropiado. Confiamos en haber detectado y corregido todos esos errores, pero el usuario debe estar advertido de que quizá nos ha pasado desapercibido alguno de ellos.

En esta fase, el primer autor revisó sus fichas taxonómicas, compuestas de datos de la literatura original y suplementadas con datos de fichas similares microfilmadas por el Smithsonian Institution por encargo suyo, y que representaba 50 años de investigación llevada a cabo independientemente en Washington. A continuación, las entradas del primer borrador de la base de datos fueron revisadas y se suplementaron con las entradas de las fichas, con lo cual se ampliaron y se verificaron. Seguidamente se prepararon copias sobre papel del manuscrito corregido para cada autor, para hacer una revisión detallada, contrastándolo punto por punto con las hojas de datos orig-

inales. Después de entrar las correcciones pertinentes se preparó el borrador final.

En la revisión de los articulos originales, los nombres a menudo eran citados en una sola página, incluso aunque el nombre del taxón en cuestión apareciera muchas veces en el artículo. Conviene también mencionar que al usar las fichas suplementarias, los recopiladores que prepararon esas fichas podían citar (a) sólo la primera página del artículo, o (b) el artículo completo (por ejemplo, páginas 1-40) correspondiente a un taxon en cuestión, mientras que, en realidad, el nombre se citaba una sola vez en la página 34. Incluso aunque esto pueda resultar equivoco, nos permitió citar referencias concretas de numerosos artículos que no pudimos examinar (aquellos marcados con un [*] asterisco en la bibliografía).

La asignación de los artículos a una de las ocho areas tematicas, aunque es una buena idea, no resultó tan práctica como suponíamos. Muchos de los artículos publicados eran claramente asignables a una o más áreas temáticas definidas, pero otros no. A veces discrepábamos sobre la asignación apropiada e incluso acontecía que un día asignábamos un artículo dado a una área temática y al día siguiente los asignábamos a otra distinta. Se deberían considerar las ocho áreas cuando se esté revisando la literatura de un tema específico.

Somos plenamente concientes de que la tarea de catalogación es un proceso contínuo al que muchos contribuyen. La mayoría de los artículos que hemos localizado y revisado representan sólo parte de la literatura en que las palabras clave atrajeron la atención de los revisores. Existe una gran cantidad de literatura diluida en los archivos de ecología, temas forestales, sistemática, etc., que debe ser muy útil, pero que no ha captado la atención de los catologadores. Este catálogo tal vez estimulará a otros a contribuir con información adicional procedente de esas fuentes.

Procedimiento

Las especies contenidas en esta catálogo se reparten en dos familias: Scolytidae y Platypodidae. Se incluyen todas las especies asignadas a estas familias desde 1758 hasta 1991 y los sinónimos que conocemos de las mismas. Dentro de cada familia las subfamilias, tribus y géneros se han ordenado filogenéticamente, a la manera presentada por Wood (1986a) para los Scolytidae. Dado que no hay una clasificatión moderna disponible de Platypididae, esta familia se ha organizado siguiendo una ordenacion filogenética tentativa basada en una combinación de las de Strohmeyer (1914b, 1914c), Schedl (1939p) y en conceptos tentativos de SLW. Las referencias que se relacionan en los niveles de familia, subfamilia y tribu no pretenden ser exhaustivas, sino incluir sólo aquellos trabajos que se han considerado relevantes para el desarrollo de la clasificación del grupo. Las citas de referencias que se incluyen en cada especie son tan completas como lo han permitido nuestras fuentes. Como ya hemos indicado, se ha llegado hasta el año 1989 en el caso de todas las áreas temáticas, excepto para los datos taxonómicos y geográficos.

Las especies de cada género que aquí se consideran como válidas, se relacionan en negrita y en orden alfabético, con el autor correspondiente. El nombre del autor va seguido, en letra redonda, de (a) el año y la página en que el nombre fue validado nomenclatorialmente por vez primera (esta fecha es la que se corresponde con la bibliografía de la 1ª Parte de este catálogo: Wood & Bright 1987) independientemente de otras consideraciones y, en algunos casos, se sabe que es técnicamente incorrecta; se mencionan numerosas discrepancias de este tipo. Cuando la especie fue originalmente nominada bajo un género distinto del que ahora se le asigna, este género original se menciona entra paréntesis, seguido del número de página y de un punto [.]. (b) El punto va seguido de una indicación de la clase de tipo primario sobre el que se basa el taxón (holotipo, lectotipo, neotipo, sintipo) y del sexo del mismo, si se conoce. La información concerniente al tipo se cierra con un punto y coma [;]. (c) Al punto y coma sigue la localidad típica, tal como viene dada en la publicación original. Cuando se ha observado una discrepancia entre la localidad tipica publicada y la que aparece en las etiquetas del tipo, se menciona dicho cambio. Algunos autores, particularmente Schedl, relacionaron la totalidad de las localidades de donde provenían todos los tipos, primarios y secundarios; en estos casos se han relacionado todas las localidades. La información de la localidad tipo se cierra con un punto y coma [;]. (d) Al punto y coma sigue la designación del depósito del tipo, tal y como aparece en la descripción original. Cuando el lugar de depósito designado es diferente del lugar donde

se halla actualmente el tipo, se menciona el cambio. Por ejemplo, varios cientos de tipos de Eggers que pertenecen en el Smithsonian Institution se hallan actualmente en el MHNW, Wien (veanse los comentarios del apartado "Schedl y los Scolytidae"). Los nombres de numerosas instituciónes de depósito de tipos se abrevian con las iniciales de las mismas, seguidas del nombre de la ciudad (o, como en el caso de Madagascar, por el nombre de una isla). Los nombres completos se relacionan al final de esta Introducción. Cuando se trata de instituciones escasamente citadas, se menciona el nombre completo. Las colecciones personales se citan con el nombre del propietario, seguido del nombre de la ciudad, si se conoce. (e) Cuando se han designado lectotipos, se indica el nombre, el año y la página de designación del lectotipo en cuestión, sigue una coma y el nombre de la institución y la ciudad.

Debajo de cada nombre específico válido, aparece siguidamente la siguiente información: (a) Figuras: sólo se mencionan citas de figuras cuando son de buena calidad. Se han evitado las citas a figuras de calidad mediocre, asi como una excesiva proliferación de citas. (b) La distribución geográfica se da en orden alfabético por países de un continente dado, uno a continuación de otro pero separados por barras [/]. Las subdivisiones dentro de un país se han separado con comas. Incluimos en esta sección unos cuantos casos que se apartan de las designaciones geográficas ordinarias: (1) las islas Bahamas y la isla Trinidad son tradados como islas pertenecientes a las Antillas, no como parte de sus continentes adyacentes; (2) la isla Sakhalin (USSR), el archipiélago de Japón, Taiwan y Hong Kong son tradadas como formando parte de Asia; (3) las islas de Andaman y Nicobar se tratan como parte de la India; (4) Malaya indica solamente la península continental e incluye Singapur, no es sinónima de Malasia; (5) con el fín de ahorrar espacio en el caso del archipiélago Malayo, que se cita con mucha frecuencia, se ha empleado la imprecisa designación "Indonesia" que incluye la mayor parte de Indonesia y Malasia insular, pero excluye Nueva Guinea; y (6) las islas africanas se relacionan separadamente pero incorporadas en la lista de paises africanos; se exceptúa Madagascar por ser tratada como una masa continental aparte. En muchos casos no hemos actualizado la nomenclatura o no hemos corregido los errores de los nombres de los hospedantes, a menos que se tratara de nombres muy familiares. (d) Las notas se dividen en tres categorías que se designan con números: las notas de la categoría (1) incluyen información especialmente relacionada con la nomenclatura; las notas de la categoría (2) se refieren a la sinonímia; y las notas de la categoría (3) contienen mensajes de los autores del presente catálogo para el lector que son de especial significación, y citan redescripciones, *nominae nudae* y otras informaciones de importancia.

Las subespecies son razas geográficas que forman poblaciones diferenciadas y que pueden itegrarse con otras poblaciones. Dado que los escolítidos y los platypódidos son esencialmente parásitos endogenos de plantas, y que mientras se hallan en el interior del hospedante estan sujetos a presiones ambientales muy limitadas, las razas geográficas son poco frecuentes en esas familias. En este catálogo sólo se reconocen subespecies cuando se han hecho estudios lo suficientemente profundos como para convencer a los autores de que existen razas geográficas reconocibles. Casi todas las subespecies de Schedl, y las de muchos otros autores anteriores a 1960, son, o bien abrerraciones sin categoría nomenclatorial formal, o bien especies crípticas (o gemelas), es decir, buenas especies que no tienen caracteres diagnósticos obvios. Los nombres de las subespecies reconocidas aquí, con los autores correspondientes, se presentan en negrita y seguidos debajo del nombre de la especie a la que pertenecen. Cuando se reconocen subespecies, los nombres de los sinónimos se relacionan debajo del nombre en negrita de la subespecie a que pertenecen.

Los sinónimos se sitúan debajo, y seguido, del nombre válido al cual pertenecen; se indican en cursivas y en orden cronológico. Los datos de sus tipos se relacionan como en el caso de los nombres de especies válidas, además se añade la cita original y otras referencias relevantes que conciernen al establecimiento de la sinonímia.

Los *nominae nudae* que han sido citados como sinónimos se relacionan en el índice y en las notas de la categoría (3), bajo los nombres válidos. En el presente trabajo los *nominae nudae* de los que no se conoce su afinidad con alguna especie han sido omitidos.

Bajo el subtitulo de "References" debajo de cada taxón nominado, se presentan las citas bibliográficas. Dichas citas se organizan en las ocho áreas temáticas descritas por Wood & Bright (1987:16), y estan ordenadas alfabéti-

camente por el nombre del autor(es). Los nombres de los autores se deletrean como en Wood & Bright (1987) y excluyen signos diacríticos o cambios de letras usadas para compensar dichos signos (excepto Dobner = Doebner).

Ocho géneros, cinco de los cuales sólo se conocen como fosiles, se relacionan en la categoría *Incertae Sedis*. Los tipos de dos géneros actuales que se incluyen en esta categoría procedían de Africa y se han perdido. Su ubicación deberá aguardar información adicional. El octavo género had sido nominado tan recientemente que no hemos tenido tiempo de localizar los tipos.

AGRADECIMIENTOS

Esta parte del catálogo es un índice del trabajo hecho por otros. Reconocemos y apreciamos los esfuerzos de cientos de autores que han contribuido a la ampliación de nuestros conocimientos sobre Scolytidae y Platypodidae. Apreciamos sinceramente la ayuda recibida de cientos de bibliotecarios que han puesto especial empeño en proporcionarnos fotocopias de los artículos que necesitabamos consultar. También agradecemos a los numerosos conservadores de colecciones el que nos ayudaran cuando examinábamos material típico de sus museos, y a aquellos que gestionaron los préstamos que nos permitieron resolver numerosos problemas taxonómicos.

Nuestro reconocimiento más especial va dedicado al equipo de colaboradores que se han mantenido durante todos, o casi todos, los siete años que ha precisado este proyecto, por su ayuda en la labor más monótona y tediosa. El equipo en Brigham Young University se compuso de Rita Farías Espinel (1 año), Nadja Kummer (1 año), Imelda Lom (1 año), Pilar Pizarro Sweany (3 años), quienes ayudaron en la extracción de citas, Carla Jolayne Rice (2 años) que manejó la ordenadora, y el Dr. C. Selby Herrin (7 años), que hizo toda la programación de ordenadores y relizó tareas consultivas, de mantenimiento y de gestión. El equipo de Ottawa se compuso de Jennifer Read (4 años) que ayudó en la preparación de la bibliografía, Robert E. Skidmore (2 años), ayudante del proyecto general, Derrik Bell (1 año) especialista en la entrada de datos a la ordenadora, y Larry Spears (2 años) que fue el programador de la ordenadora y asesor.

El trabajo en Brigham Young University fue financiado con importantes subvenciones para la investigación del U.S. Department of Agriculture, Competitive Research Grants Program, programa número 87-CRCR-1-2582, y de la National Science Foundation, Biological Research Resources Program, subvención número 8711632. El trabajo en Ottawa fue financiado por el Canada Depatment of Agriculture.

Nuestro más sincero agradecimiento a los colegas que prepararon las traducciones de esta Introducción, para mayor beneficio de los usuarios. (Translation—X. Belles, Barcelona, Spain).

MUSEUMS CITED

LIST OF MUSEUMS CITED BY ACRONYMS

AMNH	New York	American Museum of Natural History
BMNH	London	British Museum of Natural History
BPBM	Honolulu	B. P. Bishop Museum
CAS	San Francisco	California Academy of Science
CNCI	Ottawa	Canadian National Collection of Insects, Arachnids, and Nematodes
CSIRO	Canberra	Commonwealth Scientific and Industrial Research Organization
DZSA	Sao Paulo	Departamento de Zoologia, Secretaria da Agricultura
FMNH	Chicago	Field Museum of Natural History
FRI	Dehra Dun	Forest Research Institute
IPKE	Eberswalde	Institut fur Pflanzenschutz-forschung Kleinmachnow (Strohmeyer Collection)
IRSM	Madagascar	Institut de Researche Scientifique de Madagascar, Tananarive
IRSNB	Brussels	Institut Royal des Sciences Naturelles de Belgique
ISBN	Novosibirsk	Institute of Soil Biology, Academy of Science, Far Eastern Branch
IZAS	Beijing	Institute of Zoology, Academia Sinica
IZL	Leningrad	Institute of Zoology at Leningrad (St. Petersberg)
IZM	Moscow	Institute of Zoology at Moscow
IZW	Warsaw	Institute of Zoology at Warszawa
LACM	Los Angeles	Los Angeles County Museum
MACN	Buenos Aires	Museo Argentino de Ciencias Naturalis
MCG	Genova	Museo Civico Genova
MCZ	Cambridge	Museum of Comparative Zoology
MHNB	Bukarest	Museum d'Histoire Naturelle Bukarest
MHNG	Geneve	Museum d'Histoire Naturelle
MNB	Berlin	Museum fur Naturkunde der Humboldt University at Berlin
MNHN	Paris	Museum National d'Histoire Naturelle
MRCB	Tervuren	Musee Royal du Congo Belgique

MZU	Helsinki	Museum Zoologicum Universitatis
MZUSP	Sao Paulo	Museum de Zoologie, Universidade de Sao Paulo
NHMB	Budapest	Naturhistorisches Museum Budapest
NHMBS	Basel	Naturhistorischen Museum
NHML	Luxemburg	Museum d'Histoire Naturelle du Gran-Duche de Luxemburg
NHMW	Wien	Naturhistorisches Museum Wien
NHR	Stockholm	Naturhistorika Riksmusset
NICP	Pretoria	National Insect Collection, Plant Protection Research Institute
NMHN	Santiago	Museo Nacional de Historia Natural
NMV	Melbourne	National Museum of Victoria
Nobuchi	Ibaraki	Nobuchi Collection, now at Insect Museum, National Institute of Agro-Environmental Sciences, Yatabe, Tukuba, Ibaraki 305, Japan
OSUC	Columbus	Ohio State University Collection, USA
PPST	Tokyo	Plant Protection Station
RCFS	Stockholm	Royal College of Forestry
RNH	Leiden	Rijsmuseum van Natuurlijke Historie
SAM	Adelaide	South Australian Museum
SMUK	Lawrence	Snow Museum at University of Kansas
SMTD	Dresden	Staatliches Museum fur Tierkunde
Strohmeyer	Eberswalde	Institut fur Pflanzenschutzforschung Kleinmachnow
TMP	Pretoria	Transvaal Museum
USNM	Washington	United States National Museum
UZI	Upsalla	Universitets Zoologiska Institut
UZMC	Copenhagen	Universitets Zoologisk Museum
Wood	Washington	The S. L. Wood Collection will be transferred to USNM, Washington about 1994; until then it is in his office
ZIDSU	Lund	Zoological Institute, Department of Systematics, Lund University
ZIFH	Eberswalde	Zoologische Institut der Forsliche Hochschule
ZMA	Amsterdam	Zoological Museum
ZSSM	Munchen	Zoologischen Staatssammlung des Bayerischen Staates

List of Museums Cited by City

Adelaide	SAM	South Australian Museum
Amsterdam	ZMA	Zoological Museum, Amsterdam
Basel	NHMBS	Naturhistorischen Museum
Beijing	IZAS	Institute of Zoology, Academia Sinica
Berlin	MNB	Museum fur Naturkunde der Humboldt University at Berlin
Brussels	IRSNB	Institut Royal des Sciences Naturelles de Belgique
Buenos Aires	MACN	Museo Argentino de Ciencias Naturalis
Bukarest	MHNB	Museum d'Histoire Naturelle Bukarest
Budapest	NHMB	Naturhistorisches Museum Budapest
Cambridge	MCZ	Museum of Comparative Zoology
Canberra	CSIRO	Commonwealth Scientific and Industrial Research Organization
Chicago	FMNH	Field Museum of Natural History
Columbus	OSUC	Ohio State University Collection, USA
Copenhagen	UZMC	Universitets Zoologiske Museum
Dehra Dun	FRI	Forest Research Institute
Dresden	SMTD	Staatliches Museum fur Tierkunde in Dresden
Eberswalde	IPKE	Institut fur Pflanzenschutzforschung Kleinmachnow (Strohmeyer Collection)
Eberswalde	ZIFH	Zoological Institut der Forsliche Hochschule
Geneve	MHNG	Museum d'Histoire Naturelle
Genova	MCG	Museo Civico Genova
Helsinki	MZU	Museum Zoologicum Universitatus, Helsinki
Honolulu	BPBM	B. P. Bishop Museum
Ibaraki	Nobuchi	Nobuchi Collection
Lawrence	SMUK	Snow Museum at University of Kansas
Leiden	RNH	Rijsmuseum can Natuurlijke Historie, Leiden
Leningrad	IZL	Institute of Zoology at Leningrad
London	BMNH	British Museum of Natural History
Los Angeles	LACM	Los Angeles County Museum
Lund	ZIDSU	Zoological Institute, Department of Systematics, Lund University
Luxemburg	NHML	Museum d'Histoire Naturelle du Gran-Duche de Luxemburg
Madagascar	IRSM	Institut de Researche Scientifique de Madagascar
Melbourne	NMV	National Museum of Victoria
Moscow	IZM	Institute of Zoology at Moscow
Munchen	ZSSM	Zoologischen Staatssammlung des Bayerischen Staates
New York	AMNH	American Museum of Natural History
Novosibirsk	ISBN	Institute of Soil Biology, Academy of Science, Far Eastern Branch
Ottawa	CNCI	Canadian National Collection of Insects, Arachnids, and Nematodes
Paris	MNHN	Museum National d'Histoire Naturelle
Pretoria	NICP	National Insect Collection, Plant Protection Research Institute
Pretoria	TMP	Transvaal Museum
San Francisco	CAS	California Academy of Science
Santiago	NMHN	Museo Nacional de Historia Natural
Sao Paulo	DZSA	Departamento de Zoologia, Secretaria da Agricultura
Sao Paulo	MZUSP	Museum de Zoologie, Universidade Sao Paulo
Stockholm	NHR	Naturhistorika Riksmusset
Stockholm	RCFS	Royal College of Forestry, Stockholm

Tervuren	MRCB	Musee Royal du Congo Belgique
Tokyo	PPST	Plant Protection Station
Upsalla	UZI	Universitets Zoologiska Institut
Warsaw	IZW	Institute of Zoology, Warszawa
Washington	USNM	United States National Museum
Wien	NHMW	Naturhistorisches Museum Wien

KEY TO SUBJECT AREAS

(**ay**) = Anatomy, physiology, genetics, etc.

(**bv**) = Behavior, including all aspects of the study of pheromones.

(**cn**) = Surveys, manipulation of populations, economic damage, risk-ratings, epidemics, insecticides, chemical or cultural control, economic impact, quarantine; excluded is biological control.

(**ec**) = Predators, parasites, biological control, effect of weather and climate, disease agents or vectors, competition, interaction with fungi, interspecific competition.

(**hb**) = Habits, life cycle, host selection, population dynamics.

(**ds**) = Geographical distribution, host distribution, faunal lists, all references to fossils.

(**tx**) = Nomenclature, classification, keys for identification, taxonomic descriptions when those descriptions are a major feature, phylogeny.

(**ms**) = Reviews, articles about scientists, laboratory or field techniques, marginal or non-science articles; chemical synthesis of pheromones is identified as (bv ms).

Catalog of Scolytidae

Family Scolytidae Latreille

Notes: The following is a list of significant contributions to knowledge of higher classification in this family. This list is not intended to include all published references on this topic.

Dermestes (part)
References: Bechstein 1805; DeGeer 1775; Linnaeus 1758, 1767a.

Bostrichus (part)
References: Fabricius 1775, 1787, 1792.

Bostrichidae (division Xylophaga)
References: Altum 1874, 1881; Eichhoff 1864b: 17–48, 1868d; Erichson 1836: 45; Herbst 1793: 111; Latreille 1807: 275; Paykull 1800: 153; Redtenbacher 1845: 36; Westwood 1836.

Scolytus
References: Geoffroy 1762.

Scolytidarii
References: Latreille 1807: 273.

Scolytidae (also includes the French term Scolytides)
References: Balachowsky 1949a: 1–320; Barbey 1901: 1–124; Bargmann 1906; Bau 1888: 382; Beal & Massey 1945: 57; Bedel 1888b: 385; Beeson 1941(1961: 279–310); Blackwelder 1947: 777–788; Blandford 1894d: 53–141, 1895a: 315–328, 1895b: 81–96, 1896e: 97–144, 1897a: 145–184, 1898b: 224, 1904: 225–281, 1905: 281–298; Blatchley & Leng 1916: 576; Bright 1972: 1–108, 1978: 1–241; Brimblecombe 1953: 1–39; Broun 1880: 537; Browne 1961c: 1–255; Brues & Melander 1932: 444, 446; Chamberlin 1939, 1958; Chapuis 1869: 1–61, 1873: 209–269; Costa Lima 1956: 272; Eichhoff 1868, 1877, 1878b, 1881a; Endrodi 1959: 1–96; Everts 1899: 2–6; Felt 1903; Ferrari 1867a; Fitch 1956a: 38–39; Ganglbauer 1903; Gemminger & Harold 1872: 669; Handlirsch 1825: 690; Hansen, V. 1939, 1955, 1956; Hess 1898, 1900; Hopkins 1914, 1915b, 1915c: 165, 224–225; Judeich & Nitsche 1883, 1895; Kalshoven 1958b, 1960c, 1963; Kaston 1936; Keen 1929, 1938, 1952; Kholodkovskii 1888: 181, 1889; Kirby 1837: 191–197; Krivolutskaya 1956, 1958; Kurenzov 1941a; Kurenzov & Kononov 1961; Lacordaire 1866: 149, 356; Latreille 1807: 273; LeConte 1876: 341; LeConte & Horn 1883: 512; Lekander 1962a, 1968; Leng 1920: 337; Lindemann 1875c: 151, 1877c; Lovendal 1889b: 5–6, 1898; Lucas 1920: 57; Mamaeva 1975: 187; Murayama 1954b, 1963b; Niisima 1910a; Nobuchi 1985c: 1–32; Perkins 1900; Perris 1853, 1863; Pfeffer 1955a: 1–324; Ratzeburg 1837, 1839; Reitter 1894a, 1913a, 1916; Schedl 1959n, 1961k, 1962k, 1977b; Schimitschek 1937c; Stark, V. N. 1952; Stebbing 1914; Swaine 1909, 1918a: 1–143; Wood, S. L. 1961a, 1978a, 1982b, 1986; Wood, S. L. & Bright 1987.

Ipidae
References: Blackman 1922: 1–130, 18 pls.; Cecconi 1906; Csiki 1906: 77; Eggers 1904, 1932b, 1943c; Escherich 1897: 229–239; Fuchs 1904: 253; Ganglbauer 1902: 311; Hagedorn 1910a, 1910b; Kleine 1908, 1939; Nusslin 1882, 1911, 1912; Reitter 1906: 707; Swaine 1909; Verhoff 1896.

Tomicidae (Based on the erroneous concept that *Tomicus* = *Ips*)
References: Bau 1888: 385; Boas 1923; Eichhoff 1878b: 210; Henschel 1861, 1876a; Lacordaire 1866: 357, 372; LeConte 1876: 345; Lindemann 1876: 151; Thomson 1859: 145, 1865: 345; Wollaston 1854: 288.

Eccoptogasteridae
References: Tredl 1907: 4.

Subfamily Hylesininae Erichson

Hylesinus
References: Fabricius 1801.

Hylesinen
References: Erichson 1836: 46.

Hylesini
References: Barbey 1901: 17; Karaman 1972: 55; LeConte 1876: 345; Redtenbacher 1849a: familie 37.

Hylesinina
References: Thomson 1859: 146, 1865: 347.

Hylesinides
References: Blandford 1896e: 142; Ferrari 1867a: 3; Lacordaire 1866: 357; Nusslin 1912.

Hylesinidae (used as a subfamily name)
References: Bau 1888: 379; Chapuis 1869: 15, 1873: 223; Lindemann 1876: 151.

Hylesininae [subfamily]
References: Bright 1978: 40; Hagedorn 1909: 162, 1910a: 24, 35, 1910d: 7; Hopkins 1915c: 225; Leng 1920: 337–338; Lovendal 1889b: 6; Nusslin 1911: 428; Tredl 1907: 8; Wood, S. L. 1972a: 397–399, 1978a: 107, 1982b: 56, 1986: 29.

Hylesinini [tribe]
References: Bedel 1888b: 388; Eichhoff 1880: 33–34, 1883a: 99; Handlirsch 1925: 691; Jacquelin du Val & Fairmaire 1868: 109; Nunberg 1954: 14; Reitter 1894: 39, 1913a: 27, 31; Spessivtsev 1913a: 28; Wood, S. L. 1978a: 111, 1982b: 108, 1986: 36.

Hylesinae
References: Lucas 1820: 32.

Tribe Hylastini LeConte

Hylastes
References: LeConte 1876: 387; LeConte & Horn 1883: 521.

Hylastides
References: Barbey 1901: 18; Nusslin 1912: 273.

Hylastini
References: Lucas 1920: 32; Murayama 1963b: 47; Nobuchi 1985c: 4; Reitter 1913a: 27, 49; Wood, S. L. 1978a: 110, 1982b: 79, 1986: 34.

Hylurgopina
References: Balachowsky 1949a: 122; Nunberg 1954: 15.

Genus *Scierus* LeConte

SCIERUS LECONTE 1876: 390. Type-species: *Scierus annectens* LeConte, monobasic.
Keys: Bright 1976d: 41, Wood 1982b: 79.
References: (**ay**) Nobuchi 1969a: 51. (**hb**) Bright & Stark 1973: 21; Wood, S. L. 1982b: 79, 1986a: 35. (**ds**) Bright 1976d: 41; Bright & Stark 1973: 21; Hagedorn 1910d: 7; Leng 1920: 338; Wood, S. L. 1982b: 79–82, 1986a: 35. (**tx**) Arnett 1960: 1034, 1041, 1968: 1034, 1041; Bedel 1888b: 389, 409; Blatchley & Leng 1916: 665; Bright 1976d: 41; Bright & Stark 1973: 21; Bruck 1936a: 42; Chamberlin 1939: 190, 1958: 97–98; Hagedorn 1910a: 43, 1910d: 7; LeConte 1876: 390; LeConte & Horn 1883: 525; Lucas 1920: 584; Stewart, K. W. 1965: 924–927; Swaine 1909: 144, 1918a: 44, 1924f: 287; Wood, S. L. 1961a: 42, 1982b: 79–82, 1986a: 35.

***annectens* LeConte** 1876: 390. Lectotype, sex?; Anticosta Island, Quebec, Canada; MCZ, Cambridge, designated by Wood 1982b: 81.
Figures: Bright 1976d: 200, 205 (adult), Stewart 1965: 926 (galleries).
Distribution: North America (Alaska/ Alberta, British Columbia, New Brunswick, Newfoundland, Northwest Territories, Ontario, Prince Edward Island, Quebec in Canada/ Arizona, California, Colorado, Idaho, Maine, Montana, New Hampshire, New Mexico, Oregon, Utah, Washington in USA).
Hosts: *Picea engelmannii, Picea glauca, P.* sp., rarely *Pinus contorta, Pseudotsuga menziesii*.
References: (**ay**) Stewart, K. W. 1965. (**cn**) Beckwith 1972; Keen 1938: 128; Lindgren 1980a: 70; Massey & Wygant 1954: 21; Ruppel 1967: 87; Schuder 1969: 76; Smith, G. J. & Melvin 1974b. (**ec**) Furniss, R. L. & Carolin 1977: 374; Keen 1938: 128; Knight 1961b; Massey & Wygant 1954: 21; Stewart, K. W. 1965; Swaine 1924d: 9; Werner & Holsten 1984. (**hb**) Bright 1976d: 41; Bright & Stark 1973: 21; Chamberlin 1939: 190, 1958: 97; Furniss, R. L. & Carolin 1977: 374; Keen 1938: 128; Knight 1961b; Lindgren 1980a: 70; Massey & Wygant 1954: 21; Stewart, K. W. 1965; Swaine 1909: 44, 1918a: 73, 1924: 927; Watson 1928: 620; Wood, S. L. 1982b: 80. (**ds**) Ashworth 1977: Beaulne 1956; Beckwith 1972a; Bedel 1888b: 388; Blatchley & Leng 1916: 665; Bright 1964: 170, 1971a: 125, 1976d: 41; Bright & Stark 1973: 21; Chamberlin 1925, 1939: 190, 1958: 97; Dodge 1938: 31; Elias 1982b, 1983, 1985: 39; Furniss, R. L. & Carolin 1977: 374; Gautreau 1974: 6; Gautreau & Melvin 1974: 14; Hagedorn 1910d: 8; Henshaw 1882: 269, 1885: 149; Hopping 1922; Keen 1929a: 22, 1938: 128; Kleine 1914b: 409, 1934a: 127; Kusch 1967; Leng 1920: 338; Miller, R. F., Morgan, & Hicock 1985: 501; Morgan, A. V. & Morgan 1980: 1110; Patterson & Hatch 1945: 150; Ruppel 1967: 87; Schuder 1969: 76; Schwert et al. 1985; Smith, G. J. & Melvin 1974b; Stewart, K. W. 1965; Still, Tidsbury, & Melvin 1974a; Swaine 1909: 144; Swaine et al. 1924: 1–27; Werner & Holsten 1984; Wood, S. L. 1951a: 127, 1969c: 116, 1972a: 399, 1982b: 80. (**tx**) Beckwith 1972a; Benoit 1985: 235; Blatchley & Leng 1916: 665; Bright 1976d: 41, 200, 205; Bruck 1936a: Chamberlin 1939: 190, 1958: 97; Dodge 1938: Hagedorn 1910a: 45; Hopkins 1901b: 33, 1914: 129; Keen 1929a: 22; Kusch 1967; LeConte 1876: 390; Pardy 1974, 1977, 1983; Swaine 1909: 144, 1918a: 73, 1924f: 287; Titus, Meikle, & Harrison 1985: 115; Wood, S. L. 1972a: 399, 1982b: 80.

***pubescens* Swaine** 1924f: 287. Holotype ♀; Jasper Park, Alberta, Canada; CNCI, Ottawa.
Distribution: North America (Alaska/ Alberta, British Columbia, Yukon in Canada/ Colorado, Idaho, Montana in USA).
Hosts: *Abies lasiocarpa, Picea engelmannii*.
References: (**bv**) Furniss, M. M., Baker, & Hostetler 1976: 1300. (**cn**) Lindgren 1980a: 70; Ruppel 1967: 87. (**ec**) Werner & Holsten 1984. (**hb**) Bright 1976d: 43; Chamberlin 1939: 190, 1958: 98; Furniss, R. L. & Carolin 1977: 374; Lindgren 1980a: 70; Ruppel 1967: 87. (**ds**) Bright 1976d: 43; Chamberlin 1925, 1939: 190, 1958: 97; Elias 1985: 39; Furniss, R. L. & Carolin 1977: 374; Gast et al. 1989: 381; Kleine 1934a: 127; Leng & Mutchler 1927: 51; Ruppel 1967: 87; Werner & Holsten 1984; Wood, S. L. 1972a: 399, 1982b: 81. (**tx**) Bruck 1936a; Bright 1967b: 679, 1976b: 43; Chamberlin 1939: 190, 1958: 98; Furniss, R. L. & Carolin 1977: 374; de Ruette 1970: 113; Swaine 1924f: 287; Wood, S. L. 1972a: 399, 1982b: 81.

Genus *Hylurgops* LeConte

HYLURGOPS LECONTE 1876: 389. Type-species: *Hylastes pinifex* Fitch, subsequent designation by Hopkins 1914: 123.
Hylesinites Germar 1813: 15. Type-species: *Hylesinites electrinus* Germar, monobasic. Synonymy: Schedl 1947a: 23.

References: (**tx**) Germar 1813: 15; Schedl 1947a: 23.

Hylastites Hagedorn 1906: 117. Type-species: *Hylastites schellwieni* Hagedorn, monobasic. Synonymy: Schedl 1947a: 24.
References: (**tx**) Hagedorn 1906: 117; Schedl 1947a: 24.

Myelophilites Hagedorn 1906: 118. Type-species: *Myelophilites dubius* Hagedorn, monobasic. Synonymy: Schedl 1947a: 22.
References: (**tx**) Hagedorn 1906: 118; Schedl 1947a: 22.

Hylescierites Schedl 1947a: 29. Type-species: *Hylescierities granulatus* Schedl, monobasic. Synonymy: Wood 1986c: 266.
References: (**tx**) Schedl 1947a: 29; Wood, S. L. 1986c: 266.

Keys: Murayama 1963b: 56 for Japan; Pfeffer 1944b: 104 for Europe; Tsai & Huang 1964b: 237 for China; Blandford 1896e: 144, Bright 1976d: 43, Wood 1982b: 82 for North America.

References: (**ay**) Nobuchi 1969a: 49; Schonherr 1970b: 309. (**bv**) Chararas, Deaveau, & Kogane-Charles 1960: 921–923; Schonherr 1970b: 309; Wood, S. L. 1892b: 82. (**ec**) Nickle 1976b. (**hb**) Bright & Stark 1973: 22; Escherich 1923b: 480; Postner 1974: 396; Saalas 1914: 72, 78; Wood, S. L. 1982b: 79–82, 1986a: 35. (**ds**) Bright & Stark 1973: 22; Chamberlin 1939: 204–208, 1958: 118–120; Hagedorn 1910d: 7; Leng 1920: 339; Patterson 1945: 151; Scheerpeltz & Winkler 1930: 256; Swaine 1918a: 80–81; Wood, S. L. 1982b: 79–82, 1986a: 35. (**tx**) Arnett 1960: 1034, 1041, 1968: 1034, 1041; Balachowsky 1949a: 122; Beal & Massey 1945: 44, 92; Bedel 1888b: 389, 408; Blandford 1896e: 144; Blatchley & Leng 1916: 666–667; Bright 1976d: 43–47; Bright & Stark 1973: 22; Bruck 1936a: 43; Chamberlin 1939: 204–208, 1958: 118–120; Choo 1983: 54; Choo, Woo, & Nobuchi 1988b; Dodge 1938: 17; Escherich 1923b: 480; Fitch 1858; Hagedorn 1910d: 7; Hopkins 1914: 123; Karaman 1971: 1–178; Kostin 1973: 1–247; LeConte 1876: 389; LeConte & Horn 1883: 525; Leng 1920: 339; Lucas 1920: 343; Munro 1926: 1–27; Murayama 1963b: 55–62; Nunberg 1954: 21; Pfeffer 1944b: 97, 104, 1955: 118–120, 1989a: 36; Postner 1974: 396; Reitter 1913a: 49–51; Saalas 1914: 72, 78; Schedl 1947a: 22, 1952a: 448; Scheerpeltz & Winkler 1930: 256; Schmitschek 1937: 44–48; Spessivtsev 1922: 460–461, 1931: 24, 84; Stark 1952: 196–207; Stresemann et al. 1989: 353; Swaine 1909: 113, 1913: 87–92, 1918a: 80–81; Tsai & Huang 1964b: 235–241; Wood, S. L. 1961: 42, 1982b: 82–93, 1986a: 35; Yin & Huang 1981: 556.

***batnensis* (Brisout)** 1883: 146 (*Hylastes*). Syntypes, sex?; Algeria; not given.
Figures: Grune 1979:48.
Distribution: Africa (Algeria/ Morocco), Europe (Hungary/ Italy/ Romania).
Hosts: *Cedrus atlantica*.
References: (**bv**) Grune 1979: 49. (**ec**) Peyerimhoff 1934: 52; Pfeffer 1960. (**ds**) Brisout de Barnville 1883: 146; Grune 1979: 49; Hagedorn 1910d: 8; Kleine 1912b: 162, 1914a: 16, 1934a: 126; Kocher 1953: 133; Peyerimhoff 1933b: 363, 1934: 52; Pfeffer 1947d: 128, 1960; Pittioni 1943: 176; Reitter 1894a: 60, 1916: 283; Schaufuss 1915: 12. (**tx**) Balachowsky 1949a: 130; Brisout de Barnville 1883: 146; Eggers 1914: 89–90; Endrodi 1973: 233; Grune 1979: 48, 49; Hagedorn 1910a: 45; Pfeffer 1944b: 100, 1955a: 107; Postner 1974: 396; Reitter 1894a: 60, 1913a: 51, 1916: 283; Schedl 1934f: 1636, 1968c, 1979c: 35.

gergeri Eggers 1911a: 119 (*Hylastes*). Holotype, sex?; Hungariae meridionalis loco Oravicza; Eggers Collection, in NHMW, Wien. Synonymy: Eggers 1933a: 97.
References: (**ec**) Pfeffer 1955b: 84. (**ds**) Endrodi 1958b; Kleine 1912b: 162, 1913a: 34; Luigioni 1929: 994; Nunberg 1954: 20; Pfeffer 1989a: 38; Schaufuss 1915: 1227. (**tx**) Eggers 1911a: 119, 1912: 49, 1914: 39–40, 1933a: 97, 1933f: 2; Endrodi 1957a: 307, 1957b: 412, 1973: 233; Luigioni 1929: 994; Nunberg 1954: 20; Pfeffer 1944b: 100, 1955a: 110; Reitter 1913a: 51; Schedl 1934f: 1636, 1979c: 103.

fallax Wichmann 1911a: 100. Syntypes?; Vallombrosa (bei Florence), Italy; not located; article not seen. Synonymy: Schedl 1934f: 1636, Pfeffer 1944b: 100.
References: (**tx**) Eggers 1912a: 49, 1914: 89–90; Endrodi 1957: 412; Pfeffer 1944b: 100; Reitter 1913a: 51; Schedl 1934f: 1636; Wichmann 1911a: 100.

***bonvouloiri* (Chapuis)** 1869: 22 (*Hylastes*). Syntypes, sex?; Algerie; IRSNB, Brussels.
Distribution: Africa (Algeria).
Hosts: *Cedrus atlantica*.
References: (**ec**) Pfeffer 1960. (**hb**) Peyerimhoff 1926: 385. (**ds**) Hagedorn 1910d: 8; Kleine 1912b: 166, 1914b: 166; Peyerimhoff 1926: 385, 1933b: 363; Pfeffer 1935: 159, 1947d: 128, 1960; Reitter 1894a: 63; Schedl 1971d: 426. (**tx**) Chapuis 1869: 22, 1873: 130; Gemminger & Harold 1872: 2669; Hagedorn 1910a: 45; Pfeffer 1944b: 102; Reitter 1894a: 62, 1913a: 50; Schedl 1934f: 1635.

° ***corpulentus* Schedl** 1947a: 27. Holotype, sex?; fossil in Baltic amber; Geologisch-Palaeontologische Inst. Albertus Univ., Konigsberg.
Figures: Schedl 1947a: 27–28 (adult).
Distribution: Europe (fossil in Baltic amber).
References: (**ds**) Spahr 1981. (**tx**) Schedl 1947a: 16, 27.

° ***dubius*** **(Hagedorn)** 1906: 118 (*Myelophilites*). Holotype, sex?; fossil in Baltic amber; Geologisch-Palaeontologische Inst. Albertus Univ., Konigsberg.
Figures: Schedl 1947a: 25 (adult).
Distribution: Europe (fossil in Baltic amber).
Notes: (1) Schedl 1947a: 24 (to *Hylurgops*). (3) Schedl 1947a: 24 (redescribed).
References: (**ds**) Hagedorn 1907a, 1907b, 1910d: 13; Keilbach 1982: 255; Kleine 1912a: 163, 1912b: 169; Krausse 1920: 169, 175; Spahr 1981. (**tx**) Hagedorn 1906: 118, 1907a, 1907b, 1910a: 56; Hopkins 1914: 125; Keler 1928: 25; Krausse 1920: 169, 175; Schedl 1947a: 15–16, 22, 24. (**ms**) Keilbach 1982: 255.

° ***electrinus*** **(Germar)** 1813: 15 (*Hylesinites*). Holotype, sex?; fossil in Baltic amber; not located.
Distribution: Europe (fossil in Baltic amber).
Notes: (3) Schedl 1947a: 23 (original description quoted).
References: (**ds**) Germar 1813; Giebel 1856: 148; Hagedorn 1907a, 1910d: 16; Handlirsche 1908; Keilbach 1982: 255; Kleine 1912a: 163, 1912b: 170; Schlechtendal 1888: 486; Scudder 1891: 540; Spahr 1981. (**tx**) Germar 1813: 15; Giebel 1856: 148; Hagedorn 1910a: 48; Hopkins 1914: 123; Keler 1927a: 22; Schlechtendal 1888: 486; Schedl 1947a: 23. (**ms**) Keilbach 1982: 255.

eusulcatus **Tsai & Huang** 1964b: 239, 241. Holotype ♂; Miyalo, Szechuan, China; IZAS, Beijing.
Distribution: Asia (Sichuan, Yunnan in China).
Hosts: *Abies delavayi*, *Picea asperata*.
References: (**tx**) Tsai & Huang 1964b: 239, 241.

glabratus **(Zetterstedt)** 1828: 343 (*Hylurgus*). Holotype, sex?; Lapponia (Sweden); not located.
Figures: Balachowsky 1949a: 123, Chararas 1962c: 402, Stark 1952: 196 (adult).
Distribution: Asia (Heilongjiang in China/ Japan/ Korea/ Taiwan/ Sakhalin Island, Siberia in E USSR), Europe (Austria/ Czechoslovakia/ Denmark/ Finland/ France/ Germany/ Greece/ Hungary/ Italy/ Norway/ Spain/ Sweden/ Switzerland/ W USSR).
Hosts: *Pinus cembra*, *P. montana*, *P. mugo*, *P. silvestris*, *P.* spp., rare *Abies alba*, *A.* spp., *Cedrus* sp., *Larix* spp., *Picea excelsa*, *P. jezoensis*, *P. koraiensis*, *P. obovata*.
References: (**ay**) Escherich 1923b: 429, 480, 568; Fuchs 1912a; Klimesch 1914: 215; Lekander 1959b: 31; Marcu 1933a: 36; Nunberg 1928a: 140; Sherb 1971; Schwerdtfeger 1929: 404. (**bv**) Adlung 1960: 430–435; Annila 1975: 8–9; Barr, B. A. 1969: 641; Butovitsch 1971; Grune 1979: 53; Nuorteva 1956c: 23; Tragardh 1930b: 106; Vasechko 1978a. (**cn**) Anonymous 1929c: 644; Dudich 1946; Eckstein 1926: 577; Eidmann 1965c, 1973; Escherich 1923b: 429, 480, 568; Esterberg 1959; Gabler 1955; Grandi 1951; Hess & Beck 1914: 259, 1927: 320; Inouye 1949a: 13, 104, 1949b, 1949c, 1955; Inouye & Yamaguchi 1955a: 235; Ishikura 1966; Joly 1976; Judeich & Nitsche 1895: 447, 523; Juutinen 1960: 22; Kholodkovskii 1912: 286; Kontkanen 1932: 60; Kozikowsky 1929: 255; Kurenzov 1935c: 188, 1950a: 15; Marcu 1926c: 62; Mokrzecki 1925c: 44; Muller 1912: 185; Nilssen 1978a; Nosek 1951: 105, 1952b: 100; Nusslin 1913: 205; Oda, Kato, & Nobuchi 1964; Pfeffer 1948a: 800, 1950c: 2; Pierce, W. D. 1917: 81; Rhumbler 1922: 279, 1927: 291; Saalas 1949: 341, 364; Sajevyc 1928: 329; Schimitschek 1935a: 202, 1937c: 48, 1938b: 114, 119, 1947g: 168, 1952a: 208, 1955b: 100, 1955c: 78, 1961a: 154; Schuster 1918: 102; Schwerdtfeger 1944a: 179, 1957a: 184; Sinreich 1961: 166; Smith, J. B. 1900: 365; Spaic 1956: 88; Strohmeyer 1950: 21; Tragardh & Butovitsch 1936: 578; Vasechko 1964; Wachtl 1901: 381; Weber, H. 1926: 577; Wichmann 1927b: 354; Wilke 1931: 583, 657–674. (**ec**) Adeli 1964: 397; Annila 1975: 11, 1977; Balazy & Michalski 1964b; Bovey 1970; Butovitsch 1971; Chararas 1957a, 1958b, 1959c, 1959e, 1959g, 1960a: 31; Eidmann 1965c; Felt 1906: 665; Galoux 1947c; Gyorfi 1941b; Heqvist 1963: 151; Inouye & Yamaguchi 1955a: 235; Inouye et al. 1955: 64; Jahn & Sinreich 1960b; Kangas 1946b: 23; Karpinski 1932a: 107; Kleine 1908c: 181, 1944: 69; Kosarievskaya & Mamajev 1962: 450–451; Kostin 1960: 104; Kurenzov 1964: 20; Nechleba 1928b: 126, 1928c: 111, 1929a: 26; Nestertschuk 1930: 163; Nishiguchi 1959: 271; Nosek 1951: 105, 1952b: 100; Nunberg 1930: 202; Nuorteva 1956a: 17, 1957b: 68, 1959d: 203, 1968a, 1970, 1971: 69–71; Nusslin 1927: 291; Palmen 1946: 194; Pfeffer 1932a: 13, 1943b: 180, 1950c: 2; Purrini 1977a, 1978a; Saalas 1917a: 18, 1928: 650, 1930: 119, 1949: 341, 346, 1951: 15; Schimitschek 1930a: 281, 329, 1931b: 487, 1935a: 202, 1936a: 559, 1952a: 208, 1953b: 532, 1955a: 67, 69, 1955c: 78, 1964e; Schuster 1918: 102; Schwerdtfeger 1929: 404, 1944a: 179, 1957a: 184; Seitner 1913a: 27; Sitowski 1930: 2; Szczepanski 1960a: 410; Thompson, W. R. 1943: 52; Wiackowski 1957a: 80; Wilke 1931: 583, 657–674. (**hb**) Adlung 1960: 430–435; Annila 1977; Anonymous 1929c: 644; Barbey 1901: 45; Budkov 1897; Byers 1984a; Chararas 1958a, 1959c: 113–129, 1959g: 215–233, 1960a: 35, 1982c: 402; Charvat 1950; Dombrowski 1887; Eckstein 1897, 1926: 577; Eichhoff 1881a: 36, 91, 1882a: 241; Escherich 1923b: 429, 480, 568; Felt 1906: 665; Fuchs 1907: 38; Gabler 1955; Gornostaev 1916: 310; Grandi 1951; Gyorfi 1957; Hennings 1908b, 1908d; Henschel 1882b, 1885b, 1895a: 135; Hess & Beck 1914: 259, 1927: 320; Inouye et al. 1955: 64; Joly 1976; Judeich & Nitsche 1895: 447, 523; Karpinski & Strawinski 1948: 154; Kholodkovskii 1912: 286; Knoche 1905: 364; Kostin 1960: 131; Krivolutskaya 1956: 829, 1960; Kurenzov 1935a: 20, 26, 1948b: 104,

1950d: 198; Lekander 1959b: 31; Lengerken 1939: 39, 1954: 76; Morstatt 1924: 12; Niisima 1908: 18; Nilssen 1984; Nunberg 1929c: 119, 1947c: 106; Nuorteva 1956c: 23, 1968a, 1970; Nusslin 1898: 277, 1904: 13, 1905a: 89, 1907: 613, 1913: 205, 1927: 291; Oiu & Hua 1958: 266; Pfeffer 1941c: 4; Postner 1974: 396; Rhumbler 1922: 279, 1927: 291; Rupertsberger 1880: 225; Saalas 1913a: 68, 78, 1949: 341, 364, 1951: 15; Schimitschek 1930a: 281, 329, 1955a: 67, 69; Schwerdtfeger 1929: 404, 1944a: 179, 1957a: 184, 1981: 190; Simmel 1919b: 108; Spessivtsev 1913a: 65, 1928a: 221; Stark 1926a: 332, 1952: 197; Stebbing 1909b: 14; Tragardh 1919: 237–248, 1930b: 106, 1930c: 478, 1939b: 157; Vasechko 1978a; Wachtl 1901: 381; Weber, H. 1926: 577; Wichmann 1927b: 354. (**ds**) Acloque 1896; Ammann & Knabl 1913, 1923; Balachowsky 1943a; Barthe 1896; Bau 1888; Bedel 1888b; Belousov 1916, 1917: 334; Bielz 1887; Bistrom & Vaisanen 1988: 42; Blandford 1894c; Blatchley & Leng 1916: 666; Borchert 1951; Budkov 1897; Butovitsch & Heqvist 1947; Chararas 1962c: 402; Charvat 1950; Cho 1957; Choo 1983: 55; Choo & Woo 1983, 1985: 164; Choo, Woo, & Park 1983: 175; Duftschmidt 1825: 99; Eggers 1904; Endrodi 1958b; Ericson & Sandin 1893; Ermisch 1953; Escherich 1923b: 429, 480, 568, 1932b; Esterberg 1928, 1959; Fleischer et al. 1923; Fuchs 1905a, 1907: 38, 1913; Gaubil 1849: 128; Gornostaev 1917: 308–315; Grill 1895: 307; Grouzelle 1905; Grune 1979: 53; Gyorfi 1941b; Hagedorn 1910d: 9; Hamilton 1894b: 407; Hansen 1939; Hellen 1947; Henschel 1895a: 135; Henshaw 1895: 44; Heyden 1881: 177, 1890: 132, 1893: 177; Heyden, Reitter, & Weise 1883: 181, 1891: 668, 1906: 710; Holdhaus & Deubel 1910: 145; Holzel 1946: 81; Horion 1951, 1954a: 108; Huhta et al. 1985: 406; Ihssen 1939: 336; Inouye 1949b; Ishikura 1966; Jamnicky 1960a; Janovsky & Tegshzhargal 1985: 406; Joly 1976; Judeich & Nitsche 1895: 447, 523; Karpinski 1932a: 107; Karpinski & Strawinski 1948: 154; Kestercanek 1881a: 12; Kiefer et al. 1942: 528; Klefbeck & Sjoberg 1960: 228; Kleine 1912a: 217, 267, 1912b: 166, 1913a: 34, 1914b: 248, 254, 1934a: 126; Ko 1969: 278; Kono & Tamanuki 1939: 88, 92; Kontkanen 1932: 60; Krivolutskaya 1956: 829, 1960, 1983; Kurenzov 1935a: 20, 26, 1935c: 188, 1936b: 351, 1938a: 64, 1951b: 15, 1964: 20; Kurir 1947c: 9; Langhoffer 1915c: 157; Leng 1918: 211; Liegel 1886: 43; Lindberg 1924: 192; Lindberg & Saris 1952: 58; Lomnicki 1886a: 240, 1913b: 148; Lucht 1987: 276; Luigioni 1929: 994; Lundberg 1974: 92; Marcu 1926c: 62; Michalski 1957c: 163; Munster 1928: 289; Murayama 1929b: 2, 1929d: 1, 1930a: 1, 1930b: 7, 1936a: 123, 1936b: 117, 1937b: 374, 1939: 137, 1942a: 54, 1948: 2, 1951c: 3, 1953a: 5; Negru 1966b: 399, 1968a: 454; Niisima 1908: 18; Nobuchi 1966b: 11, 1967: 19, 1985c: 4; Nunberg 1927a: 212, 1928b: 85, 1954: 22; Nuorteva 1956b: 168, 1971: 67; Nusslin 1898: 277; Orest 1926c: 61; Palm 1946: 120, 1948a: 90; Palmen 1946: 194; Pfeffer 1924b: 472, 1935: 157, 1947e: 1, 1950b: 74, 1989a: 37; Pierce, W. D. 1917: 81; Pittioni 1943: 176; Platonoff 1942: 63, 1943: 141; Pomerantzev 1907a: 177–192, 1907b: 426, 492; Poppius 1900: 107; Postner 1974: 396; Rapp 1934: 725; Redtenbacher 1874: 366; Reitter 1894a: 63, 1916: 282; Roubal 1941: 260; Saalas 1913a: 68, 78, 1917a: 18, 1930: 119, 1931: 70; Sahlberg 1900: 104; Sainte-Claire & Mequignon 1938: 444; Schaufuss 1915: 1225; Schaum 1859: 95, 1862: 100; Schedl 1971f: 147, 1980a: 9, 1981b: 51; Schilsky 1909: 188; Schimitschek 1938b: 114; Schreiner 1897: 369; Schwarz 1886: 56; Schwerdtfeger 1981: 190; Seidlitz 1872: 391; Smith, J. B. 1900: 365, 1910: 909; Stark 1926a: 332, 1926b: 101, 1926j: 124, 1931a: 21, 1931d: 543, 1952: 197; Stein 1868: 113; Stein & Weise 1877: 163; Strand 1946: 596; Swaine 1909: 113; Thomson 1865: 350, 1868: 215; Tragardh 1939b: 157; Tredl 1907: 9; Wegelius 1960: 106; Westhoff 1882: 236; Wichmann 1927a: 60; Wilke 1931: 583, 657–674; Wiren 1945: 43; Yanovskii 1977; Yanovskii & Dmitrienko 1983; Yanovskii & Tegshzhargal 1984; Zetterstedt 1828: 342, 1840: 192; Zinovjev 1955: 187. (**tx**) Acloque 1896; Anonymous 1891: 92; Balachowsky 1943a, 1949a: 123; Bedel 1888b: 390; Blandford 1894a: 58; Blatchley & Leng 1916: 666; Charvat 1950; Choo 1983: 55; Csiki 1909; Doebner 1860; Dombrowski 1887; Eggers 1911: 119–120, 1912c: 206, 1914: 40; Eichhoff 1881a: 36, 91, 1883a: 101, 122; Endrodi 1957b; Escherich 1923b: 429, 480, 568; Fauvel 1887, 1889; Fleischer 1927; Florov 1949: 69; Formanek 1907: 29; Fuchs 1912a, 1913; Gabler 1955; Gemminger & Harold 1872: 2669; Grune 1979: 52, 53; Hagedorn 1910a: 45; Henschel 1895a: 135; Heyden 1890: 132, 1893: 177; Hopkins 1915c: 211; Joly 1976; Judeich & Nitsche 1895: 447, 523; Karpinski & Strawinski 1948: 154; Koch 1928: 76, 1932: 111; Kono & Tamanuki 1939: 92; Krivolutskaya 1956: 829, 1958: 119; Kuhnt 1913: 1053; Kurenzov 1941a: 121, 1948b: 104; Lekander 1959b: 31; Letzner 1891: 372; Lucht 1987: 276; Luigioni 1929: 994; Murayama 1930: 11–12, 1936a: 123, 1937b: 374, 1939: 137–138, 1953a: 5, 1954b: 156; Negru 1966b: 399; Niisima 1910a: 8; Nobuchi 1966b: 11, 1966d: pl. 1; Nunberg 1928a: 140, 1929c: 119, 1947: 99–108, 1954: 22; Pfeffer 1932b: 14, 1941c: 4, 1944b: 102, 1947e: 1, 1955a: 119, 1989a: 37; Pfeil 1862: 436; Portevin 1935: 319; Postner 1974: 396; Quaschik 1953: 35; Redtenbacher 1874: 366; Reitter 1894a: 63, 1900a: 59, 1913a: 50, 1916: 282; Rhumbler 1922: 279, 1927: 291; Riley 1891b: 92; Rupertsberger 1880: 225; Saalas 1913a: 68, 78, 1949: 341, 364; Sahlberg 1871: 206; Schedl 1934f: 1635, 1952f: 87, 1980a: 9, 1981b: 51; Scherb

1971; Schimitschek 1937c: 48, 1955c: 78; Schlechtendal & Wunsche 1879: 124; Schwarz 1886: 56; Seidlitz 1872: 391; Spessivtsev 1913a: 65, 1922a: 461, 491, 1925a: 169, 1925b: 8, 1928a: 222–228, 1931: 25; Stark 1952: 197; Stebbing 1909b: 14; Swaine 1909: 113, 1918a: 61; Thomson 1865: 350, 1868: 218; Zetterstedt 1828: 343, 1838: 5, 1840: 192.

paykulli Duftschmidt 1825: 99 (*Hylesinus*). Syntypes, sex?; Wien, Austria; not located. Synonymy: Hagedorn 1910d: 9.
References: (**ds**) Duftschmidt 1825: 99; Schaum 1859: 95, 1862: 100; Schilsky 1909: 188; Stein 1868: 113; Stein & Weise 1877: 163. (**tx**) Doebner 1860; Duftschmidt 1825: 99; Hagedorn 1910d: 9.

decumanus Erichson 1836: 51 (*Hylesinus*). Syntypes, sex?; Europe; not located. Synonymy: Thomson 1865: 350, Eichhoff 1881a: 92.
References: (**ay**) Wichmann 1912a: 9. (**bv**) Wichmann 1912a: 7. (**cn**) Barbey 1925: 83; Fleischer 1877a; Herleim 1878; Hess 1898: 368; Keller 1910: 27; Kellner 1880: 422; Koch 1913: 91; Koppen 1882; Pierce, W. D. 1917: 69. (**ec**) Fleischer 1877a, 1877b. (**hb**) Barbey 1901: 18, 45, 1925: 83, 1942; Eichhoff 1881a: 92; Fleischer 1877a; Hess 1898: 368; Keller 1910: 27; Kellner 1880: 422; Ratzeburg 1837: 182, 1839: 164, 222. (**ds**) Bielz 1851; Blanchere & Robert 1889; Brancsik 1871; Calwer 1884, 1893; Chapuis 1869: 20, 1873: 228; Cho 1957; Favre 1890; Fleischer 1877b; Gaubil 1849: 127; Gozis 1875: 79; Gredler 1866: 369; Hagedorn 1910d: 9; Kaltenbach 1874: 686; Kleine 1912a: 161, 1912b: 166; Ko 1969: 278; Koppen 1882: 234; Kraatz 1869: 59; Lacordaire 1866: 359; Lindemann 1884b: 263; Lokaj 1868: 63; Miller 1868: 27; Murayama 1929b: 2, 1930b: 8, 1937b: 375, 1942a: 51, 1949a: 12; Pfeffer 1935: 157; Pierce, W. D. 1917: 69; Ratzeburg 1837: 182, 1839: 164, 222; Redtenbacher 1858: 824; Reitter 1869b: 153; Sahlberg 1871: 206; Schaum 1859: 95, 1862: 100; Schilsky 1909: 188; Seidlitz 1891a: 559, 1891b: 604; Stein 1868: 113; Stein & Weise 1866: 163; Stierlin 1898: 432; Stierlin & Gautard 1871: 291; Swaine 1909: 114; Wessel 1877: 390. (**tx**) Balachowsky 1949a: 124; Barbey 1901: 18, 45; Bertolini 1872; Blandford 1898c; Brancsik 1871; Chapuis 1869: 14, 20, 1873: 228; Doebner 1860; Eggers 1911a: 119–120; Eichhoff 1864b: 24, 1881a: 92; Erichson 1836: 51; Escherich & Escherich 1897; Hagedorn 1910a: 45; Hamilton 1894: 407; Koch 1913: 91, 1928: 74, 80; Lacordaire 1866: 359; Letzner 1891: 372; Motschulsky 1860a: 156; Murayama 1930b: 8, 12, 30, 1937b: 375; Pfeil 1862: 436; Ratzeburg 1837: 182, 1839: 164, 222; Redtenbacher 1849a: 364, 1849b: 27, 1858: 824; Schedl 1934f: 1635; Seidlitz 1891a: 559, 1891b: 604; Stierlin 1898: 432; Swaine 1909: 114; Thomson 1865: 350. (**ms**) Eggers 1910a, 1910b; Hartig 1834: 108.

tenebrosus Sahlberg 1836: 139 (*Hylesinus*). Syntypes, sex?; Finland; not located. Synonymy: Westhoff 1882: 236, Letzner 1891: 372.
References: (**ds**) Calwer 1884, 1893; Chapuis 1869: 21, 1873: 229; Gozis 1875: 79; Hagedorn 1910d: 9; Schaum 1862: 10; Stein 1868: 113; Stein & Weise 1877: 163. (**tx**) Balachowsky 1949a: 124; Chapuis 1869: 21, 1973: 229; Gemminger & Harold 1872: 2670; Kraatz 1964: 140; Letzner 1891: 372; Sahlberg 1836: 139; Westhoff 1882: 236.

° ***granulatus* (Schedl)** 1947a: 30 (*Hylescierites*). Holotype, sex?; Baltische Bernstein; Geologisch-Palaeontologische Inst. Albertus-Univ., Konigsberg.
Distribution: Europe (fossil in Baltic amber).
References: (**tx**) Schedl 1947a: 30.

***imitator* (Reitter)** 1900: 59 (*Hylastes*). Holotype, sex?; Chabarowka, W. Koltze, E. Siberia; NHMB, Budapest.
Distribution: Asia (N China/ Japan/ Siberia, Ussuri in E USSR).
Hosts: *Picea* sp., *Pinus* sp.
Notes: (1) Reitter 1913a: 51 (to *Hylurgops*). (3) A Wood homotype of *spessivtsevi* cannot be distinguished from *imitator* determined by Kurenzov and Michalski, synonymy is suspected.
References: (**cn**) Kurenzov 1935c: 189. (**ec**) Krivosheina 1974. (**hb**) Kurenzov 1935a: 24, 1948b: 106, 1950d: 198; Kurenzov & Kononov 1961: 598–599. (**ds**) Arnoldi et al. 1955: 671; Hagedorn 1910d: 10; Kleine 1912b: 162, 1914b: 249; Krivolutskaya 1983; Kurenzov 1935a: 24, 1935c: 189, 1936a: 111, 1936b: 350, 1938a: 59, 1965, 1967; Kurenzov & Kononov 1961: 595, 598–599; Pfeffer 1935: 157; Stark 1931d: 542, 1952: 199. (**tx**) Eggers 1911a, 1914: 187, 1933a: 98, 1933f: 55, 1940b: 61, 1941c: 119; Hagedorn 1910a: 45; Kurenzov 1941a: 123, 1948b: 106; Reitter 1900: 59, 1913a: 51; Schedl 1934f: 1636, 1979c: 121; Sokanovskii 1958: 38; Stark 1952: 199.

***incomptus* (Blandford)** 1897a: 145 (*Hylastes*). Syntypes, sex?; Andres Chalchicomula, now Ciudad Serdan, Puebla, Mexico; BMNH, London.
Figures: Schwerdtfeger 1957d: 364–365 (galleries).
Distribution: North America (Guatemala/ Honduras/ Chiapas, Chihuahua, Distrito Federal, Durango, Guerrero, Hidalgo, Mexico, Morelos, Puebla, Tlaxcala, Veracruz in Mexico/ Arizona, New Mexico in USA).
Hosts: *Pinus durangensis*, *P. engelmannii*, *P. leiophylla*, *P. pseudostrobus*, *P.* spp.
References: (**hb**) Atkinson & Equihua 1985a: 67; Atkinson et al. 1986: 13; Burgos & Saucedo 1983:

48; Schwerdtfeger 1957: 362; Wood, S. L. 1982b: 84. (**ds**) Atkinson & Equihua 1985a: 67, 1985b: 228, 1988: 90; Atkinson et al. 1986: 13; Blackwelder 1947; Burgos & Saucedo 1983: 48; Ferrer 1942; Furniss, R. L. & Carolin 1977: 365; Hagedorn 1910d: 10; Kleine 1912b: 166, 1914b: 347; Schedl 1977e: 42; Schwerdtferger 1957d: 362–367; Wood, S. L. 1957c: 397, 1982b: 84. (**tx**) Blandford 1897a: 145; Hagedorn 1910a: 45; Schedl 1940a: 338, 1955g: 5; Wood, S. L. 1957c: 397, 1982b: 8.

grandicollis Swaine 1917: 17. Lectotype, sex?; Cloudcroft, New Mexico; CNCI, Ottawa, designated by Bright 1967b: 675. Synonymy: Wood 1957c: 397.

References: (**cn**) Swaine 1918a: 80. (**hb**) Chamberlin 1939: 207; Swaine 1918a: 80. (**ds**) Chamberlin 1928, 1939: 207; Leng 1920: 339. (**tx**) Bright 1967b: 675; Chamberlin 1939: 204, 207; de Ruette 1970: 102; Swaine 1917: 17, 1918a: 80; Wood, S. L. 1957c: 397.

***inouyei* Nobuchi** 1959a: 10. Holotype, sex?; Ubun near Kagura, Hokkaido, Japan; Nobuchi Collection, Ibaraki.

Distribution: Asia (Japan).

Hosts: *Picea excelsa*, *P. glehnii*, *P. jezoensis*, *Pinus sylvestris*, *P. strobus*.

References: (**ec**) Nishiguchi 1959: 271, 1960c. (**tx**) Nobuchi 1959a: 10.

***interstitialis* (Chapuis)** 1875: 196 (*Hylastes*). Syntypes, sex?; Nagasaki and Kiushiu, Japan; IRSNB, Brussels.

Figures: Nobuchi 1966d: pl. 1.

Distribution: Asia (Heilongjiang, Jilin, Liaoning in China/ Japan/ Korea/ Taiwan/ Kamchatka, Siberia, Ussuri in E USSR).

Hosts: *Pinus koraiensis*, *P. densiflora*, *P. parviflora*, *P.* spp., *Abies holophylla*, *Picea jezoensis*, *P. koraiensis*.

References: (**ay**) Sasakawa & Yoshiyasu 1983. (**cn**) Inouye 1949a: 107, 1949b; Ko & Morimoto 1985; Kurenzov 1935c: 189; Murayama 1954a: 4; Oda, Kato, & Nobuchi 1964; Shiraki 1952. (**ec**) Cooreman 1963: 45; Krivosheina 1974; Kurenzov 1934a: 53. (**hb**) Arnoldi et al. 1955: 672; Kurenzov 1935a: 25, 1948b: 105, 1950d: 160; Kurenzov & Kononov 1961: 598; Stark 1952: 200; Stebbing 1909b: 14. (**ds**) Anonymous 1980g; Blandford 1894c; Choo 1983: 56; Choo & Woo 1985: 164; Choo, Woo, & Nobuchi 1988a: 134; Choo, Woo, & Park 1983: 176; Hagedorn 1910d: 10; Inouye 1949b; Kleine 1912b: 166, 1914b: 254, 1934a: 126; Ko 1969: 278; Krivolutskaya 1983; Ku 1964; Kurenzov 1934a: 53, 1935a: 25, 1935c: 189, 1936b: 350, 1965, 1967; Kurenzov & Kononov 1961: 595, 598, 599; Murayama 1936a: 142, 1937b: 366, 368, 1940a: 231, 1942a: 54, 1948: 2, 1949a: 12, 1949c: 99, 1950b: 1290, 1951c: 3, 1953a: 6, 1953c: 147, 1954a: 4, 1955: 98, 101; Nakane et al. 1963: 381; Nobuchi 1966b: 12, 1967: 19, 1985c: 4; Nohira & Ogawa 1986; Schedl 1960e: 171; Shiraki 1952; Stark 1952: 200. (**tx**) Blandford 1894d; Chapuis 1875: 196; Choo 1983: 56; Eggers 1933a: 97, 1933f: 55, 1940h: 61, 1941c: 119; Hagedorn 1910a: 45; Hansen, V. 1955: 172; Kurenzov 1941a: 122, 1948b: 105; Murayama 1937b: 368, 1940a: 231, 1950b: 1290, 1953a: 6, 1954b: 156, 1955: 98, 101; Nakane et al. 1963: 381, pl. 191; Niisima 1910a: 7; Nobuchi 1966b: 12, 1966d: pl. 1; Pfeffer 1944b: 102; Reitter 1913a: 51; Schedl 1934f: 1635, 1941a: 42, 1979c: 128.

niponicus Murayama 1936a: 123, 142. Holotype ♂; Kamikochi, Nagano Prefecture, Japan; Kiushu University. Synonymy: Wood 1992b: 83.

References: (**ds**) Murayama 1936a: 123, 142; Nobuchi 1966b: 12, 1985: 4. (**tx**) Murayama 1936a: 123, 142, 1954b: 157; Nobuchi 1966b: 12; Wood, S. L. 1992b: 83.

***junnanicus* Sokanovskii** 1959b: 93–94. Syntypes, sex?; Yunnan, China; Sokanovskii Collection.

Distribution: Asia (Yunnan in China).

Hosts: *Pinus armandii*, *P. tabulaeformis*.

References: (**tx**) Sokanovskii 1959b: 93–94.

***longipennis* (Blandford)** 1896e: 143 (*Hylastes*). Lectotype ♀; Rancho de Popocatepetl, Mexico, Mexico; BMNH, London, designated by Wood 1982b: 87.

Distribution: North America (Mexico in Mexico).

Hosts: *Pinus patula*, *P.* sp.

References: (**bv**) Chow et al. 1988. (**hb**) Wood, S. L. 1982b: 87. (**ds**) Atkinson & Equihua 1985a: 68, 1985b: 228; Blackwelder 1947; Ferrer 1942; Hagedorn 1910d: 10; Kleine 1912b: 162, 1914b: 347; Wood, S. L. 1982b: 87. (**tx**) Blandford 1896e: 143; Hagedorn 1910a: 45; Schedl 1940a: 338; Wood, S. L. 1982b: 87.

***longipilus* (Reitter)** 1894a: 63 (*Hylastes*). Syntypes, sex?; Chabarowka, Ostsibirien, USSR; NHMB, Budapest.

Distribution: Asia (Heilongjiang, Liaoning, Shansi, Sichuan in China/ Japan/ Korea/ Taiwan/ Sakhalin Island, Siberia in E USSR).

Hosts: *Pinus armandii*, *P. koraiensis*, *P. massoniana*, *P. tabulaeformis*, *Picea jezoensis*.

References: (**cn**) Inouye 1955: 1. (**hb**) Budkov 1897; Krivolutskaya 1956: 829; Kurenzov 1950d: 201; Kurenzov & Kononov 1961: 599; Stark 1952: 202. (**ds**) Budkov 1897; Hagedorn 1910d: 10; Heyden 1898: 77; Kleine 1912b: 166, 1914b: 249; Kono 1938b: 64–66; Kono & Tamanuki 1939: 89, 91–92; Krivolutskaya 1956: 829, 1983; Kurenzov 1936a: 111, 1938a: 64; Kurenzov & Kononov 1961: 595, 599; Nobuchi 1964: 132, 1985c: 4; Reitter 1894a: 63. (**tx**) Eggers 1911a, 1914: 187, 1933f: 2; Hagedorn 1910a: 45; Krivolutskaya 1956: 829, 1958: 121; Kurenzov 1941a: 126; Pfeffer 1944b: 102; Reitter 1894a: 63, 1900: 59, 1913a: 51;

Schedl 1934f: 1636, 1941a: 42, 1954b: 197; Stark 1952: 202; Yang 1989c.

likiangensis Tsai & Huang 1964b: 237, 240. Holotype ♂; Likiang, Yunnan, China; IZAS, Beijing. Synonymy: suspected, not confirmed.

References: (**tx**) Tsai & Huang 1964b: 237, 240.

***major* Eggers** 1944a: 67. Holotype ♂; Flussgebiet des Soling-ho-Flusses, Yunnan, China; Eggers Collection, in NHMW, Wien.

Distribution: Asia (Fujian, Hunan, Xizang [Tibet], Yunnan in China).

Hosts: *Pinus armandii*, *P. massoniana*, *P. tabulaeformis*, *P. yunnanensis*.

References: (**ds**) Yin & Huang 1981: 556. (**tx**) Eggers 1944a: 67; Schedl 1953e: 22, 1955h: 45; Yin & Huang 1981: 556.

***palliatus* (Gyllenhal)** 1813: 340 (*Hylesinus*). Syntypes, sex?; Sweden; Uppsala University.

Figures: Stark 1952: 203 (adult).

Distribution: Africa (Algeria), Asia (Heilongjiang in China/ Japan/ Korea/ Turkey/ Sakhalin Island, Siberia, Ussuri in E USSR), Europe (Austria/ Belgium/ Bulgaria/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Ireland/ Italy/ Netherlands/ Norway/ Poland/ Spain/ Sweden/ Switzerland/ Yugoslavia).

Hosts: *Abies alba*, *A. nordmanniana*, *A. pectinata*, *Picea excelsa*, *P. koraiensis*, *P. microsperma*, less common in *Pinus*, *Larix*, *Cedrus*.

References: (**ay**) Escherich 1923b: 429, 480, 568; Feytaud 1950a; Francke-Grosmann 1959, 1966c; Fuchs 1912a; Hadorn 1933; Leisewitz 1906: 91; Livingston & Berryman 1972: 1793, 1799; Marcu 1933a: 36; Munro 1917b: 123; Nunberg 1928a: 140; Nusslin 1912c: 275; Scherb 1971; Sedlaczek 1902b: 244; Wichmann 1912: 8–10. (**bv**) Annila 1971a: 12, 1975: 8–9; Annila & Petaisto 1978; Barr, B. A. 1969: 641; Borden & Wood 1966: 253; Butovitsch 1971; Byers, Anderbrant, & Lofqvist 1989; Chararas & Deschamps 1962; Chararas et al. 1982: 109; Eidmann 1987; Grune 1979: 53; Kevdina 1897: 108, 116; Klimetzek et al. 1986: 270; Kohnle 1985; Linsenmaier 1972: 154–155; Loyttyniemi, Heliovaara, & Repo 1988b; Loyttyniemi & Hiltunen 1976; Luitjes 1982; Magema, Gasper, & Severin 1982; Mozolevskaya, Lebedeva, & Galaseva 1979; Naumann-Etienne 1978a; Novak, V. 1962b; Nuorteva 1956c: 15; Nuorteva & Nuorteva 1968; Perttunen 1957: 102; Rozhkov 1970: 137; Saarenmaa 1978; Schnaider 1955: 233; Schroeder 1988a; Schroeder & Lindelow 1989; Sjodin et al. 1989; Vite, Volz, & Paiva 1986; Volz 1988; Wichmann 1912a: 9; Winter, K. 1980; Wood, D. L. & Bushing 1963: 1069. (**cn**) Anonymous 1946i: 1, 4; 1960f: 76, 1977r, 1978w, 1979p, 1980g; Bakke 1960: 318; Baoscj 1954: 321; Bejer-Petersen 1959a, 1978: 166; Besceli 1963; Butovitsch & Spaak 1939; Byers, Anderbrant, & Lofqvist 1989; Chararas 1961c: 93, 1978; Chorbadzhievo 1929; Crooke 1955b; Eidmann 1965c, 1973, 1987; Escherich 1923b: 429, 480, 568, 1932a; Esterberg 1959; Feytaud 1950a; Fleischer 1877a; Forbes 1910; Francke-Grosmann 1954a; Funke 1870; Gabler 1955; Galoux 1948e; Grandi 1951; Hanson 1937, 1940a, 1943; Hartig 1861: 324, 330, 1877: 190, 195; Hasek 1955, 1969: 5; Herlein 1878; Hess 1880, 1898: 365, 1907: 245, 262; Hess & Beck 1914: 259, 1927: 319; Inouye 1955; Inouye & Yamaguchi 1955a: 235; Jablokoff 1953: 325; Jacentkovsky 1933: 270; Jahn 1952a: 98; Jahn & Sinreich 1959: 1; Joly 1976; Judeich & Nitsche 1895: 447, 521; Juutinen 1960: 22; Kamp 1950; Kangas 1934d, 1966b; Karner & Kliefoth 1976; Kholodkovskii 1912: 279, 304; Koch 1913: 92; Kolbe 1987a; Koppen 1882: 236, 243; Kovacevic 1952: 69; Kozikowsky 1929: 253; Krol 1980a; Kurenzov 1935c: 187, 1950a: 13, 1956a: 90; Laidlaw 1947: 52; Lekander 1952b: 5, 1955b: 17; Lekander & Rennerfelt 1955: 10; Lekander, M. 1951: 50; Maksymov 1950: 554; Marcu 1926c: 62; Mathiesen 1952: 285; Mathiesen-Kaarik 1953: 10, 25; Mokrzecki 1925c: 44; Muller 1912: 184; Mumford 1960: 29, 1961: 25,43, 1965: 22, 1966: 28,58; Munro 1917a: 25; Nestertschuk 1930: 172; Niemeyer & Thalenhorst 1974; Nosek 1951: 106–107, 1952b: 100; Novak, V. 1959b: 73, 1976; Nuorteva 1959c: 1026; Nuorteva & Nuorteva 1968; Nusslin 1883: 152, 1913: 238; Oppermann 1985; Paulian 1943: 324; Pfeffer 1949b: 150, 1950c: 1; Pierce, W. D. 1917: 69; Pomocnicze 1876: 161; Rhumbler 1922: 279, 1927: 291; Saalas 1949: 341, 365; Sajevyc 1928: 329; Schimitschek 1961a: 154; Schwerdtfeger 1968a; Sierpinski 1954a: 63–67, 1971b: 10–11; Sinreich 1961: 166; Subansenee 1971; Tite 1956: 59; Titova 1966; Tragardh 1927c: 73; Tragardh & Butovitsch 1936: 553; Trappen 1932: 141; Vasechko 1964; Vite 1984b; Wachtl 1901: 381; Wardle 1929: 325; Weber 1926: 577; Wichmann 1927b: 350; Wilke 1931: 669; Wolff & Krausse 1922: 107; Zarco 1946a: 252; Zwolfer 1949: 399. (**ec**) Annila 1975: 11, 13, 1977; Annila & Petaisto 1978; Apfelbeck 1916b; Baert & Maelfait 1977; Baisch 1954: 321; Bakshi 1950, 1951; Balazy 1962, 1965a; Balazy & Michalski 1960, 1964b; Balazy et al. 1977; Belanowskii 1930; Beran 1936; Brammanis 1938; Butovitsch 1971; Chararas 1957a, 1958b, 1958c: 1653–1654, 1959b: 1407–1410, 1959c: 113–129, 1959e, 1959g: 215–233, 1960a: 31; Cooreman 1963: 45; Eck 1978; Eckstein 1926: 577; Eidmann 1965c, 1974b; Elliot & Morley 1907; Fleischer 1877a, 1877b; Francke-Grosmann 1931, 1959, 1966c; Fuchs 1930, 1937; Galoux 1947b, 1947c: 433, 1947d; Gaulle 1906: 237; Gerlach 1922; Gillanders 1906; Graham 1969: 878; Grossmann 1931a; Gyorfi 1941b, 1952b; Heliovaara & Lilja 1989; Heqvist 1957a, 1963: 151, 1967: 70; Hirschmann 1960, 1971a, 1971b: 39,41; Hirschmann &

Wisniewski 1982, 1983; Hirschmann & Zirngiebl-Nicol 1961; Hubault 1923a; Inouye & Yamaguchi 1955a: 235; Jahn & Sinreich 1960b; Jakaitis & Valenta 1976: 20; Jamnicky 1957c; Kakuliya & Maglakelidze 1973; Kangas 1946b: 22; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1975, 1978, 1980a, 1983; Kleine 1908c: 181, 1909a: 44, 76, 1944: 69; Kolubajiv & Kalandra 1954: 36; Kosarievskaya & Mamajev 1962: 450–451; Kostin 1964: 105; Krivosheina 1974; Krogerus 1927: 122; Krol 1980a; Kuhn 1949a: 279; Kurenzov 1934a: 54; Lavaszy 1941: 195; Livingston & Berryman 1972: 1793, 1799; Loyttyniemi & Hiltunen 1976; Luitjes 1976; Majewski, T. & Wisniewski 1978a: 5, 8–9; Mathiesen 1952: 285; Mathiesen-Kaarik 1953: 10, 25, 1960c; Meyer 1918: 178; Michalski & Ratajczak 1989; Moor & Neffeler 1983, 1984; Mozolevskaya, Lebedeva, & Galaseva 1979; Naumann-Etienne 1978a; Niemeyer & Thalenhorst 1974; Nikitsky 1978; Nishiguchi 1959: 271; Nosek 1951: 106–107, 1952b: 100; Novak, V. 1962b; Nunberg 1930: 201; Nuorteva 1956a: 17, 1957b: 52, 1959d: 193, 1961a, 1961c: 119–120, 1967a, 1968a, 1970, 1971: 69; Nuorteva & Nuorteva 1968; Nusslin 1927: 291; Okolow 1963; Palmen 1946: 194; Perris 1852: 497, 1856a: 224; Pfeffer 1923a: 330, 1932a: 11, 1933: 43, 1943b: 180, 1949b: 150, 1950c: 1, 1952a: 159, 1957a: 196, 1959: 4; Poinar 1975: 159; Purrini 1977a, 1978a, 1980; Purrini & Weiser 1985: 66; Rondani 1873: 149; Roubal 1934a: 86; Ruhm 1956b: 3; Saalas 1917a: 18, 1928: 649, 1949: 341, 365, 1951: 13; Saarenmaa 1978; Schedl 1936f: 172; Schimitschek 1930a: 340, 1930c: 281, 1931b: 487 1935a: 202, 1936a: 559, 1937c: 48, 1938b: 114, 1938c: 2112, 1939d: 2112, 1941a: 313; 1941b: 59, 1944: 166, 1947g: 191, 1948e: 97, 1949b: 165, 1952a: 208, 1952c: 59, 1953b: 526, 1955a: 67, 69, 1955c: 78, 1964e; Schmidt 1881: 43; Schneeberg 1925: 495; Schneider-Orelli & Kuhn 1948: 518; Schwerdtfeger 1944a: 179, 1950b: 62, 1955b: 92, 1957a: 184; Sedlaczek 1908: 49, 1921: 325, 1935a: 153, 158; Sinreich 1958: 197; Slander 1958: 51; Strohmeyer 1950: 21; Subansenee 1971; Szczepanski 1960: 407, 414; Tenkacova & Mituch 1987; Thalenhorst 1949d: 264, 1958: 34; Thaler 1902: 278, 1903: 400; Thompson, W. R. 1943: 52; Thompson, W. R. & Simmonds 1964: 21, 1965: 74,84; Titova 1966; Tragardh 1917: 28, 1921e: 64, 1927a: 195, 1928: 775; Tvermur 1967: 484, 496; Vietinghoft 1924: 336; Vitzthum 1923: 125, 1926: 427; Wallace 1953: 164; Wiackowski 1957a: 43; Wichmann 1955a: 98, 1956: 60, 1958: 233; Wilke 1931: 669; Winter, K. 1980; Wisniewski 1979b, 1979c: 5, 1980; Wisniewski & Hirschmann 1984; Woodring 1966b: 106; Zethner-Moller & Rudinsky 1967: 907; Zinovjev 1957: 345, 1958: 382; Zmur 1985b. (**hb**) Alkan 1946: 142; Altum 1881c: 267, 1889c; Annila 1977; Annila & Petaisto 1978; Anonymous 1866: 422, 1946i: 1, 4; Apfelbeck 1916b, 1917; Barbey 1901: 18, 46; Bargmann 1906; Beffa 1961; Bejer-Petersen 1957, 1978; Beling 1873 ; Beran 1936; Besceli 1963; Bevan 1962c: 95; Boas 1923: 323; Borodajewsky 1929b; Bykov 1987; Chararas 1962c: 406; Charvat 1950; Chorbadzhievo 1929; Dallimore & Munro 1922; Dombrowski 1887; Eckstein 1897, 1926: 577; Eichhoff 1881a: 36, 93, 1882a: 241, 1882d: 337; Eidmann 1974b; Elton et al. 1964; Escherich 1923b: 429, 480, 568; Everts 1900, 1903: 752; Feytaud 1950a; Fleischer 1877a; Fuchs 1904a, 1905c: 340, 1907: 52, 1911b; Gabler 1955; Gillanders 1906, 1908; Gornostaev 1916: 311; Grandi 1951; Gyorfi 1957; Hacker 1885; Hadorn 1933; Hagedorn 1903a; Hartig 1861: 324, 330, 1877: 190, 195; Helmbacher 1924; Hennings 1908d; Henschel 1876a: 43, 240, 1885b, 1895a: 135; Hess 1880, 1898: 365; Hess & Beck 1914: 259, 1927: 319; Holmgren 1867: 120; Joly 1976; Judeich & Nitsche 1895: 447, 521; Kangas 1949c; Karpinski 1933b: 24; Karpinski & Strawinski 1948: 154; Karsch 1883: 143; Kholodkovskii 1912: 279, 304; Kleine 1908a: 98; Kliefoth 1976; Knoche 1905: 354; Knotek 1894a: 553, 1899b: 2, 1901: 565; Koch 1909: 333; Kohnle 1985; Krivolutskaya 1956: 829, 1960, 1973: 132; Kurenzov 1935a: 25, 1948b: 100, 1950d: 199; Lekander 1959a: 84; Lengerken 1939: 39, 1954: 82; Lindemann 1881a: 236; Loos 1913: 406; Louzil 1961: 41, 144; Luitjes 1976; MacDougall 1899: 152; Magema, Gaspar, & Severin 1982; Maksymov 1950: 554; Marcu 1941: 402; Michalski 1959a: 291; Mozolevskaya, Lebedeva, & Galaseva 1979; Munro 1916a: 275, 1916b: 119, 1917a: 25, 1917b: 123, 1926: 54; Naumann-Etienne 1978a; Nordlinger 1856: 35; Nunberg 1929: 100, 1929c: 119; Nuorteva 1956c: 15, 1967a, 1968a, 1970; Nusslin 1898: 277, 1906b: 14, 16, 1913: 238, 1927: 291; Paulian 1943: 324; Perris 1852: 497, 1856a: 224; Petrenko 1966; Pfeffer 1941b: 1, 1941c: 5, 1952a: 159, 1989a: 37; Postner 1974: 397; Qiu & Huo 1958: 267; Ratzeburg 1837: 148, 180, 1839: 158, 221; Rhumbler 1922: 279, 1927: 291; Rozhkov 1970: 137; Rupertsberger 1879: 231, 1880: 225; Saalas 1913a: 68, 79, 1949: 341, 365, 1951: 13; Schimitschek 1930a: 281, 340, 1944: 166, 1955a: 67, 69; Schmidt 1881: 43; Schnaider 1954: 172, 1955: 233–236; Schnaider & Sierpinski 1955: 60; Schneider-Orelli 1947b: 156; Schwerdtferger 1944a: 179, 1957a: 184, 1981: 190; Sedlaczek 1921: 335, 1935a: 153, 158; Slander 1958: 151; Sommerville 1890b: 255; Spessivtsev 1913a: 64, 1938: 159; Stark 1926a: 332, 1952: 202; Subansenee 1971; Taschenberg 1880: 209; Thalenhorst 1958: 34; Tragardh 1914: 85, 1921e: 64, 1927c: 73, 1939b: 151, 190; Tschorbadjiev 1929: 162; Wachtl 1901: 381; Weber 1926: 577; Wichmann 1927b: 350; Winter, K. 1980; Wolff & Krausse 1922: 107; Zinovjev 1957: 345, 1958: 382. (**ds**) Acloque 1896; Allen, A. 1951b; Ammann

& Knabl 1913, 1923; Andersch 1851; Annila et al. 1972: 8; Anonymous 1928c: 202, 1960f: 76, 1977r, 1978w, 1979p, 1980g; Arnoldi et al. 1955: 673; Audras & Schaefer 1957; Balazy & Michalski 1960; Barthe 1896; Bau 1888; Bedel 1888b; Bejer-Petersen & Jorum 1977: 13; Belousov 1916, 1917: 335; Bickhardt 1916; Bielz 1851, 1887; Bistrom & Vaisanen 1988: 42; Blanchere & Robert 1889; Boas 1923: 323; Borchert 1951; Brakman 1966b: 204; Brancsik 1871; Buresh & Lazarov 1956; Butovitsch & Heqvist 1947; Calwer 1884; Chapuis 1869: 22, 1873: 230; Chapuis & Candeze 1853; Chararas 1962c: 406; Charvat 1950; Choo & Woo 1989b; Chorbadzheivo 1924d, 1929; Chrystal 1937; Dallimore & Munro 1922: 189–193; Dejean 1821, 1825, 1837; Donisthorpe 1933b; Duprez 1938a; Eder 1934; Eggers 1904; Eidmann 1974b; Endrodi 1958b; Ericson & Sandin 1893; Ermisch 1953; Escalera 1919; Escherich 1923b: 429, 480, 568, 1932b; Esterberg 1928, 1959; Everts 1900, 1922: 639; Fairmaire 1884; Favre 1890; Fleischer 1877b; Fleischer et al. 1921b; Florov 1949: 72; Fowler 1891; Fuchs 1904a, 1905a, 1905c: 340, 1907: 52; Gaidiene 1976; Gaubil 1849: 128; Gornostaev 1917: 308–315; Gozis 1875: 79; Gredler 1866: 369, 1875: 114; Grill 1895: 307; Grouzelle 1905; Grune 1979: 53; Gyllenhal 1827: 618; Gyorfi 1941b; Hagedorn 1903a, 1910a: 10; Hallet 1923c; Hansen, V. 1939, 1956, 1964: 458; Hellen 1947; Helliesen 1916: 83; Hennig 1954: 257; Henschel 1895a: 135; Heyden 1876: 296; Heyden, Reitter, & Weise 1883: 181, 1891: 668, 1906: 710; Hickin 1963; Holdhaus & Deubel 1910: 145; Holmgren 1867: 120; Holzel 1946: 81; Horion 1951; Hubault 1923b; Huhta et al. 1986; Ihssen 1939: 336; Jablokoff 1953: 325; Jacentkovsky 1933: 270, 1939: 77; Jamnicky 1960a; Jansson 1935: 77; Jazentkovsky 1912: 288; Johnson, W. F. & Halbert 1902: 818; Joly 1976; Judeich & Nitsche 1895: 447, 521; Kaltenbach 1874: 686; Kangas 1949c; Karpinski 1925: 216, 1926: 82, 1931: 22, 1933b: 24, 1948b: 229; Karpinski & Strawinski 1948: 154; Kersten 1933: 73; Kestercanek 1881a: 12; Kiefer et al. 1942: 528; Klefbeck & Sjoberg 1960: 228; Kleine 1912a: 128, 217, 267, 1912b: 162, 1913a: 34, 1934a: 126; Kloft & Hinks 1945: 218; Knotek 1892a: 33, 1894a: 553, 1899b: 2, 1901: 565; Koca 1905: 191; Kolbe 1987a; Koltze 1901: 152; Kono 1938b: 64, 66; Kono & Tamanuki 1939: 89, 91; Koppen 1882: 236, 253; Koschitsky 1900: 83; Kraatz 1869: 59; Krivolutskaya 1956: 829, 1960, 1965: 228, 1973: 132, 1983; Kurenzov 1934a: 54, 1935a: 25, 1935c: 187, 1936b: 351, 1965; Kurir 1947c: 7; Lacordaire 1866: 359; Langhoffer 1915c: 157; Larroche & Torossian 1971; Leclercq 1971; Lekander 1955b: 17; Lentz 1857: 137; Liegel 1886: 43; Lindberg & Saris 1952: 59; Lindemann 1884b: 263; Lokaj 1868: 63; Lomnicki 1886a: 240, 1913b: 148; Loos 1913: 406; Lovendal 1890c: 210; Lucht 1987: 276; Luigioni 1929: 994; Lundberg 1974: 92, 1979: 31; Lundblad 1950c: 114; Marcu 1926c: 62; Matthew & Fowler 1883: 42; Mequignon 1936: 15, 40; Michalski 1957: 163; Mumford 1960: 29, 1961: 25, 43, 1965: 22, 1966: 25, 58; Munro 1916a: 275; Murayama 1939: 138, 1940a: 231, 1946: 27; Nakane et al. 1963: 381; Negru 1966b: 400, 1968a: 455; Nobuchi 1964: 132, 1985c: 4; Nunberg 1928b: 88, 100, 1954: 23; Nuorteva 1971: 67; Nusslin 1898: 277; Orest 1926b: 81–87, 1926c: 62; Palm 1946: 120, 1948a: 90, 1962: 183; Palmen 1946: 194; Perris 1876a: 253, 1877a: 413; Pfeffer 1924b: 471, 1928b: 2, 1931b: 74–75, 1935: 159, 1947e: 2, 1950b: 73, 1984: 277, 1989a: 37; Pierce, W. D. 1917: 69; Pittioni 1943: 175; Platonoff 1940: 11, 1943: 141, 1952: 63; Pomerantzev 1907b: 426, 491; Poppius 1900: 107; Postner 1974: 397; Rapp 1934: 726; Ratzeburg 1837: 148, 180, 1839: 158, 221; Redtenbacher 1858: 825, 1874: 366; Reitter 1869b: 153, 1894a: 63, 1916: 282; Roubal 1910: 230, 1941: 260; Rozhkov 1970: 137; Ruskov 1928c: 61; Saalas 1913a: 68, 79, 1917a: 18, 1931: 69; Sahlberg 1900: 104; Saint-Albin 1949: 2; Sainte-Claire & Mequignon 1938: 444; Schaufuss 1915: 1225; Schaum 1862: 100; Schedl 1954b: 198, 1959h: 99, 1965h: 111, 1967c: 69, 1971f: 147, 1978e: 37, 1980a: 10, 1981b: 51; Scheerpeltz & Winkler 1930: 256; Schilsky 1909: 188; Schmitschek 1937: 114, 1938b: 114; Schiodte 1873: 99; Schreiner 1897: 369; Schwerdtfeger 1981: 190; Seidl 1876: 1; Seidlitz 1872: 391, 1891a: 559, 1891b: 604; Sharp & Fowler 1893: 34; Sielke 1875: 281; Sparre-Schneider 1889: 60; Stark 1926a: 332, 1926b: 124, 1927b: 88, 1931a: 21, 1931d: 543, 1952: 202; Stein 1868: 113; Stein & Weise 1877: 163; Stephens 1829a: 147, 1830: 364; Stierlin 1898: 432; Stierlin & Gautard 1871: 291, 1906: 205; Strand 1946: 596; Strand & Hanssen 1935: 70; Strauch 1861: 123; Sturm 1826: 156, 1843: 229; Subansence 1971: 114–123; Thomson 1865: 349, 1868: 218; Tomic 1957: 207–210; Tragardh 1914: 55, 1939b: 151, 190; Tredl 1907: 9; Tschorbadjiev 1929: 162; Verhoff 1891: 22; Villa & Villa 1833: 26; Wanka 1908: 231; Wegelius 1960: 106; Welch, R. C. 1968: 121; Wessel 1877: 390; Westhoff 1882: 237; Wichmann 1927a: 60, 1955a: 98; Wiepken 1883: 89; Wilke 1931: 669; Winter, T. G. 1983: 48; Yanovskii 1989: 64; Yanovskii & Dmitrienko 1983; Yanovskii & Tegshzhargal 1984: 415; Zetterstedt 1828: 342, 1840: 191; Zinovjev 1955: 187; Zivojinovic 1960; Zoufal 1920: 21. (**tx**) Acloque 1896; Alkan 1946: 142; Altman 1844; Bach 1854; Balachowsky 1949a: 124; Barbey 1901: 18, 46; Bedel 1888a, 1888b; Beffa 1961; Bejer-Petersen 1957; Bertolini 1872; Boas 1923: 323; Brancsik 1871; Calwer 1858; Chapuis 1869: 22; Chapuis & Candeze 1853; Charvat 1950; Chorbadzhievo 1924d; Csiki 1909; Dejean 1821, 1825; Doebner 1860; Dombrowski 1887; Eggers

1914: 187, 1929e: 42–43, 1933f: 2; Eichhoff 1864b: 24, 1881a: 36, 93, 1883a: 101, 123; Endrodi 1957b; Escherich 1923b: 429, 480, 568; Everts 1902: 752, 1922: 639; Fauvel 1887, 1889; Ferrant 1911; Fleischer 1905, 1927; Formanek 1907: 29; Fuchs 1912a; Gabler 1955; Gemminger & Harold 1872: 2670; Grune 1979: 52, 53; Guillanders 1908; Gyllenhal 1813: 340, 1827: 618; Hagedorn 1910a: 46, 1910d: 10; Hansen, V. 1956, 1964: 458; Hasek 1961: 5; Henry 1892: 15; Henschel 1876a: 43, 240, 1895a: 135; Iablokoff-Khnzorian 1961: 105; Joly 1976, 1976b: fig. 136; Judeich & Nitsche 1895: 447, 521; Kalina 1970: 129; Karpinski & Strawinski 1948: 154; Knotek 1892a: 33; Koch 1913: 92, 1932: 106; Krivolutskaya 1956: 829, 1958: 120; Kuhnt 1913: 1053; Kurenzov 1941a: 124, 1948b: 100; Lacordaire 1866: 359; Letzner 1891: 372; Leunis 1886: 178; Lindemann 1881a: 236; Louzil 1960: 105; Lovendal 1889b: 33, 1890c: 210, 1898: 114; Lucht 1987: 276; Luigioni 1929: 994; Munro 1916a: 275, 1916b: 119, 1917b: 123; Murayama 1939: 138, 1940a: 231; Nakane et al. 1963: 381, pl. 191; Negru 1966b: 400; Nordlinger 1856: 35; Nunberg 1928a: 140, 1929c: 119, 1947: 99–108, 1954: 23; Nusslin 1912c: 275; Perris 1877a: 413; Pfeffer 1932b: 15, 1941b: 1, 1941c: 5, 1944b: 102, 1947c: 2, 1955a: 120, 1957: 196–207, 1989a: 37; Portevin 1935: 319; Postner 1974: 397; Quaschik 1953: 35; Ratzeburg 1837: 148, 180, 1839: 158, 221; Redtenbacher 1849a: 364, 1849b: 27, 1858: 825, 1874: 366; Reitter 1894a: 63, 1913a: 50, 1916: 282; Rhumbler 1922: 279, 1927: 291; Rupertsberger 1879: 231, 1880: 225; Saalas 1913a: 68, 79, 1949: 341, 365; Sahlberg 1836: 137; Schedl 1934f: 1636, 1952f: 87, 1954b: 198, 1959h: 99, 1980a: 10, 1981b: 51; Schimitschek 1937c: 48, 1955c: 78; Schlechtendal & Wunsche 1879: 124; Seidlitz 1872: 391, 1891a: 559, 1891b: 604; Sharp & Fowler 1893: 34; Sherb 1971; Sokanovskii 1954: 15; Spessivtsev 1913a: 64, 1922a: 461, 490, 1925a: 169, 1925b: 7, 1931: 24; Stark 1952: 202; Stephens 1829a: 147, 1829b: 12, 1830: 364; Stierlin 1898: 432; Taschenberg 1880: 209; Thomson 1865: 349, 1868: 218; Zetterstedt 1828: 342, 1840: 191. (**ms**) Escherich 1932b; Fuchs 1911b; Gotz 1877; Hartig 1834: 412, 414; Kozikowsky 1929: 253; Lekander 1959a: 84; Michalski 1959a: 291; Wichmann 1961: 331–332; Yang 1989c (hb).

rufus Marsham 1802: 57 (*Ips*). Syntypes, sex?; England; not located. Synonymy: Hagedorn 1910d: 11.

References: (**ds**) Murray 1853: 61; Stephens 1829a: 147, 1830: 365, 1839: 209. (**tx**) Crotch 1866; Hagedorn 1910d: 11; Marsham 1802: 57; Stephens 1829a: 147, 1829b: 12, 1830: 365, 1839: 209.

piceus Marsham 1802: 58 (*Ips*). Syntypes, sex?; England; not located. Synonymy: Balachowsky 1949a: 125.

References: (**ds**) Stephens 1829a, 1830: 365, 1839: 209. (**tx**) Balachowsky 1949a: 125; Marsham 1802: 58; Stephens 1829a, 1829b: 12, 1830: 365, 1839: 209.

abietiperda Bechstein 1818: 187 (*Bostrichus*). Syntypes, sex?; Europe; not located. Synonymy: Ratzeburg 1837: 180, Murayama 1939: 138.

References: (**hb**) Feisthamel 1835. (**ds**) Sturm 1826: 156; Villa & Villa 1833: 26. (**tx**) Bechstein 1818: 74, 187; Murayama 1939: 138; Ratzeburg 1837: 180.

marginatus Duftschmidt 1825: 104 (*Hylesinus*). Syntypes, sex?; Wien, Austria; not located. Synonymy: Ratzeburg 1837: 180, Hagedorn 1910d: 10.

References: (**ds**) Duftschmidt 1825: 104. (**tx**) Duftschmidt 1825: 104; Hagedorn 1910d: 10; Murayama 1939: 138; Ratzeburg 1837: 180.

fuscus Duftschmidt 1825: 105 (*Hylesinus*). Syntypes, sex?; Linz, Austria; not located. Synonymy: Hagedorn 1910d: 10.

References: (**ds**) Dejean 1821; Duftschmidt 1825: 105. (**tx**) Dejean 1821; Duftschmidt 1825: 105; Hagedorn 1910d: 10; Murayama 1937: 372, 1939: 138.

rufescens Stephens 1830: 364 (*Hylurgus*). Syntypes, sex?; London, England; not located. Synonymy: Hagedorn 1910d: 11.

References: (**ds**) Murray 1883: 61; Stephens 1829a: 146–147, 1830: 364, 1839: 209. (**tx**) Hagedorn 1910d: 11; Murayama 1939: 138; Stephens 1829a: 147, 1829b: 12, 1830: 364, 1839: 209.

helferi Villa 1835: 49 (*Hylurgus*). Syntypes, sex?; Europe; not located. Synonymy: Murayama 1939: 138, Balachowsky 1949a: 125.

References: (**ds**) Heyden, Reitter, & Weise 1883: 181; Stein & Weise 1877: 163. (**tx**) Balachowsky 1949a: 125; Eichhoff 1883a: 123; Gemminger & Harold 1872: 2670; Murayama 1939: 138; Villa 1835: 49.

parvus Eggers 1933f: 2. Holotype, sex?; Wladiwostok, Ostsibirien, USSR; Eggers Collection, in NHMW, Wien. Synonymy: Sokanovskii 1954: 15.

References: (**hb**) Kurenzov 1948a: 50, 1950d: 161; Stark 1952: 204. (**ds**) Stark 1952: 204. (**tx**) Eggers 1933f: 2; Nobuchi 1959a: 11; Sokanovskii 1954: 15; Stark 1952: 204.

° ***piger* Wickham** 1913: 27. Holotype, sex?; fossil in Colorado Miocene; not located.

Distribution: North America (fossil in Colorado Miocene).

References: (**ds**) Chamberlin 1939: 2, 4; Leng 1920: 363; Wickham 1913: 5, 27, 1920: 363. (**tx**) Chamberlin 1939: 2, 4; Wickham 1913: 5, 27.

° ***pilosellus* Schedl** 1947a: 26. Holotype, sex?; fossil in Baltic amber; Geologisch-Palaeontologische. Inst. Albertus Univ., Konigsberg.
Figures: Schedl 1947a: 26 (adult).
Distribution: Europe (fossil in Baltic amber).
References: (**ds**) Keilbach 1982: 255; Schedl 1967b; Spahr 1981. (**tx**) Schedl 1947a: 16, 26. (**ms**) Keilbach 1982: 255.

***planirostris* (Chapuis)** 1869: 21 (*Hylastes*). Lectotype ♀; Suapan, Mexico; IRSNB, Brussels, designated by Wood 1972b: 146.
Figures: Schwerdtfeger 1957d: 366 (galleries).
Distribution: North America (Guatemala/ Baja California Sur, Chiapas, Chihuahua, Distrito Federal, Durango, Michoacan, Morelos, Oaxaca, Puebla, Tlaxcala, Veracruz in Mexico/ Arizona, New Mexico in USA).
Hosts: *Pinus ayacahuite*, *P. leiophylla*, *P. patula*, *P. pseudostrobus*, *P.* spp.
References: (**ay**) Thomas, J. B. 1967. (**bv**) Livingston, W. H. et al. 1983. (**ec**) Livingston, R. L. 1980; Livingston, W. H. et al. 1981, 1983. (**hb**) Atkinson & Equihua 1985a: 67; Atkinson et al. 1986: 15; Burgos & Saucedo 1983: 48; Schwerdtfeger 1957d: 365; Wood, S. L. 1982b: 85. (**ds**) Atkinson & Equihua 1985a: 67, 1985b: 228, 1988: 90; Atkinson et al. 1986: 15; Blackwelder 1947: 786; Blandford 1896e: 144; Burgos & Saucedo 1983: 48; Chapuis 1869: 21, 1873: 229; Ferrer 1942; Hagedorn 1910d: 11; Kleine 1912b: 166, 1914b: 347, 358; Schedl 1940a: 338, 1963c: 156, 1966f: 76, 1977e: 42; Schwerdtfeger 1957d: 365, 385; Wood, S. L. 1982b: 85. (**tx**) Atkinson et al. 1986: 15; Blandford 1896e: 144; Chapuis 1869: 21, 1873: 229; Gemminger & Harold 1872: 2670; Hagedorn 1910a: 46, 1910d: 11; Hopkins 1905b: 81; Schedl 1955g: 6; Thomas, J. B. 1967; Wood, S. L. 1972b: 146, 1982b: 85.

knausi Swaine 1917: 17. Lectotype, sex?; Cloudcroft, New Mexico; CNCI, Ottawa, designated by Bright 1967b: 675. Synonymy: Wood 1972b: 146.
References: (**hb**) Chamberlin 1939: 207; Swaine 1918a: 81. (**ds**) Chamberlin 1939: 207; Leng 1920: 339. (**tx**) Bright 1967b: 675; Chamberlin 1939: 207; de Ruette 1970: 102; Swaine 1917: 17, 1918a: 81; Wood, S. L. 1972b: 146.

***porosus* (LeConte)** 1868: 175 (*Hylastes*). Lectotype ♀?; California [USA]; MCZ, Cambridge, designated by Wood 1972b: 147.
Figures: Kusch 1967: 10.
Distribution: North America (Alaska/ Alberta, British Columbia, Saskatchewan in Canada/ Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, South Dakota, Utah, Washington, Wyoming in USA).
Hosts: *Pinus attenuata*, *P. contorta*, *P. flexilis*, *P. jeffreyi*, *P. ponderosa*, *P. radiata*, *P.* spp., rarely *Picea* spp.
References: (**cn**) Brown, R. W. & Winter 1981; Chamberlin 1924; Doane et al. 1936; Hopkins 1902c: 13; James & Linnane 1980: 14; Keen 1938: 27, 1952c: 154; Lindgren 1980a: 63; Schuder 1969: 78; Smith, G. J. & Melvin 1974a; Swaine 1918a: 81–83. (**ec**) Harrington & Cobb 1983; Keen 1938: 27; Kinn 1971; Livingston, R. L. 1980; Powell, J. M. & Skaley 1975. (**hb**) Bright 1976d: 46; Bright & Stark 1973: 23; Chamberlin 1939: 207, 1958: 119; Doane et al. 1936; Keen 1938: 27, 1952c: 154; Lindgren 1980a: 63; Swaine 1918a: 81–82; Wood, S. L. 1982b: 85. (**ds**) Bright 1976d: 46; Bright & Stark 1973: 23; Brown, R. W. & Winter 1981; Chamberlin 1925, 1939: 207, 1958: 119; Choo, Woo, & Kim 1981: 202; Evans, D. 1983: 33, 1985: 12; Furniss, M. M. & Furniss 1972; Furniss, R. L. & Carolin 1977: 365; Hagedorn 1910d: 11; Henshaw 1882: 269, 1885: 149; Hopkins 1902c: 13; Hopping 1922; Keen 1929a: 24, 1938: 27, 1952c: 154; Kleine 1912b: 162, 1914b: 389, 1934a: 126; Kusch 1967; Leng 1920: 339; McComb et al. 1953: 3; Patterson & Hatch 1945: 151; Powell, J. M. & Kaley 1975; Schuder 1969: 78; Smith, G. J. & Melvin 1974a; Susut & Melvin 1974; Swaine 1909: 146; Wickham 1896a: 310; Winter 1983: 51; Wood, S. L. 1948: 32, 1951a: 127, 1972a: 399, 1982b: 85. (**tx**) Bright 1976d: 46; Chamberlin 1939: 207, 1958: 119; Evans, D. 1983: 33; Gemminger & Harold 1872: 2670; Hagedorn 1910a: 46, 1910d: 11; Keen 1929a: 24; Kusch 1967: 10; LeConte 1868: 175, 1876: 388; Pardy 1983; Swaine 1909: 146, 1917: 16, 1918a: 81–82; Wood, S. L. 1948, 1951a: 47, 1972a: 399, 1972c: 147, 1982b: 85–87.

lecontei Swaine 1917: 16. Holotype ♀; Colorado [USA]; CNCI, Ottawa. Synonymy: Wood 1972b: 147.
References: (**cn**) Chamberlin 1924; Doane et al. 1936; Essig 1926: 518, 1958: 518; Keen 1929: 57, 1938: 27, 1952c: 154; Ruppel 1967: 52; Schuder 1969: 74; Swaine 1918a: 81–82. (**ec**) Keen 1938: 27. (**hb**) Chamberlin 1939: 207, 1958: 119; Doane et al. 1936; Essig 1926: 518, 1958: 518; Hopkins 1902: 13; Keen 1929: 57, 1938: 27, 1952c: 154; Swaine 1918a: 81–82. (**ds**) Chamberlin 1917, 1925, 1939: 207, 1958: 119; Essig 1926: 518, 1958: 518; Hagedorn 1910d: 11; Hopping 1922; Keen 1929a: 25, 57, 1938: 27, 1952c: 154; Leng 1920: 339; Patterson & Hatch 1945: 151; Ruppel 1967: 52; Schuder 1969: 74; Swaine 1909: 146; Wood, S. L. 1948: 33. (**tx**) Bright 1967b: 675; Bruck 1936a; Chamberlin 1917: 326–327, 1939: 207, 1958: 119; Hoebeke 1978; Keen 1929a: 25; LeConte 1868: 175, 1876: 388; de Ruette 1970: 102; Ruppel 1967: 52; Schuder 1969: 74; Swaine 1917: 16, 1918a: 81–82; Wood, S. L. 1972b: 147.

***reticulatus* Wood** 1972d: 71. Holotype ♂; Summit Lake, Shasta Co., California; Wood Collection.

Distribution: North America (Alaska/ British Columbia, Northwest Territories in Canada/ Chihuahua in Mexico/ Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, South Dakota, Utah, Washington, Wyoming in USA).

Hosts: *Picea engelmannii*, *P. sitchensis*, *Pinus attenuata*, *P. contorta*, *P. jeffreyi*, *P. monticola*, *P. muricata*, *P. ponderosa*, *P. radiata*, *Pseudotsuga menziesii*, *Tsuga heterophylla*.

References: (**cn**) Lindgren 1980a: 64. (**ec**) Stephen & Dahlsten 1976b: 292. (**hb**) Bright 1976d: 47; Bright & Stark 1973: 23; Lindgren 1980a: 64; Wood, S. L. 1982b: 88. (**ds**) Bright 1976d: 47; Bright & Stark 1973: 23; Furniss, R. L. & Carolin 1977: 365; Wood, S. L. 1982b: 88. (**tx**) Bright 1976d: 47; McNamara 1977: 196; Wood, S. L. 1972d: 71, 1982b: 88.

***rugipennis* (Mannerheim)** 1843: 297 (*Hylastes*). Syntypes, sex?; Sitka Island, Alaska [USA]; not at MZU, Helsinki, lost?.

Figures: Bright 1976d: 200, 205.

Notes: (1) Wood 1982b: 89 (subspecies established).

rugipennis rugipennis:

Distribution: North America (Alaska/ British Columbia, Yukon in Canada/ California, Oregon, Washington in USA).

Hosts: *Picea engelmannii*, *P. sitchensis*, *Pinus attenuata*, *P. contorta*, *P. lambertiana*, *P. monticola*, *P. muricata*, *P. radiata*, *Pseudotsuga menziesii*.

Notes: (1) Wood 1982b: 89 (subspecies).

References: (**bv**) Barr, B. A. 1969: 641; Chapman 1963: 675,676; Daterman, Rudinsky, & Nagel 1965; Oester, Ryker, & Rudinsky 1978; Ohmart & Voight 1982: 340. (**cn**) Brown, R. W. & Winter 1981; Chamberlin 1924; Doane et al. 1936; Essig 1926: 518, 1958: 518; Hopkins 1899b: 21, 1899c: 342, 449, 1904a: 19; James & Linnane 1980: 14; Keen 1929: 57, 1952c: 154; Lindgren 1980a: 63; Schuder 1969: 78; Smith, G. J. & Melvin 1974a; Swaine 1918a: 81. (**ec**) Chamberlin 1918a; DeLeon 1934a; Deyrup & Gara 1978: 275; Mason, W. R. M. 1978; Ohmart & Voight 1982: 340; Werner & Holsten 1984. (**hb**) Bright 1976d: 46; Bright & Stark 1973: 24; Chamberlin 1939: 206, 1958: 118; Chittenden 1890; Daterman, Rudinsky, & Nagel 1965; Doane et al. 1936; Essig 1926: 518, 1958: 518; Hopkins 1899b: 21, 1899c: 342, 449, 1904a: 19; Keen 1929: 57, 1952c: 154; Lindgren 1980a: 64; Pierce 1907: 294; Swaine 1918a: 81; Wood, S. L. 1982b: 89. (**ds**) Bright 1976d: 46; Bright & Stark 1973: 24; Chamberlin 1917, 1918a, 1925, 1939: 206, 1958: 118; Chapman, J. H. 1963: 675–676; Chapuis 1869: 20, 1873: 228; Chittenden 1890; Cockerell et al. 1907; Currie 1905; Essig 1926: 518, 1958: 518; Evans, D. 1983: 33; Fall 1906: 203; Furniss, M. M. & Furniss 1972; Furniss, R. L. & Carolin 1977: 365; Gautreau & Melvin 1974: 13; Hagedorn 1910d: 11; Hamilton 1894a: 36; Henshaw 1885: 149; Hopping 1922; Keen 1929a: 25, 57, 1952c: 154; Kleine 1912a: 218, 1912b: 166, 1934a: 126; Kusch 1967; Lacordaire 1866: 359; Leng 1920: 339; Leonard 1928: 516; Melsheimer 1853: 88; Murayama 1957a: 36; Ohmart & Voight 1982: 340,345; Patterson & Hatch 1945: 151; Ruppel 1967: 52; Schuder 1969: 76; Schwarz 1900: 537, 1910: 185; Smith, G. J. & Melvin 1974a, 1974b; Still, Tidsbury, & Melvin 1974a: 13; Susut & Melvin 1974; Swaine 1909: 115; Van Dyke 1924: 26; Werner & Holsten 1984; Wickham 1896a: 310, 1896b: 170; Wood, S. L. 1948: 31, 1982b: 89. (**tx**) Bright 1976d: 46; Chamberlin 1939: 206, 1958: 118; Chapuis 1869: 20, 1873: 228; Evans 1983: 33; Gemminger & Harold 1872: 2670; Hagedorn 1910a: 46; Hopkins 1905b: 81; Jacques 1951: 350; Keen 1929a: 25; Kusch 1967: 10; Lacordaire 1866: 359; LeConte 1857: 22, 1868: 176, 1876: 390; Mannerheim 1843: 125, 297, 1853: 238; Swaine 1909: 115, 1918a: 81; Wood, S. L. 1969c: 116, 1982b: 89.

***rugipennis pinifex* (Fitch)** 1858: 729 (*Hylastes*). Lectotype ♀; New York [USA]; USNM, Washington, designated by Wood 1982b: 90.

Distribution: North America (Alberta, British Columbia, Manitoba, New Brunswick, Nova Scotia, Ontario, Quebec in Canada/ Alabama, Arizona, California, Colorado, Connecticut, District of Columbia, Georgia, Idaho, Maine, Maryland, Massachusetts, Michigan, Minnesota, Montana, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Utah, Virginia, West Virginia, Wisconsin, Wyoming in USA).

Hosts: *Pinus balfouriana*, *P. contorta*, *P. flexilis*, *P. resinosa*, *P. strobus*, *P. virginiana*, *Picea* spp., *Larix americana*.

Notes: (1) Wood 1982b: 90 (reduced to subspecies). (3) Intergradation and/or apparent hybridization occur in interior southern British Columbia.

References: (**ay**) Hopkins 1894g: 280; Packard 1883: 280–282; Thomas, J. B. 1957: 4, 1967. (**bv**) Clemens 1916; Gardner 1957a; Hosking & Knight 1975. (**cn**) Anonymous 1989b; Balch 1945; Beal et al. 1952; Becker, W. D. 1955d, 1959b, 1962, 1964a, 1964c; Blackman 1950; Chamberlin 1918, 1924; Chenier & Philogene 1989a; Clemens 1916: 297; Doane et al. 1936; Felt 1906: 649, 665–666, 1926: 325, 1930a: 325; Harrington 1881: 32; Hopkins 1892b,

1899c: 449; Keen 1929: 57; Kondo & Taylor 1985; Lindquist, O. H. & Syme 1981: 59; Martin, J. L. 1965; Packard 1890: 709; Pierson 1927: 80; Smith, J. B. 1900: 365; Swaine 1918a: 81; Syme & Nystrom 1988: 56; Thomas, J. B. 1965a. (**ec**) Blackman & Stage 1918; Cooreman 1963: 45; Gardner 1957a; Graham 1921, 1923: 22–40; Reid 1955: 341; Tomalak, Welch, & Galloway 1989b: 2; Vitzthum 1926: 427. (**hb**) Baker, W. L. 1972: 252; Beal & Massey 1945: 92–93; Blackman 1919a: 90–95, 1950; Blackman & Stage 1918; Bright 1976d: 44; Bright & Stark 1973: 23; Chamberlin 1939: 206; Chapman 1963: 673–676; Chittenden 1899a; Clemens 1916; Currie 1905: 74; Dillon & Dillon 1961: 809; Doane et al. 1936; Felt 1926: 325, 1930a: 325; Harrington 1902a: 116; Hopkins 1893: 144, 1894g: 58, 1899; Keen 1929a: 57; Packard 1883b: 282, 1890: 709; Peirson & Dimond 1927: 80, 109; Pierce 1907: 294; Reid 1955: 312, 1957d: 437, 441; Schwarz 1888a: 50, 80; Swaine 1912b: 142, 1918a: 81; Wolcott & Montgomery 1933: 165; Wood, S. L. 1982b: 90. (**ds**) Anonymous 1926c: 516; Atkinson 1991: 154; Beal & Massey 1945: 92–93; Beaulne 1950; Blackman 1950; Blatchley & Leng 1916: 666; Bright 1976d: 44; Bright & Stark 1973: 23; Britton 1920a; Chamberlin 1917: 326, 1918: 33, 1925, 1939: 206; Chittenden 1899a; Deyrup 1981b: 2; Dodge 1938; Felt 1926: 325, 1930a: 325; Frost 1912: 308; Hagedorn 1910d: 11; Hamilton 1889: 159, 1890: 44, 1891: 132; Harrington, W. H. 1894: 16; Henshaw 1885: 149, 1887: 8; Heyden 1890: 132; Hopkins 1893a: 144, 1893b: 213; Hopping 1922; Hubbard & Schwarz 1878b: 643, 666; Keen 1929a: 57; Kleine 1912b: 166, 1914b: 399, 1934a: 126; Leng 1920: 339; Lindquist, O. H. & Syme 1981: 59; McComb et al. 1953: 3; Packard 1890: 709–710, 722, 826; Proctor 1946: 207; Provancher 1877: 574; Schedl 1940a: 338, 1971f: 147; Schwarz 1886: 56, 1888a: 50, 1904: 185; Schwerdtfeger 1957: 365; Smith, J. B. 1900: 365, 1910: 405; Snow 1881: 70, 1883: 44, 1906: 175, 1907: 188; Swaine 1909: 114; Swaine & Craighead 1924; Syme & Nystrom 1988: 56; Thomas, J. B. 1955: 341; Ulke 1902: 56; Vitzthum 1926: 467–503; Wickham 1896c: 168; Wolcott & Montgomery 1933: 165; Wood, S. L. 1951a: 127, 1982b: 90. (**tx**) Anonymous 1891: 92; Beal & Massey 1945: 92–93; Blandford 1894d: 58, 1898c: 6; Blatchley & Leng 1916: 666; Bright 1976d: 44; Chamberlin 1939: 205–206; Chapuis 1869: 20, 1873: 228; Clemens 1916; Dillon & Dillon 1961: 801, 809; Dodge 1938: 14, 32; Eichhoff 1896: 605; Fitch 1858: 729; Gemminger & Harold 1872: 2670; Hagedorn 1910a: 46; Hamilton 1891: 132; Heyden 1890: 132; Hopkins 1904: 19, 1905: 81, 1914: 123, 1915c: 211; LeConte 1868: 176, 1876: 389–390; LeConte & Horn 1883: 525; Lindquist, O. H. & Syme 1981: 59; Provancher 1877: 574; Riley 1891b: 92; Schwarz 1896: 56; Swaine 1909: 114, 1918a: 81; Syme & Nystrom 1988: 56; Thomas, J. B. 1957: 4, 1967; Titus, Meikle, & Harrison 1985: 76; Wood, S. L. 1982b: 90. (**ms**) Swaine 1912b: 142.

° ***schellwieni*** **(Hagedorn)** 1906: 117 (*Hylastites*). Holotype, sex?; fossil in Baltic amber; Geologisch-Palaeontologische Inst. Albertus Univ., Konigsberg, lost.

Distribution: Europe (fossil in Baltic amber).

Notes: (1) Schedl 1947a: 24 (to *Hylurgops*). (3) Schedl 1947a: 24 (original description quoted).

References: (**ds**) Hagedorn 1907a, 1907b, 1910d: 11; Keilbach 1982: 255; Kleine 1912a: 163, 1912b: 162; Spahr 1981. (**tx**) Hagedorn 1906: 117, 1907a, 1907b, 1910a: 46; Keler 1928: 24; Schedl 1947a: 15, 24. (**ms**) Keilbach 1982: 255.

spessivtsevi **Eggers** 1914: 187. Lectotype ♂; Ostsibirien, USSR; USNM, Washington, designated by Anderson & Anderson 1971: 30.

Figures: Nobuchi 1967: pl. 1.

Distribution: Asia ("Manchuria" [Heilongjiang?] in China/ Japan/ Korea/ Siberia in E USSR).

Hosts: *Pinus koraiensis*, *P. pumila*, *Larix dahurica*, *Picea obovata*, *P. jezoensis*.

Notes: (1) Kurenzov 1941a: 125 (original spelling of *spessiwzeffi* amended). (3) Synonymy suspected, see *imitator* note 3).

References: (**cn**) Kurenzov 1935c: 187. (**ec**) Kurenzov 1934a: 50. (**hb**) Kurenzov 1950d: 200; Stark 1952: 205. (**ds**) Arnoldi et al. 1955: 673; Florov 1949: 74; Kleine 1934a: 127; Krivolutskaya 1983; Kurenzov 1934a: 50, 1935c: 187, 1938a: 59; Manal 1931: 25; Nobuchi 1966e: 54, 1967: 19, 1985c: 4; Stark 1931d: 542, 1952: 205. (**tx**) Anderson, W. H. & Anderson 1971: 30; Eggers 1914: 187, 1922c, 1933f: 2; Krivolutskaya 1958: 120; Kurenzov 1941a: 125, 1948b: 106; Murayama 1942: 57; Nobuchi 1966e: 54, 1967: pl. 1, 1985c: 4; Pfeffer 1944b: 102; Schedl 1934f: 1636; Sokanovskii 1959: 95; Stark 1952: 205.

modestus Murayama 1937b: 367. Syntypes 8, sex?; Pic Biro du Kongosan, Korea; Murayama Collection in USNM, Washington. Synonymy: Wood 1992b: 83.

References: (**ds**) Cho 1957; Choo 1983: 57; Ko 1969: 278; Murayama 1937b: 367–368. (**tx**) Murayama 1937b: 367–368; Wood, S. L. 1992b: 83.

squamosus Murayama 1942: 51, 56. Holotype, sex?; Manchukuo; Murayama Collection at USNM, Washington. Synonymy: Murayama 1942: 56, a probable variety.

Notes: (3) Murayama 1941a: 51 (cited as possible variety of *spessivtsevi*).

References: (**tx**) Murayama 1942a: 51, 56.

***subcostulatus* (Mannerheim)** 1853: 239 (*Hylastes*). Holotype, sex?; Kenai Peninsula, Alaska, [USA]; not in MZU, Helsinki, lost?.

Notes: (1) Wood 1982b: 91 (subspecies established).

subcostulatus subcostulatus:

Distribution: North America (Alaska/ British Columbia in Canada/ Arizona, California, Colorado, Idaho, Montana, New Mexico, Oregon, South Dakota, Utah, Washington, Wyoming in USA).

Hosts: *Pinus contorta*, *P. jeffreyi*, *P. ponderosa*, *P.* spp., *Picea engelmannii*, *P.* spp., *Pseudotsuga menziesii*.

Notes: (1) Wood 1982b: 91 (subspecies established).

References: (**cn**) Anonymous 1967f; Blackman 1931c; Chamberlin 1924; Doane et al. 1936; Hopkins 1902c: 14, 1904a: 19; Keen 1929: 57, 1952c: 154; Lindgren 1980a: 64; Schuder 1969: 78; Stevens, Brewer, & Leatherman 1980: 25; Swaine 1918a: 81–82. (**ec**) Blackman 1931c; DeLeon 1934a; Furniss, R. L. & Carolin 1977: 365; Livingston, W. H. et al. 1983; Stephen & Dahlsten 1976b: 292; Thompson, W. R. & Simmonds 1964: 21, 1965: 27. (**hb**) Blackman 1931c: 34; Bright 1976d: 44; Bright & Stark 1973: 22; Chamberlin 1939, 1958; Doane et al. 1936; Furniss, R. L. & Carolin 1977: 365; Hopkins 1904a: 19; Keen 1929: 57, 1952c: 154; Lindgren 1980a: 64; Pierce 1907: 295; Stevens, Brewer, & Leatherman 1980: 25; Swaine 1918a: 81–82; Wood, S. L. 1982b: 91. (**ds**) Anonymous 1967f; Bright 1976d: 44; Bright & Stark 1973: 22; Chamberlin 1917: 326, 1925, 1939: 206, 1958: 118; Cockerell et al. 1907; Currie 1905: 74; Evans 1983: 33; Fall 1906: 203; Furniss, M. M. & Furniss 1977; Furniss, R. L. & Carolin 1977: 365; Hagedorn 1910d: 9, 12; Hamilton 1894: 36; Henshaw 1885: 149; Hopkins 1902c: 13, 141; Hopping 1922; Keen 1929a: 24, 57, 1949a: 93, 1952c: 154; Kleine 1912b: 166, 1914b: 347, 389, 1934a: 124; Lacordaire 1866: 359; Lange 1937: 173; Leng 1920: 339; Patterson & Hatch 1945: 151; Schedl 1940a: 338; Schuder 1969: 78; Smith, G. S. 1930; Swaine 1909: 115; Wickham 1896b: 179; Wood, S. L. 1982b: 91. (**tx**) Blandford 1895b: 144, 146; Bright 1976d: 44; Chamberlin 1939: 206, 1958: 118; Eggers 1929e: 54; Eichhoff 1896: 606; Evans 1983: 33; Gemminger & Harold 1872: 2670; Hagedorn 1910a: 46; Keen 1929a: 24; Lacordaire 1866: 359; LeConte 1857: 22, 1868: 176, 1876: 389–390; Mannerheim 1853: 239; Swaine 1909: 115, 1918a: 81–82; Wood, S. L. 1969c: 116, 1982b: 91.

cristatus Mannerheim 1853: 239 (*Hylastes*). Holotype, sex?; Kenai Peninsula, Alaska, USA; not in MZU, Helsinki, lost?. Synonymy: Wood 1982b: 91.

References: (**ds**) Hagedorn 1910d: 9; Hamilton 1894a: 36; Henshaw 1885: 149; Kleine 1912a: 218, 1912b: 162; Lacordaire 1866: 359; Leng 1920: 339; Swaine 1909: 1. (**tx**) Gemminger & Harold 1872: 2669; Hagedorn 1910a: 45; Lacordaire 1866: 359; LeConte 1857: 22, 1868: 177, 1876: 381, 389; Mannerheim 1853: 239; Swaine 1909: 113; Wood, S. L. 1969c: 115, 1982b: 91.

***subcostulatus alternans* (Chapuis)** 1869: 22 (*Hylastes*). Syntypes, sex?; Mexique; IRSNB, Brussels.

Distribution: North America (Chiapas, Chihuahua, Distrito Federal, Durango, Guerrero, Hidalgo, Mexico, Morelos, Puebla in Mexico/ S Arizona, S New Mexico in USA).

Hosts: *Pinus chihuahuana*, *P. leiophylla*, *P. ponderosa*, *P.* spp.

Notes: (1) Wood 1982b: 92 (reduced to subspecies). (3) Intergradation between subspecies occurs from central Arizona and New Mexico to northern Mexico.

References: (**ay**) Thomas, J. B. 1967. (**hb**) Atkinson & Equihua 1985a: 69; Atkinson et al. 1986: 15; Burgos & Saucedo 1983: 49; Wood, S. L. 1982b: 92. (**ds**) Atkinson & Equihua 1985a: 69; Atkinson et al. 1986: 15; Blackwelder 1947; Blandford 1897a: 146; Burgos & Saucedo 1983: 49; Ferrer 1942; Leng 1920: 339; Schedl 1963c: 156; Swaine 1909: 116; Thomas, J. B. 1966; Wood, S. L. 1982b: 92. (**tx**) Blandford 1897a: 146; Chapuis 1869: 22, 1873: 230; Eggers 1929e: 54; Eichhoff 1896: 606; Gemminger & Harold 1872: 2669; Schedl 1940a: 338; Swaine 1909: 116, 1918a: 82; Thomas, J. B. 1967; Wood, S. L. 1982b: 92.

***sulcatus* Eggers** 1933a: 97. Holotype, sex?; China: Szechuan, Tatsienlu Tjiji, Urwaldrodungen; Eggers Collection, in NHMW, Wien.

Distribution: Asia (Sichuan in China).

References: (**tx**) Eggers 1933a: 97–98; Sokanovskii 1959b: 93–94.

***transbaicalicus* Eggers** 1941b: 119. Holotype, sex?; Wladiwostok, USSR; USNM, Washington.

Figures: Nakane et al. 1963: pl. 191.

Distribution: Asia (Japan/ E USSR).

Hosts: *Pinus koraiensis*.

Notes: (1) Murayama 1963b: 61 (synonym of *interstitialis*). Sokanovskii 1958: 38 (synonym of *imitator*.

References: (**ds**) Nakane et al. 1963: 381; Nobuchi 1985c: 5. (**tx**) Anderson, W. H. & Anderson 1971: 34; Eggers 1941b: 119; Nakane 1963: 381; Nakane et al. 1963: pl. 191; Nobuchi 1964: 132, 1985c: 5; Sokanovskii 1958: 38.

***tuberculatus* Eggers** 1933a: 98. Holotype ♀: Tatsienlu Tjiji, Szechuan, China; USNM, Washington.

Distribution: Asia (Sichuan in China).

References: (**tx**) Anderson, W. H. & Anderson 1971: 34; Eggers 1933a: 98.

° ***tuberculifer* Wood** 1988: 32. Holotype, sex?; fossil in Baltic amber; Geologisch-Palaeontologische Inst. Albertus Univ., Konigsberg.

Distribution: Europe (fossil in Baltic amber).

References: (**tx**) Wood, S. L. 1988: 32.

tuberculatus Schedl 1947a: 28. Holotype, sex?; fossil in Baltic amber; Geologisch-Palaeontologische Inst. Albertus Univ., Konigsberg, preoccupied by Eggers 1933a: 198.

References: (**tx**) Schedl 1947a: 16, 28; Spahr 1981.

Genus *Hylastes* Erichson

HYLASTES ERICHSON 1836: 47. Type-species: *Bostrichus ater* Paykull, designated by Westwood 1840: 39, Thomson 1859: 146.

Keys: Blackman 1941: 3, Bright 1976: 47, and Wood 1982b: 93 for North America; Murayama 1963b: 48 for Japan; Tsai & Huang 1964: 23 for China; Pfeffer 1944b: 98 for Europe.

Notes: (3) Species named by Stebbing 1908b: 14–15 as *Hylastes himalayensis* and *H. longifoliae* belong to Cossoninae (Curculionidae) and are here transferred to that subfamily.

References: (**ay**) Nobuchi 1969a: 49; Schonherr 1970b. (**bv**) Rudinsky & Zethner-Moller 1967: 911–912; Schonherr 1970b. (**cn**) Cooke 1954: 163–169; Rudinsky & Zethner-Moller 1967: 911–912; Simmonds 1966; Wellenstein 1954: 448–503; Zethner-Moller & Rudinsky 1967: 897–898. (**ec**) Koerber 1985; Lindquist 1970a: 980; MacDougall 1920; Nickle 1976b; Nickle & Welch 1984: 637; Pax 1921: 43–56; Rudinsky & Zethner-Moller 1967: 911–912; Webber & Gibbs 1989; Zethner-Moller & Rudinsky 1967: 897–898. (**hb**) Beal & Massey 1945: 52, 58, 93; Brammanis 1930: 168–177; Bright & Stark 1973: 25; Butovitsch 1934: 10; Judeich & Nitsche 1895: 445; Postner 1974: 392; Wood, S. L. 1982b: 93, 1986a: 36; Zethner-Moller & Rudinsky 1967: 897–898. (**ds**) Bright & Stark 1973: 25; Danks 1979; DelGuercio 1915; Hagedorn 1910d: 7–12; Patterson & Hatch 1945: 151; Rudinsky & Zethner-Moller 1967: 911–912; Schedl 1967b; Sedlaczek 1921: 334–339; Stoakley 1968: 182–188; Tragardh 1920: 1–6; Trappen 1935: 141; Winkler 1932: 1632; Wood, S. L. 1982b: 93, 1986a: 36; Zethner-Moller & Rudinsky 1967: 897–898. (**tx**) Acatay 1945: 3; Arnett 1960: 1034, 1041, 1968: 1034, 1041; Balachowsky 1949a: 127–133; Barbey 1901: 41; Bedel 1888b: 388–389 (as *Tomicus*); Blackman 1922b: 48, 63, 1941: 1–27, 1950: 301–302; Blandford 1893d: 425, 1894d: 56, 1895b: 81, 84–85, 1896e: 118, 142–144; Blatchley & Leng 1916: 667, 669; Brethes 1921: 433–435; Bright 1976d: 47–53, 1978: 47; Bright & Stark 1973: 25; Bruck 1936a: 43, 46; Chamberlin 1939: 208–215, 1958: 114–117; Chapius 1869: 8, 16, 1873: 224; Choo 1983: 57; Choo, Woo, & Nobuchi 1988b; Dodge 1938: 17; Eichelbaum 1903: 60–70; Eichhoff 1864b: 23–24, 29, 44, 46, 1881a: 35, 76, 1883a: 100; Erichson 1836: 47; Escherich 1923b: 457–480; Espinos 1967: 121–125; Fisher 1937: 115, 118, 130; Fuchs 1912a: 4–47; Gabler 1955: 222; Gemminger & Harold 1872: 2669; Hagedorn 1909b: 137–138, 1910a: 43–46, 1910d: 7–12; Hansen, V. 1955: 169–176, 1956: 177–185; Hanson, H. S. 1940a: 511–534, 1940b: 19–45; Hopkins 1914: 122, 1915: 122, 127, 177, 209; Jacquelin du Val & Fairmaire 1868: 99, 107; Karaman 1972: 69–71; Keen 1952: 73, 128, 154; Krivolutskaya 1958: 123; Kurenzov 1941: 131; Lacordaire 1866: 1358; LeConte 1868: 174, 1876: 387; LeConte & Horn 1883: 521, 524; Lekander 1965: 196–201, 1968a: 107–110; Leng 1920: 339; Lovendal 1889: 10–11, 30; Lucas 1920: 341; Lugger 1899: 233; Munro 1917: 123–158, 1926: 41, 54, 1946: 7–55; Murayama 1963b: 48–55; Niisima 1909: 137; Nunberg 1954: 17–20; Nusslin 1911a, 1912c; Perris 1856: 223; Pfeffer 1944b: 97–105, 1955: 105–118, 1989a: 37; Postner 1974: 392; Prell 1926: 68; Provancher 1877: 574; Redtenbacher 1845: 51, 96, 154, 164; Reitter 1894a: 38, 59–63, 1913a: 49–51; Saalas 1914: 79–80; Schedl 1947: 12–45, 1952a: 448, 1955g: 3, 1959n:378–383, 1968c: 155–158, 1981b: 48; Scheerpeltz & Winkler 1930: 256; Schmitschek 1937: 44–45, 85; Spessivtsev 1922: 461, 1931: 84; Stark 1931: 339–343, 1952: 208–219; Stresemann et al. 1989: 351; Swaine 1909: 144, 1918a: 44, 47, 77–80; Swan 1942: 86–90; Thomson 1859: 146; Tsai & Huang 1964: 229–234; Westwood 1840: 39; Wichmann 1927: 347–372; Wollaston 1854: 304; Wood, S. L. 1961a: 42, 1967d: 36–37, 1982b: 93–107, 1986a: 36; Yin & Huang 1981: 556.

***ambiguus* Blandford** 1894c: 57. Holotype, sex?; Fujisan, Japan; BMNH, London.

Distribution: Asia (Japan).

References: (**hb**) Stebbing 1909b: 14. (**ds**) Blandford 1894c: 57; Hagedorn 1910d: 7; Kleine 1912b: 162, 1914b: 254; Nobuchi 1985c: 4. (**tx**) Blandford 1894c: 57; Hagedorn 1910a: 45; Murayama 1954b: 155; Pfeffer 1944b: 102; Schedl 1934b: 1636, 1968c; Sokanovskii 1956: 40; Stebbing 1909b: 14.

° ***americanus* Wickham** 1913: 27. Holotype, sex?; fossil in Colorado Miocene; not located.

Distribution: North America (fossil in Colorado Miocene).

References: (**ds**) Chamberlin 1939: 2, 4; Leng 1920: 363; Wickham 1913: 5, 27, 1920: 363. (**tx**) Chamberlin 1939: 2, 4; Wickham 1913: 5, 27.

***angustatus* (Herbst)** 1793: 111 (*Bostrichus*). Syntypes, sex?; Europe; not located.

Figures: Pfeffer 1989: pl. 3.

Distribution: Africa (introduced into South Africa), Asia (Turkey), Europe (Austria/ Bulgaria/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Norway/ Poland/ Spain/ Sweden/ Switzerland/ W Turkey, W USSR).

Hosts: *Pinus sylvestris*, *P. pinaster*, rarely *Picea excelsa*.

Notes: (3) Letzner 1891: 372 (*graphus* Duftschmidt, nomen nudum, synonymy).

References: (**ay**) Escherich 1923b: 481; Feytaud 1950a; Fuchs 1912a: 16, 33, 42; Marcu 1933a: 37; Scherb 1971. (**bv**) Barr, B. A. 1969: 641; Dutoh 1975; Grune 1979: 51; Jones, T. 1966; Naumann-Etienne 1978a; Nuorteva 1956c: 28. (**cn**) Acatay 1943a: 62; Altum 1887: 392–396; Anonymous 1946i: 1, 3, 1985j; Barbey 1925: 204; Bevan & Jones 1971; Blateny 1924; Boas 1933; Boden 1903; Borthwick 1980: 59, 1981: 44, 1983b: 78; Browne 1968: 341; Butovitsch & Spaak 1939; Champion 1917: 173; Chorbadzhievo 1929; Dobrodejev 1924; Dutoit 1975; Eckstein 1926: 577; Escherich 1923b: 481; Feytaud 1950a; Gabler 1955; Gornostaev 1917; Grandi 1951; Hess 1898: 381; Hess & Beck 1914: 249, 1927: 303; Joly 1976; Jones, T. 1966; Judeich & Nitsche 1895: 453; Kamp 1956b: 471; Kangas 1934, 1937; Kauschinger 1893: 150; Kholodkovskii 1912: 304; Koch 1910: 18, 1913: 22; Komarek 1931; MacDougal 1914, 1915; Mayne 1926; Mokrzecki 1925; Mostovsky 1923; Muller 1912: 185; Orest 1926; Pax 1921: 185; Pfeffer 1933: 43; Phillips, D. H. & Bevan 1967: 7; Pierce, W. D. 1917: 74; Schimitschek 1944: 167, 1955c: 79; Schmidt 1881: 42; Schuster 1918: 102; Schwerdtfeger 1950b: 44, 1957a: 189; Siemasko 1937; Thaler 1902: 278, 1903: 400; Wachtl 1883b: 319; Webb, D. 1974: 9; Weber, H. 1926: 577; Wichmann 1927b: 352. (**ec**) Anonymous 1985j; Chararas 1959c; Dereksen 1941; Galoux 1947b; Gyorfi 1941b; Jakaitis & Valenta 1976: 20; Kangas 1937; Kleine 1908c: 181; Naumann-Etienne 1978a; Novak, P. 1952: 413; Nuorteva 1956a: 16; Perris 1852: 504, 1856a: 228; Pfeffer 1923a: 330, 1928b: 9, 1933: 43, 1943b: 181; Poinar 1975: 157; Ratzeburg 1869a: 59; Ruhm 1956b: 3; Schuster 1918: 102; Schwerdtfeger 1944a: 183, 1950b: 44, 1957a: 189; Tullgren 1916; Wiackowski 1957a: 43; Wingfield & Knox-Davies 1980; Wingfield & Marasas 1983; Wingfield, Strauss, & Tribe 1985; Zolk 1937. (**hb**) Acatay 1943a: 62; Altum 1881c: 268, 1887a, 1889c; Anonymous 1946i: 1, 3, 1985j; Barbey 1913: 172, 1925: 204; Bargmann 1906: 316; Bevan & Jones 1971; Bielussov 1917; Boden 1903; Browne 1968: 341; Budge 1949; Budkov 1897; Bukowsky 1930; Cecconi 1924; Chararas 1962c: 306; Charvat 1950; Chorbadzhievo 1929; Eckstein 1889, 1897, 1926: 577; Eichhoff 1881a: 36, 89, 1883d: 676; Escherich 1923b: 481, 619–622; Everts 1903: 752; Feytaud 1950a; Fuchs 1904a; Gabler 1955; Galoux 1947: 13; Grandi 1951; Gyorfi 1947: 3, 1957; Hagedorn 1903a; Henschel 1861: 80, 1876a: 86, 240, 1880b: 257; Herbst 1793: 111; Hess 1898: 381; Hess & Beck 1914: 249, 1927: 303; Jazentkovsky 1931b: 23–30, 38, 75, 89, 165; Joly 1976; Jones, T. 1971; Judeich & Nitsche 1895: 453; Karpinski 1932b: 52–56, 1933b: 24; Karpinski & Strawinski 1948: 154; Karsch 1883: 143; Kauschinger 1883: 110, 1893: 150; Kemner 1919: 170; Kholodkovski 1912: 304; Lengerken 1939: 61; Marcu 1927b: 425–427; Munro 1926: 55; Naumann-Etienne 1978a; Nunberg 1929: 101; Nuorteva 1956c: 28; Nusslin 1898: 277; Perris 1852: 504, 1856a: 228; Pfeffer 1933: 3–54, 1941b: 2, 1955; Postner 1974: 394; Ratzeburg 1837: 137, 179, 1839: 166, 210; Scheidter 1925: 2–3; Schevyrew 1887b; Schimitschek 1944: 167; Schmidt 1881: 42; Schwerdtfeger 1944a: 183, 1949: 1, 1957a: 189, 1981: 194; Sedlaczek 1918: 253–283; Spessivtsev 1913a: 67; Stark 1926a: 333, 1952: 216; Taschenberg 1880: 210; Tschorbadjiev 1929: 163; Wachtl 1883: 319; Webb, D. 1974: 9; Weber, H. 1926: 577; Wichmann 1927b: 352. (**ds**) Acloque 1896; Andersch 1851; Anonymous 1970c: 13; Audras & Schaefer 1957; Barthe 1896; Bau 1888; Bedel 1888b; Bejer-Petersen 1977: 16; Bielz 1887; Bistrom 1978; Blanchere & Robert 1884; Borchert 1951; Brakman 1966b: 204; Brancsik 1871, 1906; Browne 1968: 341; Bucking 1932; Budkov 1897; Bukowsky 1930; Buresh & Lazarov 1956; Calwer 1884, 1893; Carpentier & Delaby 1908; Cecconi 1897; Champion 1893; Chapuis 1869: 19, 1873: 227; Chararas 1962c: 306; Charvat 1950; Chorbadzhievo 1924d, 1929; Correa de Barros 1907; Crotch 1863; Debatisse 1945; Dejean 1837; Donisthorpe 1898; Eckstein & Butovitsch 1931; Eder 1934; Eggers 1904; Endrodi 1958b; Ermisch 1953; Escherich 1923b: 481, 1932b; Eyquem 1891; Favre 1890; Fjellberg 1966: 154; Forster 1849: 440; Fowler 1891; Fuchs 1904a, 1905a; Ganglbauer 1904; Gaubil 1849: 128; Girard 1881a; Gozis 1875: 79; Gredler 1866: 369; Grill 1895: 307; Grouzelle 1905; Grune 1979: 51; Gyllenhal 1827: 618; Gyorfi 1941b; Hagedorn 1903a, 1910d: 8–10; Hansen, V. 1939, 1956, 1964: 458; Heinemann 1908a; Hellen 1947; Helliesen 1916: 83; Hepburn 1966; Heyden 1876: 296, 1898: 77; Heyden, Reitter, & Weise 1883: 181, 1891: 668, 1906: 710; Horion 1951; Jasilkowski 1906; Jazentkovsky 1912: 288; Joly 1976; Jones 1965: 145; Judeich & Nitsche 1895: 453; Kaltenbach 1874: 686; Kamp 1956b: 471; Karpinski 1925: 216, 1932b: 52, 1933b: 24, 1948b: 229; Karpinski & Strawinski 1948: 154; Kemner 1919: 170; Kersten 1933: 77; Kestercanek 1881a: 12; Kiefer et al. 1942: 528; Klefbeck & Sjoberg 1960: 231; Kleine 1912a: 263, 1912b: 162, 1913a: 34, 1914b:

248, 1934a: 126; Kloft & Hinks 1945: 218; Koca 1905: 191; Koltze 1901: 152; Koschitsky 1900: 83; Kotula 1873b: 79; Kraatz 1869: 59; Krol 1877: 34; Kurir 1947c: 8; Kvamme 1985: 50; Lacordaire 1866: 358; Langhoffer 1915c: 157; Larroche & Torossian 1971; Lentz 1857: 137; Lindemann 1884b: 263; Lokaj 1868: 63; Lomnicki 1886a: 240, 1913b: 148; Lucht 1987: 276; Luigioni 1929: 994; Marcu 1927b: 425; Matthew & Fowler 1883: 42; Mequignon 1936: 15; Munro 1916: 275–281, 1917: 123–158, 1920: 1–35, 1921: 87; Munster 1928: 289; Murray 1853: 61; Novak, P. 1952: 413, 1964; Nunberg 1928b: 88, 1954: 20; Nusslin 1898: 277; Oliveira 1887: 326; Pacher 1865: 151; Perris 1876a: 253, 1877b: 413; Pfeffer 1928b: 9, 1931b: 74, 1933: 3–54, 1947e: 14, 1984: 277, 1989a: 40; Pierce, W. D. 1917: 74; Pittioni 1943: 175; Pomerantzev 1907b: 492; Poppius 1900: 107; Postner 1974: 394; Rapp 1934: 724; Ratzeburg 1837: 137, 179, 1839: 166, 219; Redtenbacher 1858: 825, 1874: 367; Reitter 1869b: 153, 1894a: 62, 1916: 284; Revy & Siroki 1942: 82; Roubal 1941: 260; Rye 1865: 82; Sahlberg 1900: 104; Sainte-Claire & Mequignon 1938: 444; Schaschl 1854: 132; Schaufuss 1915: 1226; Schaum 1859: 95, 1862: 100; Schedl 1965h: 111, 1967c: 74, 1968c, 1971d: 428, 1980a: 10, 1981b: 50; Schilsky 1909: 187; Schneider & Leder 1977: 54; Schwerdtfeger 1981: 194; Sedlaczek 1921: 334–339; Seidlitz 1872: 391, 1891a: 558, 1891b: 604; Sharp 1920: 205; Sharp & Fowler 1873: 34; Stark 1926a: 333, 1926b: 102, 1952: 216; Stein 1868: 113; Stein & Weise 1877: 163; Stephens 1824a: 147, 1830: 364, 1839: 209; Stierlin 1898: 431; Stierlin & Gautard 1871: 291, 1906: 205; Strauch 1861: 123; Sturm 1826: 156, 1843: 228; Thomson 1865: 349; Tragardh 1920, 1923, 1929, 1935; Tredl 1907: 9; Tschorbadjiev 1929: 163; Villa & Villa 1833: 26; Wachtl 1870: 259; Wanka 1908: 231, 1915: 213; Westhoff 1882: 236; Wichmann 1927a: 61; Wiepken 1883: 89; Wiren 1962: 152; Zoufal 1920: 21. (**tx**) Acatay 1943: 62; Acloque 1896; Bach 1854; Balachowsky 1949a: 132; Bedel 1888b; Bertolini 1872; Borthwick 1981: 47; Brancsik 1871; Carpentier & Delaby 1908; Chapuis 1869: 19, 1873: 224; Charvat 1950; Chorbadzhievo 1924d; Csiki 1909; Doebner 1860; Donisthorpe 1931: 121; Duffy 1953; Eggers 1923b; Eichhoff 1864b: 46, 1881a: 36, 89, 1883a: 101, 122; Endrodi 1957a, 1957b; Erichson 1836: 47, 51; Escherich 1923b: 481, 619–622; Escherich & Escherich 1897; Everts 1903: 752; Fauvel 1889; Ferrant 1911; Fleischer 1905, 1927; Formanek 1907: 28; Fuchs 1912a; Gabler 1955; Gemminger & Harold 1872: 2669; Grune 1979: 51; Gyllenhal 1813: 142, 1827: 618; Hagedorn 1910a: 45; Hansen, V. 1955, 1956, 1964: 458; Henschel 1876d: 86, 240; Herbst 1793: 111; Hopkins 1915c: 221; Iablokoff-Khnzorian 1961: 105; Jacquelin du Val & Fairmaire 1868: 99; Joly 1976; Judeich & Nitsche 1895: 453; Karpinski & Strawinski 1948: 154; Koch 1910: 18, 1913: 22; Kugelann 1794: 524; Kuhnt 1913: 1053; Lacordaire 1866: 358; Lekander 1965: 1917; Letzner 1891: 372; Leunis 1886: 178; Lindemann 1875: 196–252; Lucas 1920: 341; Lucht 1987: 276; Luigioni 1928: 994; Murayama 1939: 135; Nunberg 1954: 20; Panzer 1775a: 287; Perris 1877a: 413; Pfeffer 1932b: 15, 1941b: 2, 1944b: 102, 1947e: 14, 1955a: 16, 1989a: 40; Portevin 1935: 321; Postner 1974: 394; Quaschik 1953: 35; Ratzeburg 1837: 137, 179, 1839: 166, 219, 1876: 66; Redtenbacher 1849a: 365, 1849b: 27, 1858: 825, 1874: 367; Reitter 1894a: 62, 1913a: 53, 1916: 284; Rey 1892b: 30; Sahlberg 1836: 137; Schedl 1934f: 1636, 1952f: 87, 1957b: 149, 1959n:380–381, 1968c, 1980a: 10, 1981b: 50; Scherb 1971; Schimitschek 1955c: 79; Seidlitz 1872: 391, 1891a: 558, 1891b: 604; Spessivtsev 1913a: 64–67, 1922a: 462, 490, 1931: 26, 1938: 159–162; Stark 1952: 216; Stephens 1829a: 147, 1829b: 12, 1830: 364, 1839: 209; Stierlin 1898: 431; Strohmeyer 1914e: 8; Taschenberg 1880: 210; Thomson 1865: 349; Tsai & Li 1959: 85. (**ms**) Escherich 1932b; Hartig 1834: 412, 413; Heinemann 1908a; Henschel 1880b: 257; Kirsten 1988; Lucas 1920: 341; Ratzeburg 1871b: 400; Ritter 1929: 554; Wichmann 1927: 61, 1961: 336.

***angusticollis* Eggers** 1929c: 9. Holotype, sex?; Wladimir (Wolhynien), USSR; IZL, Leningrad.
Distribution: Europe (W US$R).
Hosts: *Picea* sp.
Notes: (3) Schedl 1979c: 20 (lectotype designation invalid). A report of this species from Belgium requires confirmation.
References: (**ds**) Kleine 1934a: 126; Leclercq 1971; Stark 1952: 219; Winter, T. G. 1983: 14. (**tx**) Eggers 1929c: 9; Schedl 1934f: 1636, 1979c: 20; Sokanovskii 1958: 38; Stark 1952: 219.

***asperatus* Wood** 1975a: 24. Holotype ♀; New Mexico [USA]; Wood Collection.
Distribution: North America (Coahuila in Mexico/ Arizona, New Mexico in USA).
Hosts: Presumably *Pinus* sp., *Pseudotsuga flahuatii*.
References: (**ds**) Atkinson & Equihua 1988: 90; Wood, S. L. 1982b: 104. (**tx**) McNamara 1984: 753; Wood, S. L. 1975a: 24, 1982b: 104.

***ater* (Paykull)** 1800: 153 (*Bostrichus*). Lectotype ♀; England: Surrey-Bramshill; not located, designated by Lekander 1965a: 185.
Figures: Stark 1952: 212 (adult).
Distribution: Africa (Azores Islands), Asia (Fujian, "Manchuria" [Heilongjiang?] in China/ Japan/ Korea/ Turkey/ E USSR), Australia (introduced), Europe (Austria/ Belgium/ Bulgaria/ Denmark/ England/ Finland, France/ Germany/ Greece/ Italy/ Netherlands/ Norway/ Poland/ Portugal/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia),

New Zealand (introduced), South America (introduced to Chile).
Hosts: *Pinus* spp., *Picea* spp., uncommon in *Abies* spp., *Taxus baccata*, *Pseudotsuga menziesii*.
Notes: (3) Stephens 1829a: 147 (*Ips boleti* Marsham, nomen nudum, *I. niger* Marsham, nomen nudum, synonymy).
References: (**ay**) Beaver 1970: 198–206; Chararas 1956a, 1971b; Clark, A. F. 1932: 1–20; Escherich 1923b: 458, 480; Feytaud 1950a; Francke-Grosmann 1966; Fuchs 1912a; Grocholski, Michalski, & Nowak 1977; Grocholski et al. 1978; Marcu 1933a: 36; Munro 1917b: 123; Nunberg 1928a: 140; Nusslin 1912c: 275; Scherb 1971; Schroder 1901: 461, 1902: 85; Sedlaczek 1902b: 244; Wichmann 1912a: 9–10. (**bv**) Annila 1971: 12; Barr, B. A. 1969: 641; Borden & Wood 1966: 253; Chararas 1971b; Grune 1979: 47; Hosking 1977; Naumann-Etienne 1978a; Nuorteva 1956c: 22; Perttunen 1957: 102; Rudinsky & Zethner-Moller 1967: 912; Wichmann 1912a: 9, 1953a: 107; Wood, D. L. & Bushing 1963: 1069. (**cn**) Adams 1950; Anonymous 1921p: 1–4, 1939f, 1945e: 1, 1946i: 1–2, 1977r, 1979p, 1979q, 1982h, 1982i; Bain 1973a; Barbey 1925: 203; Bednall 1960: 12; Besceli 1963; Bevan 1966; Block 1906: 7; Boden 1903; Boomsma & Adams 1943; Brakman 1967; Browne 1968: 342; Butovitsch & Spaak 1939; Chararas 1961c: 93; Chorbadzhievo 1929; Ciesla 1988; Clark 1932a, 1932b; Collinge 1915: 789–791; Doom 1949; Dowding 1974; Dugdale 1965b; Eckstein 1915, 1926: 525; Egorov 1958: 1492; Elgstrand 1921: 225–229; Elton 1946, 1947; Escherich 1917, 1923b: 458, 480, 1930a; Espanol 1964a; Esterberg 1959; Faulds 1989; Feytaud 1950a; Fisher 1937c; Gabler 1955; Grandi 1951; Green, F. G. 1923; Gurev 1928: 144; Hanson, H. S. 1937, 1940a, 1943, 1952; Hartig 1861: 324, 1877: 190; Hess 1880, 1898: 380, 1907: 263; Hess & Beck 1914: 249, 1927: 303; Horn 1937: 271; Hosking 1977; Hrubik 1973; Inouye 1949b; Jacentkovsky 1933: 271; Joly 1976; Judeich & Nitsche 1895: 447, 453; Kangas 1937; Kauschinger 1893: 150; Keller 1903b: 52; Kholodkovskii 1912: 278, 303; Kobakhidze 1960: 1853; Koch 1913: 29; Koppen 1882: 236, 243; Laidlaw 1947: 56; Lekander 1955b: 17; Lekander, M. 1951: 51; Lohrenz 1907: 40; Lonshehakov & Lur'e 1960; Luitjes 1958: 211; Mamaev 1929: 134–142; Marcu 1926c: 62; Mathiesen 1952: 285; Mathiesen-Kaarik 1953: 6, 21; Miller, D., & Clark 1935: 302, 1935b: 149–154; Milligan 1978; Minko 1958, 1961: 5,12, 1962; Moore, K. M. 1962b, 1963: 71; Muller 1912: 185; Munro 1917a: 25, 1922: 136; Nelson 1931; Nestertschuk 1930: 176; Neumann & Marks 1976: 93; Nusslin 1913: 205; Pfeffer 1933: 43, 1948d: 235; Pierce, W. D. 1917: 74; Poloshenzew 1926; Pospelow 1924; Rawlings 1957: 11, 1958: 243; Reisseneger 1889: 299; Rhumbler 1922: 279, 1927: 291; Rodzianko 1915: 1–15; Saalas 1949: 366, 341; Schimitschek 1937c: 48, 1938b: 114, 1955a: 39, 41, 1955c: 78, 1961a: 154; Schmidt 1881: 41; Schoyen 1914: 448; Schuster 1918: 102; Schwappach et al. 1929: 186; Schwerdtfeger 1944a: 183, 1950b: 44, 1957a: 189; Sedlaczek 1921: 339; Sinreich 1961: 166; Swan 1942: 86–90; Sylven 1920: 1–19; Thaler 1898: 389, 1902: 278, 1903: 400; Tragardh 1917: 28, 1920c: 1–6, 1927c: 76, 1938a: 11, 1942: 465; Villasenor 1966; Wachtl 1883b: 319, 1901: 381; Weber, H. 1926: 577; Wichmann 1927b: 349; Wolff & Krausse 1922: 84; Wulker 1923: 435, 1924: 1–20, 1929: 289; Xambeu 1897: 50; Zarco 1964a: 254; Zethner-Moller & Rudinsky 1967: 497; Zetterstedt 1828: 343, 1840: 191; Zinovjev 1955: 187; Zondag 1965b, 1966, 1968, 1982. (**ec**) Apfelbeck 1916b; Balazy 1965a; Balazy & Michalski 1960; Barbey 1927; Brammanis 1940; Brimblecombe 1952; Cameron 1940; Chararas 1959d, 1964a, 1964b; Clark 1936; Cooreman 1963: 45; Crooke & Kirklund 1956: 135–145; Dale, P. S. 1964, 1967; Domanski 1983; Dowding 1974; Elton et al. 1964; Faulds 1989; Filipascu 1960; Francke-Grosmann 1966c; Fuchs 1914b, 1929a, 1937; Galoux 1947b; Gauss 1954a: 423; Gillanders 1906; Gyorfi 1941b; Hirschmann & Wisniewski 1982, 1983; Hosking 1977; Jakaitis & Valenta 1976: 20; Kakuliya & Shalibashvili 1976a; Kangas 1937; Kaya 1984; Kharitonov 1924: 199–204; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1980a, 1980b, 1983; Kleine 1908c: 181, 1909a: 44, 78; Kobakhidze 1960: 1853; Kostenko 1929; Kostin 1964: 106; Leatherdale 1970: 424, 429; Lovendal 1890a: 130; MacGillavry 1906: 27; Mahunka 1968; Majewski & Wisniewski 1978a: 8–10; Mathiesen 1952: 285; Mathiesen-Kaarik 1953: 6, 21, 1960; Michalski & Ratajczak 1989; Miller, D. & Clark 1935: 302; Nauman-Etienne 1978a; Novak, P. 1952: 413; Nuorteva 1956a: 17, 1967a, 1968a, 1970, 1971; Nusslin 1927: 291; Okolow 1963; Palmen 1944: 60, 1946: 194; Perris 1852: 497, 1856a: 241; Pfeffer 1923a: 330, 1928: 2, 1933: 43; Poinar 1975: 157; Ratzeburg 1869a: 59; Rawlings & Wilson 1949: 28; Rennerfelt 1951: 122; Roubal 1934a: 86; Ruhm 1955d: 72, 1956b: 3, 1957: 351, 1958: 295, 1969; Saalas 1917a: 18, 1928: 651, 1949: 341, 366; Scheibelreiter 1976; Schimitschek 1941b: 59, 1955a: 39, 41; Schuster 1918: 102; Schwerdtfeger 1944a: 183, 1950b: 44, 1957a: 189; Sedlaczek 1900: 503, 1908: 52, 1935a: 163; Stammer 1933: 152; Stark 1925b: 80; Stora 1938: 20; Thompson, W. R. & Simmonds 1964: 83–84, 1965: 21; Vitzthum 1923: 107; Wallace 1953: 164; Wiackowski 1957a: 43; Wichmann 1953a: 107, 1955a: 92, 1956: 60; Wisniewski 1979b, 1979c: 5, 1980; Woodring & Moser 1970; Zondag 1976b, 1979; Zondag, Bain, & Faulds 1976. (**hb**) Alkan 1946: 142; Altum 1881a, 1881c: 268, 1887a, 1887d, 1888a, 1889c; Anonymous 1921p: 1,

1946i: 1–2; Apfelbeck 1916b, 1917; Aullo 1918: 163–171; Baeta Neves & Goes 1944; Barbey 1901: 10, 18, 42, 1925: 203; Bargmann 1906; Beffa 1961; Besceli 1963; Binzer 1881a; Boas 1923: 320; Boden 1903; Boomsma & Adams 1943; Brakman 1967; Browne 1968: 342; Budge 1949; Budkov 1897; Bukowsky 1930; Champion 1917: 173–174; Chapuis 1869: 19, 1873: 227; Chararas 1962c: 299, 1964a; Charvat 1950; Chorbadzhievo 1929; Clark, A. F. 1932a, 1932b; Dallimore & Munro 1922: 189–193; Dombrowski 1887; Eckstein 1889, 1897, 1915, 1926: 575, 1936; Eichhoff 1881a: 35, 76, 1881d: 435, 1883d: 676, 1883e: 50; Elton et al. 1964; Escherich 1923b: 458, 480; Evans 1952: 141; Everts 1903: 751; Feytaud 1950a; Florov 1949: 76; Fuchs 1904a, 1911b; Gabler 1955; Gillanders 1906, 1908; Gornostaev 1916: 311; Grandi 1951; Gyorfi 1957; Hadlington 1951a; Hagedorn 1903a; Hartig 1861: 324, 1877: 190; Henschel 1876a: 87, 240, 1880b: 257, 1895a: 134; Hess 1880, 1898: 380, 1907: 263; Hess & Beck 1914: 249, 1927: 303; Hickin 1963; Holmgren 1867: 113, 120; Hopkins 1915c: 221; Hufnagl & Puzyr 1951: 104; Imms 1925: 509; Jaursch 1892: 21; Joly 1976; Judeich & Nitsche 1895: 447, 453; Karpinski 1933b: 24; Karpinski & Strawinski 1948: 154; Kauschinger 1883: 110, 1893: 150; Kholodkovski 1912: 278, 303; Knoche 1905: 354; Knotek 1894a: 553; Kostin 1960: 13; Lengerken 1939: 61, 1954: 82; Lohrenz 1907: 40; Loos 1913: 405; Louzil 1961: 40; Lovendal 1890a: 130; Lunardoni & Leonardi 1889: 420; MacGillavry 1906: 27; Miller, D. & Clark 1935: 302; Milligan 1978; Munro 1916a: 275, 1916b: 119, 1917a: 25, 1917b: 123–158, 1926: 55; Naumann-Etienne 1978a; Nunberg 1929: 100; Nuorteva 1956c: 22, 1967a, 1968a, 1970; Nusslin 1898: 276, 1906b: 16, 1913: 205, 1927: 291; Palm 1955d: 135; Perris 1852: 497, 1856a: 241; Petrenko 1966; Pfeffer 1941b: 2; Postner 1974: 393; Ratzeburg 1837: 179, 1839: 159, 219; Rhumbler 1922: 279, 1927: 291; Rimski-Korsakov et al. 1949: 297; Rupertsberger 1879: 231, 1880: 225; Saalas 1913a: 68, 79, 1949: 341, 366; Schmidt 1881: 41; Schnaider 1954: 173; Schwerdtfeger 1944a: 183, 1957a: 189, 1981: 194; Schwappach et al. 1929; Sedlaczek 1900: 503, 1921: 339, 1935a: 163; Simmel 1928: 154; Spessivtsev 1913a: 66, 1928a: 223; Stark 1926a: 332, 1952: 212; Swann 1942: 86; Taschenberg 1880: 210; Tragardh 1914: 82, 1927c: 76, 1929a: 311, 1930c: 470, 1939b: 144, 194; Tschorbadjiev 1929: 163; Wachtl 1901: 381; Weber, H. 1926: 577; Wichmann 1927b: 349; Wolff & Krausse 1922: 84; Zethner-Moller & Rudinsky 1967: 898. (**ds**) Acloque 1896; Alfken 1924: 405; Alma & Van Boven 1976; Ammann & Knabl 1913, 1923; Andersch 1851; Anonymous 1960: 319, 1977r, 1979p; Audras & Schaefer 1957; Baeta Neves & Goes 1944; Bain 1974: 15; Balazy & Michalski 1960; Barthe 1896; Bau 1888; Bednall 1960: 12; Bejer-Petersen & Jorum 1977: 15; Bielz 1851, 1887; Binaghi 1967; Blair 1949; Blanchere & Robert 1889; Boas 1923: 320; Borchert 1951; Brakman 1966b: 204, 1967; Brancsik 1871, 1906; Bright 1987a: 2; Brimblecombe 1953: 5; Browne 1968: 342; Bruggemann 1878; Brundin 1934; Budkov 1897; Bukowsky 1930; Buresh & Lazarov 1956; Butovitsch & Heqvist 1947; Calwer 1884, 1893; Carpentier & Delaby 1908; Cecconi 1924; Chadwick & Nikitin 1968; Chapuis 1869: 19, 1873: 227; Chapuis & Candeze 1853; Chararas 1962c: 299, 1964a; Charvat 1950; Cho 1952; Choo 1983: 57; Choo & Woo 1985: 164; Chorbadzhievo 1924d, 1929; Chrystal 1937; Ciesla 1988; Clark 1932a, 1932b; Crotch 1863; Csiki 1942c; Dallimore & Munro 1922; Debatisse 1945; Dejean 1821, 1825, 1837; Doom 1949; Duftschmidt 1825; Dugdale 1965b; Eckstein & Butovitsch 1931; Eder 1934; Eggers 1904; Elton 1946, 1947; Endrodi 1958b; Ericson & Sandin 1893; Escalera 1919; Escherich 1923b: 458, 480, 1930a, 1932b; Esterberg 1928, 1959; Evans 1952: 141; Eyquem 1891; Favre 1890; Forster 1849; Fowler 1891; Fricken 1889: 275; Fuchs 1904a, 1905a, 1919: 252; Ganglbauer 1904; Gaubil 1849: 128; Gaunitz 1928: 92; Georghiou 1977: 73; Gobang 1870: 133; Gornostaev 1917; Gozis 1875: 79; Gredler 1866: 368; Grill 1895: 307; Grune 1979: 47; Gyllenhal 1827: 618; Gyorfi 1941b; Hagedorn Havelka 1945; Heinemann 1908a; Hellen 1928: 1903a, 1910d: 8; Hansen, V. 1939, 1956, 1964: 458;99, 1947; Helliesen 1916: 83; Henschel 1895a: 134; Heyden 1876: 296, 1881: 177, 1893: 177; Heyden, Reitter, & Weise 1883: 180, 1891: 667, 1906: 710; Hickin 1963; Holdhaus & Deubel 1910: 173; Holmgren 1867: 113, 120; Horion 1951; Hosking 1977; Ihssen 1939: 336; Illiger 1805: 130; Inouye 1949b; Jacentkovsky 1933: 271; Jamnicky 1960a; Janovsky & Tegshzhargal 1985: 406; Jasilkowski 1906; Jazentkowsky 1912: 287; Jenistea 1933: 123, 1934: 61; Johnson & Halbert 1902: 818; Joly 1976; Judeich & Nitsche 1895: 447, 453; Kaltenbach 1874: 686; Karpinski 1925: 216, 1926: 82, 1931: 23, 1933a: 290, 1933b: 24; Karpinski & Strawinski 1948: 154; Keler 1902: 67, 1925b: 271; Kersten 1933: 73; Kestercanek 1881a: 12; Klefbeck & Sjoberg 1960: 230; Kleine 1912a: 262, 264, 267, 1912b: 162, 1913a: 34, 1914b: 249, 251, 1934a: 126; Kloft & Hinks 1945: 218; Knotek 1892a: 32, 1894a: 553; Ko 1969: 276; Koltze 1901: 151; Koppen 1882: 236, 243; Koschitsky 1900: 83; Kostenko 1929; Kotula 1873b: 79; Kraatz 1869: 59; Krivolutskaya 1983; Krol 1877: 34; Kurir 1947c: 8; Kuschel 1972; Lacordaire 1866: 358; Langhoffer 1915c: 157; Larroche & Torossian 1971; Leatherdale 1970: 424, 429; Leclercq 1971; Lekander 1955b: 17; Lentz 1857: 137; Liegel 1886: 43; Lindberg & Saris 1952: 59; Lindemann 1884b: 263; Linnaniemi 1935: 45; Lokaj 1868: 63; Lomnicki 1886a: 240, 1913b: 148; Loos 1913:

405; Lovendal 1890c: 210; Lucht 1987: 276; Luigioni 1929: 994; Luna de Carvalho 1950: 15; Lunardoni & Leonardi 1889: 420; Lundblad 1950c: 115; Mahler 1987: 232; Mandl 1931: 25; Marcu 1926c: 62; Matthews & Fowler 1883: 41; Mequignon 1936: 15, 24; Milligan 1978; Minko 1961: 512; Moore, K. M. 1963: 71; Munro 1916a: 275, 1922: 136; Munster 1922a: 155; Murayama 1929b: 2, 1929e: 41, 1930a: 7, 1930b: 7, 1937b: 375; Murray 1853: 60; Negru 1966b: 399, 1968a: 454; Neumann 1979; Nobuchi 1985c: 3; Novak, P. 1952: 413; Nunberg 1928b: 88, 100, 1954: 20; Nusslin 1898: 276; Orest 1926c: 62; Oswald 1976; Pacher 1853: 49, 1865: 151; Palm 1955d: 135, 1957: 47, 1962a: 183–184; Palmen 1944: 60, 1946: 194; Perris 1876a: 253, 1877a: 413; Pfeffer 1928b: 2, 1931b: 74, 1935: 159, 1947c: 14, 1947d: 127, 1947e: 14, 1984: 277, 1989a: 39; Pierce, W. D. 1917: 74; Pittioni 1943: 175; Platonoff 1940: 11, 1943: 141; Pomerantzev 1907b: 492; Poppius 1900: 107; Postner 1974: 393; Rapp 1934: 723; Ratzeburg 1837: 179, 1839: 159, 219; Rawlings 1948: 413, 1957: 11; Redtenbacher 1858: 826, 1874: 367; Reitter 1869b: 152, 1894a: 60, 1916: 283; Rimski-Korsakov et al. 1949: 297; Roubal 1941: 260; Saalas 1913a: 68, 79, 1917a: 18, 1931: 70; Sahlberg 1900: 104; Sainte-Claire 1914: 471; Sainte-Claire & Mequignon 1938: 444; Schaschl 1854: 132; Schaufuss 1915: 1226; Schaum 1859: 95, 1862: 100; Schedl 1960e: 171, 1967c: 74, 1971d: 430, 1971f: 146, 1980a: 10, 1981b: 49; Scheerpeltz & Winkler 1930: 256; Schiodte 1873: 99; Schilsky 1909: 187; Schimitschek 1938b: 114; Schneider & Leder 1977: 54; Schwerdtfeger 1981: 194; Seidlitz 1872: 390, 1875: 281, 1891a: 558, 1891b: 603; Sharp & Fowler 1893: 34; Stark 1926a: 332, 1926b: 101, 1926j: 124, 1931a: 23, 1952: 212; Stein 1868: 113; Stein & Weise 1877: 163; Stenius 1936: 3, 18; Stephens 1829a: 147, 1830: 364, 1839: 209; Stierlin 1898: 431; Stierlin & Gautard 1871: 290, 1906: 205; Strand 1946: 597, 1953: 59–63; Strand & Hanssen 1935: 70; Strauch 1861: 123; Sturm 1826: 156, 1843: 228; Thomson 1859: 146, 1865: 348, 1868: 215; Tragardh 1914: 92, 1939b: 144, 194; Tredl 1907: 9; Tschorbadjiev 1929: 163; Ulanowski 1884: 6; Verdcourt 1952: 80; Villa & Villa 1833: 26; Villasenor 1966; Wanka 1908: 231; Westhoff 1882: 236; Wichmann 1927a: 60–61, 1955a: 92; Wiepken 1883: 59; Winter, T. G. 1983: 45; Wiren 1945: 43, 1962: 147; Yanovskii 1989: 64; Yanovskii & Tegshzhargal 1984: 406; Zivojinovic 1960; Zondag 1982; Zoufal 1920: 20. (**tx**) Acloque 1896; Alkan 1946: 142; Altman 1844; Bach 1854; Bain 1977a: 4; Balachowsky 1949a: 128; Barbey 1901: 10, 18, 42; Beaver 1970a; Bedel 1888b: 388, 390; Beffa 1964; Bertolini 1872; Blackman 1941; Blair 1949: 69; Boas 1923: 320; Brancsik 1871; Calwer 1858; Carne et al. 1980; Carpentier & Delaby 1908; Castelman 1840; Ceballos 1945; Chapuis 1869: 19, 1873: 227; Chapuis & Candeze 1853; Chararas 1962c: 302; Charvat 1950; Chorbadzhievo 1924d; Clark 1932b; Dejean 1821, 1825; Doebner 1860; Dombrowski 1887; Duffy 1953; Duftschmidt 1825; Eggers 1929e: 43, 1933f: 3–4; Eichhoff 1864b: 46, 1881a: 35, 76, 1883a: 100, 121; Endrodi 1927a: 307–308, 413, 1957b; Erichson 1836: 47; Escherich 1923b: 48, 458; Escherich & Escherich 1897; Everts 1903: 751; Fabricius 1792: 368, 1801: 395; Fairmaire 1964: 21–27, 31; Ferrant 1911; Fleischer 1905, 1927; Formanek 1907: 28; Fricken 1889: 275; Fuchs 1912a; Gabler 1955; Gay 1955: 12; Gemminger & Harold 1872: 2669; Gillanders 1908; Grocholski, Michalski, & Nowak 1977: 709; Grune 1979: 46–47; Gyllenhal 1813: 343, 1827: 618; Hagedorn 1910a: 45; Hansen, V. 1939, 1955, 1956, 1964: 458; Henry 1892: 14–15; Henschel 1876a: 87, 240, 1895a: 134; Herbst 1793: 121; Heyden 1893: 177; Hopkins 1914: 122; Iablokoff-Khnzorian 1961: 105; Illiger 1907: 321; Imms 1925: 509; Jablonsky 1785: 121; Jacquelin du Val & Fairmaire 1868: 99; Joly 1976, 1976b: fig. 138; Judeich & Nitsche 1895: 447, 453; Karpinski & Strawinski 1948: 154; Knotek 1892a: 32; Koch 1913: 29; Kuhnt 1913: 1053; Lacordaire 1866: 358; Lekander 1965a: 184–195; Letzner 1891: 372; Leunis 1886: 178; Lohse 1984: 151; Louzil 1961: 105; Lovendal 1889b: 30, 1890c: 210, 1898: 106; Lucht 1987: 276; Luigioni 1929: 994; Lunardoni & Leonardi 1889: 420; Milligan 1978: fig. 1, 3; Munro 1916a: 275–281, 1916b: 119, 1917b: 123; Murayama 1930b: 7, 11, 30, 1937b: 375; Negru 1966b: 399; Nunberg 1928a: 140, 1954: 20; Nuorteva 1971: 67; Nusslin 1912c: 275; Paiva 1861b; Palm 1965: 135; Paykull 1800: 153; Perris 1877a: 413; Pfeffer 1932b: 15, 1941b: 2, 1944b: 100, 1947c: 14, 1955a: 112, 1989a: 39; Portevin 1935: 320; Postner 1974: 393; Quaschik 1953: 35; Ratzeburg 1837: 179, 1839: 159, 219; Redtenbacher 1849a: 365, 1849b: 27, 1858: 826, 1874: 367; Reitter 1894a: 60, 1913a: 52, 1916: 283; Rhumbler 1922: 279, 1927: 291; Rupertsberger 1879: 231, 1880: 225; Saalas 1913a: 68, 79, 1949: 341, 366; Sahlberg 1836: 138; Schedl 1934f: 1636, 1947a: 21, 1952f: 86, 1968c, 1980a: 10, 1981b: 49; Scherb 1971; Schimitschek 1937c: 48, 1955c: 78; Schlechtendal & Wunsche 1879: 124; Seidlitz 1872: 390, 1891a: 558, 1891b: 603; Sokanovskii 1954: 16, 1958: 38, 1960: 677; Spessivtsev 1913a: 66, 1922a: 461, 490, 1925a: 170, 1925b: 6, 1928: 221–250, 1931: 26–27; Stark 1952: 212; Stephens 1829a: 147, 1829b: 12, 1830: 364, 1839: 209; Stierlin 1898: 431; Strand 1953: 62; Strohmeyer 1914: 32; Swaine 1918a: 77; Swan 1943: 87; Taschenberg 1880: 210; Thomson 1859: 146, 1865: 348, 1868: 215; Tsai & Li 1959: 84; Westwood 1840: 39. (**ms**) Alma 1975; Anonymous 1960y:319; Brimblecombe 1952; Burton et al. 1968: 190; Chararas 1959d, 1971a: 853; Escherich 1932b;

Fuchs 1911b; Hartig 1834: 412–413; Heinemann 1908a; Henschel 1880b: 257, 1880c: 60; Lovendal 1890a: 130; Ratzeburg 1871b: 400; Ritter 1929: 554; Sedlaczek 1920: 125; Wichmann 1961: 336.

chloropus Duftschmidt 1825: 102 (*Hylesinus*). Syntypes, sex?; Europe; not located. Synonymy: Hagedorn 1910d: 8.

References: (**ds**) Dejean 1821, 1825, 1837; Duftschmidt 1825: 102; Hagedorn 1910d: 8; Illiger 1805: 130; Schilsky 1909: 187. (**tx**) Dejean 1821, 1825; Duftschmidt 1825: 102; Fabricius 1801: 394; Hagedorn 1910d: 8.

pinicola Bedel 1888b: 390. Syntypes, sex?; Europe; not located, replacement name for *ater* Paykull 1800. Synonymy: Balachowsky 1949a: 128.

References: (**ds**) Bedel 1888b: 390; Schilsky 1909: 187. (**tx**) Balachowsky 1949a: 128; Bedel 1888b: 390.

° ***aterites* Schedl** 1947a: 21. Holotype, sex?; fossil in Baltic amber; Geologisch-Palaeontologische Inst. Albertus Univ., Konigsberg

Distribution: Europe (fossil in Baltic amber).

References: (**ds**) Spahr 1981. (**tx**) Schedl 1947a: 16, 21.

***attenuatus* Erichson** 1836: 50. Syntypes, sex?; Germany; not located.

Figures: Pfeffer 1989a: pl. 3.

Distribution: Africa (Azores Islands), Asia ("Manchuria" [Heilongjiang?] in China/ Japan/ Korea/ Taiwan/ E USSR), Europe (Austria/ England/ Finland/ France/ Germany/ Greece/ Norway/ Poland/ Spain/ Sweden/ Switzerland/ W USSR).

Hosts: *Pinus* spp.

Notes: (3) Balachowsky 1949a: 130 (Ratzeburg's use of *opacus* was a misidentification of *attenuatus*).

References: (**ay**) Escherich 1923b: 480; Fuchs 1912a; Grocholski et al. 1978; Marcu 1933a: 37. (**bv**) Barr, B. A. 1969: 641; Grune 1970: 49. (**cn**) Anonymous 1946i: 1, 4, 1978w; Barbey 1925: 204; Block 1906: 7; Boden 1903; Browne 1968: 342; Eckstein 1926: 577; Escherich 1923b: 480; Espanol 1964a; Gabler 1955; Hanson 1937; Hess 1898: 380; Hess & Beck 1914: 249, 1927: 303; Joly 1976; Judeich & Nitsche 1895: 447, 453; Kauschinger 1893: 150; Nusslin 1913: 205; Pfeffer 1933: 43; Pierce, W. D. 1917: 69; Rhumbler 1922: 279, 1927: 291; Schimitschek 1955c: 79; Schuster 1918: 102; Schwerdtfeger 1950b: 44, 1957a: 189; Wachtl 1901: 381; Weber, H. 1926: 577; Wichmann 1927b: 352. (**ec**) Espanol 1964a; Gyorfi 1941b; Kleine 1908c: 181; Nosek 1959a: 118; Nusslin 1927: 291; Palmen 1944: 60; Perris 1852: 504, 1856a: 229; Pfeffer 1923a: 330, 1928b: 9, 1933: 43 1943b: 181; Poinar 1975: 158; Ruhm 1956b: 3, 1958: 295; Schuster 1918: 102; Schwerdtfeger 1950b: 44, 1957a: 189; Wiackowski 1957a: 43; Wichmann 1955a: 105. (**hb**) Altum 1881c: 268, 1887a, 1887d; Anonymous 1946i: 1, 4; Barbey 1901: 44, 1925: 204; Bargmann 1906; Boden 1903; Browne 1968: 342; Budge 1949; Chapuis 1869: 19, 1873: 227; Chararas 1962c: 305; Charvat 1950; Dombrowsky 1887; Eckstein 1889, 1897, 1926: 577; Eichhoff 1881a: 36, 87, 1881d: 435; Elton et al. 1964; Escherich 1923b: 480; Everts 1903: 752; Fuchs 1904a; Gabler 1955; Gyorfi 1957; Hagedorn 1903a; Henschel 1895a: 134; Hess 1898: 380; Hess & Beck 1914: 249, 1927: 303; Joly 1976; Judeich & Nitsche 1895: 447, 453; Karpinski & Strawinski 1948: 154; Kauschinger 1883: 110, 1893: 150; Kholodkovskii 1889: 267; Knoche 1905: 354; Knotek 1894a: 553; Lengerken 1939: 61; Marcu 1927b: 424; Munro 1926: 57; Niisima 1908b: 18; Nosek 1959a: 118; Nunberg 1929: 101; Nusslin 1898: 277, 1913: 205, 1927: 291; Palm 1947b: 44; Perris 1852: 504, 1856a: 229; Pfeffer 1941b: 2; Postner 1974: 394; Ratzeburg 1837: 180; Rhumbler 1922: 279, 1927: 291; Saalas 1913a: 69, 80; Schwerdtfeger 1957a: 189, 1981: 194; Spessivtsev 1913a: 67; Stark 1926a: 332, 1952: 215; Stebbing 1909b: 14; Wachtl 1901: 381; Weber 1926: 577; Wichmann 1927b: 352; Zethner-Moller & Rudinsky 1967: 898. (**ds**) Acloque 1896; Allen, A. 1951b; Anonymous 1978w; Audras & Schaefer 1957; Barthe 1896; Bau 1888; Bedel 1888b; Bielz 1887; Blanchere & Robert 1889; Blandford 1894c; Borchert 1951; Brakman 1966b: 204; Brancsik 1871; Bright 1987a: 2; Browne 1968: 342; Calwer 1884, 1893; Champion 1894; Chapuis 1869; Charvat 1950; Choo & Woo 1985: 164; Eggers 1904; Endrodi 1958b; Escalera 1919; Escherich 1923b: 480, 1932b; Eyquem 1891; Favre 1890; Fjellberg 1966: 154; Forster 1849: 440; Frey 1937; Fuchs 1904a; Gaubil 1849: 128; Gerhardt 1897; Gozis 1875: 79; Gredler 1866: 369; Grune 1979: 49; Gyorfi 1941b; Hagedorn 1903a, 1910d: 8; Hallett 1923b: 13–14; Hansen, V. 1939, 1956; Heinemann 1908a; Hellen 1921, 1947; Henschel 1895a: 134; Heyden 1876: 296; Heyden, Reitter, & Weise 1883: 181, 1891: 668; Horion 1951; Joly 1976; Judeich & Nitsche 1895: 447, 453; Kamp 1979; Karpinski 1925: 216, 1948a: 173; Karpinski & Strawinski 1948: 154; Kerston 1933: 77; Kestercanek 1881a: 12; Kiefer et al. 1942: 528; Klefbeck & Sjoberg 1960: 230–231; Kleine 1912a: 262, 267, 1912b: 162, 1913a: 34, 1914b: 254, 1934a: 126; Kloft & Hinks 1945: 218; Knotek 1892a: 33, 1894a: 553; Kolbe, W. 1916: 257; Koltze 1901: 152; Kotula 1873b: 79; Kraatz 1869: 59; Krol 1877: 34; Kurir 1947c: 8; Lacordaire 1866: 358; Langhoffer 1915c: 157; Leclercq 1971; Lekander 1965a: 184–195, 1965b: 197; Liegel 1886: 43; Lindemann 1884b: 263; Lokaj 1868: 63; Lomnicki 1886a: 240, 1913b: 148; Lucht 1987: 276; Luigioni 1929: 994; Marcu 1927b: 424; Mequignon 1936: 15, 32; Munro 1920b: 257, 1921: 87; Munster 1928: 288; Murayama 1936a: 122,

1940a: 231, 1942a: 53, 1951c: 3, 1953a: 5; Niisima 1908b: 18; Nobuchi 1966b: 13, 1985c: 4; Nunberg 1928b: 88, 102, 1954: 20; Nusslin 1898: 277; Pacher 1865: 151; Palm 1947a: 178, 1947b: 44; Palmen 1944: 60; Perris 1876a: 253, 1877a: 413; Pfeffer 1928b: 9, 1931b: 74, 1947d: 127, 1947e: 14, 1950b: 76, 1984: 277, 1989: 39; Pierce, W. D. 1917: 69; Pittioni 1943: 176; Postner 1974: 394; Ratzeburg 1837: 180; Redtenbacher 1849a: 367, 1858: 825; Reitter 1869b: 153, 1894a: 62, 1916: 284; Roubal 1941: 260; Saalas 1913a: 69, 80, 1931: 68; Sahlberg 1900: 104; Saint-Albin 1949: 2; Sainte-Claire 1914: 471; Sainte-Claire & Mequignon 1938: 444; Schaufuss 1915: 1226; Schaum 1859: 95, 1862: 100; Schedl 1967c: 74, 1971d: 428, 1980a: 11, 1981b: 50; Schilsky 1909: 187; Schwerdtfeger 1981: 194; Seidlitz 1872: 391, 1891a: 558, 1891b: 604; Sharp 1920: 205; Stark 1926a: 332, 1926b: 101, 1926j: 124, 1952: 215; Stein 1868: 113; Stein & Weise 1877: 163; Stierlin 1898: 431; Stierlin & Gautard 1871: 291, 1906: 205; Strauch 1861: 123; Tredl 1907: 9; Walker 1921: 153; Wanka 1908: 231, 1915: 213; Westhoff 1882: 236; Wichmann 1927a: 61, 1955a: 105; Wiepken 1883: 89; Winter, T. G. 1983; Wiren 1962: 152, 1963; Zoufal 1920: 21. (**tx**) Acloque 1896; Bach 1854; Balachowsky 1949a: 130; Barbey 1901: 44; Bedel 1888b; Bertolini 1872; Blandford 1894d; Brancsik 1871; Chapuis 1869: 19, 1873: 227; Charvat 1950; Doebner 1860; Dombrowski 1887; Donisthorpe 1931: 121–122; Duffy 1953; Eggers 1923b: 135–136; Eichhoff 1864b: 24, 1881a: 36, 87, 1883a: 100; Endrodi 1957a: 307; Erichson 1836: 50; Escherich 1923b: 480; Everts 1903: 752; Ferrant 1911; Fleischer 1927; Fuchs 1912a; Gabler 1955; Gemminger & Harold 1872: 2669; Grune 1979: 48–49; Hagedorn 1910a: 45; Hansen, V. 1955: 514, 1956; Henschel 1895a: 134; Iablokoff-Khnzorian 1961: 105; Joly 1976; Judeich & Nitsche 1895: 447, 453; Karpinski & Strawinski 1948: 154; Knotek 1892a: 33; Lacordaire 1866: 358; Letzner 1891: 372; Lucht 1987: 276; Luigioni 1929: 994; Murayama 1936a: 122–123, 1940a: 231, 1953a: 5, 1954b: 156; Nobuchi 1966b: 13; Nunberg 1954: 20; Perris 1877a: 413; Pfeffer 1932b: 15, 1933: 3–54, 1941b: 2, 1944b: 102, 1947e: 14, 1955a: 117, 1989: pl. 3; Portevin 1935: 321; Postner 1974: 394; Quaschik 1953: 35; Ratzeburg 1837: 180; Redtenbacher 1849a: 365, 1849b: 27, 1858: 825, 1874: 367; Reitter 1894a: 62, 1913a: 53, 1916: 284; Rey 1892b: 30; Rhumbler 1922: 279, 1927: 291; Saalas 1913a: 69, 80; Schedl 1934f: 1636, 1952f: 87, 1968c, 1979c: 31, 1980a: 11, 1981b: 50; Schimitschek 1955c: 79; Seidlitz 1872: 391, 1891a: 558, 1891b: 604; Spessivtsev 1913a: 67, 1922a: 462, 1931: 27; Stark 1952: 215; Stebbing 1909b: 14; Steirlin 1898: 431; Strohmeyer 1914e: 80. (**ms**) Eggers 1910b; Escherich 1932b; Heinemann 1908a; Ratzeburg 1871b: 40; Ritter 1929: 554

***brunneus* Erichson** 1836: 48. Syntypes, sex?; Germany; MNB, Berlin.

Figures: Pfeffer 1989a: pl. 3–4.

Distribution: Asia ("Manchuria" [Heilongjiang?] in China/ Himachal Pradesh, Uttar Pradesh in India/ Turkey/ E USSR), Europe (Austria/ Belgium/ Bulgaria/ Czechoslovakia/ Denmark/ England/ Germany/ Greece/ Norway/ Poland/ Scotland/ Sweden/ W USSR).

Hosts: *Pinus excelsa*, *P. koraiensis*, *P. sylvestris*, *Picea excelsa*, *P. ajanensis*, *P. obovata*, *Abies webbiana*.

Notes: (3) Beeson 1941 (1961: 287) (*himalabietis*, nomen nudum, no status). Hansen 1955: 170 (*pupillatus* Eggers, nomen nudum, synonymy). Schedl 1979c: 30 (citation of holotype invalid).

References: (**ay**) Beaver 1970a: 198–206; Grocholski, Michalski, & Nowak 1977; Marcu 1933a: 36; Zethner-Moller & Rudinsky 1967: 902. (**bv**) Barr, B. A. 1969: 641; Loyttyniemi, Heliovaara, & Repo 1988b; Nuorteva & Nuorteva 1968; Pulliainen 1973; Schroeder & Lindelow 1989. (**cn**) Bejer-Petersen 1959a; Brakman 1967; Browne 1968: 342; Ehnstrom 1985; Eidmann 1977; Fystro & Bakke 1962; Nuorteva & Nuorteva 1968. (**ec**) Bakke 1960: 313; Cooreman 1963: 45; Eidmann 1974b; Heqvist 1961; Hubenthal 1902: 291; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1980a, 1983; Kleine 1908c: 181; Lundberg 1984; Mathiesen-Kaarik 1960c; Nuorteva 1967a, 1971; Nuorteva & Laine 1968; Nuorteva & Nuorteva 1968; Palm 1958: 27; Pfeffer 1923a: 330, 1932a: 19, 1959: 5; Pulliainen 1973b; Wisniewski & Michalski 1984. (**hb**) Brakman 1967; Eichhoff 1881a: 35, 82; Eidman 1974b, 1977b; Fuchs 1904a; Gyorfi 1957; Henschel 1895a: 134; Karpinski & Strawinski 1948: 154; Nilssen 1984; Nuorteva 1967a; Palm 1955d: 135; Pfeffer 1941c: 5; Ratzeburg 1837: 180; Saalas 1913a: 69, 79. (**ds**) Allen, A. 1954; Ammann & Knabl 1923; Barthe 1896; Bejer-Petersen & Jorum 1977: 13; Bielz 1851, 1887; Bistrom 1978; Bistrom & Vaisanen 1988: 42; Blair 1949: 89; Blanchere & Robert 1889; Borchert 1951; Brakman 1966: 204, 1967; Browne 1968: 342; Calwer 1884, 1893; Chapuis 1869: 19, 1873: 227; Eidmann 1974b; Fjellberg 1966: 154; Fleischer et al. 1921a; Fuchs 1904a, 1905a; Gaubil 1849: 128; Gillerfors 1966; Gralicki & Konca 1978: 515; Hansen, V. 1939, 1956, 1971; Havelka 1945: 53; Hellen 1947; Henschel 1895a: 134; Heyden, Reitter, & Weise 1883: 180, 1891: 667; Horion 1951; Huhta et al. 1986; Jasilkowski 1906; Kaltenbach 1874: 686; Karpinski 1948a: 173; Karpinski & Strawinski 1948: 154; Klefbeck & Joberg 1960: 230; Kleine 1913a: 89; Kozikowsky 1921: 180; Kraatz 1869: 59; Lacordaire

1866: 358; Leclercq 1971; Lokaj 1868: 63; Lomnicki 1913b: 148; Luigioni 1929: 994; Lundberg 1974: 92, 1979: 31, 1981: 151; Micke 1915: 111; Negru 1966b: 399; Nunberg 1928b: 88, 101, 1954: 20; Nuorteva 1971: 67; Palm 1955d: 135, 1962a: 183–184, 1985; Pfeffer 1924b: 471, 1989a: 39; Poppius 1900: 107; Ratzeburg 1837: 180; Redtenbacher 1874: 367; Reitter 1869b: 153, 1894a: 61, 1916: 283; Roubal 1941: 260; Saalas 1913a: 69, 79; Sahlberg 1900: 104; Schaufuss 1915: 1227; Schaum 1859: 95, 1862: 100; Schedl 1980a: 11; Schilsky 1909: 187; Seidlitz 1891a: 558, 1891b: 603; Stein 1868: 113; Stein & Weise 1877: 163; Strand 1953: 61; Tredl 1907: 9; Wegelius 1960: 106; Wichmann 1924: 15; Winter, T. G. 1983: 51; Yanovskii 1989: 64. (**tx**) Bach 1854; Beaver 1970a; Bertolini 1872; Blair 1949: 89; Chapuis 1869: 19, 1873: 227; Doebner 1860; Duffy 1953; Eggers 1940h: 61; Eichhoff 1864b: 24, 1881a: 35, 82, 1883a: 100, 121; Endrodi 1957a: 413; Erichson 1836: 48; Fleischer 1927; Gemminger & Harold 1872: 2669; Grocholski, Michalski, & Nowak 1977; Hagedorn 1919d: 8; Hansen, V. 1955, 1956, 1964: 458; Henschel 1895a: 134; Karpinski & Strawinski 1948: 154; Lacordaire 1866: 358; Lekander 1965a: 184–195; Letzner 1891: 372; Lohse 1984: 151; Luigioni 1929: 994; Negru 1966b: 399; Nunberg 1954: 20; Nuorteva 1971: 67; Pfeffer 1932b: 15, 1941c: 5, 1944b: 101, 1955a: 114, 1989: pl. 3, 4; Portevin 1935: 320; Ratzeburg 1837: 180; Redtenbacher 1849a: 793, 852, 1849b: 27, 1874: 367; Reitter 1894a: 61, 1913a: 53, 1916: 283; Rey 1892b: 30; Saalas 1913a: 69, 79; Schedl 1934f: 1636, 1979c: 30, 1980a: 11; Seidlitz 1891a: 558, 1891b: 603; Strand 1953: 61; Wichmann 1924: 15, 1927: 60.

aterrimus Eggers 1933f: 3. Syntypes, sex?; Sibirien und Russland, auch aus Bulgarien; repository not indicated, now at NHMW, Wien (Schedl 1979c: 30). Synonymy: Pfeffer 1965: 64. References: (**cn**) Kurenzov 1935c: 189; Pfeffer 1948d: 235; Schimitschek 1944: 167, 1952c: 60. (**ec**) Schimitschek 1941a: 313. (**hb**) Kurenzov 1948b: 106, 1950d: 162; Schimitschek 1944: 167; Stark 1952: 213. (**ds**) Hansen, V. 1955: 173; Havelka 1945; Kadyrov 1989; Kurenzov 1935c: 189; Marikovskii 1956b: 73; Schedl 1941a: 42; Stark 1952: 213; Zinovjev 1955: 187. (**tx**) Eggers 1933f: 3, 1934b: 25; Kurenzov 1941a: 129, 1948b: 106; Pfeffer 1941a: 42, 1955a: 14, 1965: 64; Schedl 1941a: 42, 1979c: 30; Sokanovskii 1954: 16, 1958: 38; Stark 1952: 213. (**ms**) Klapperich 1945–48: 97.

***cunicularius* Erichson** 1836: 49. Syntypes, sex?; Harz, Germany; not located.

Figures: Pfeffer 1989a: pl. 3–4.

Distribution: Asia (Sichuan, Xinjiang, Yunnan in China/ Japan/ Sakhalin Island, E USSR), Europe (Austria/ Belgium/ Bulgaria/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Hungary/ Italy/ Norway/ Poland/ Sweden/ Switzerland/ W USSR).

Hosts: *Picea excelsa*, *P. obovata*, *P. jezoensis*, *Pinus sylvestris*, *P. koraiensis*, rare in *Larix europaea*.

Notes: (3) Ratzeburg 1839: 220 (cites *Hylesinus scabrifrons* St. as a synonym). Eggers 1940h: 61 (*subalpinus*, nomen nudum, synonymy by Hansen 1955: 172).

References: (**ay**) Eichelbaum 1903; Escherich 1923b: 458, 480; Francke-Grosmann 1959, 1966c; Fuchs 1912a; Hadorn 1933; Lekander 1959b: 49, 1959d: 92; Marcu 1933a: 37; Marcus 1930: 644; Munro 1917b: 123; Nusslin 1912c: 275; Scherb 1971; Sedlaczek 1902b: 244; Wichmann 1912a: 9–10. (**bv**) Annila 1975: 8–9; Barr, B. A. 1969: 641; Borodin 1968a; Grune 1979: 47; Naumann-Etienne 1978a; Nuorteva 1956c: 17; Nuorteva & Nuorteva 1968; Prell 1926: 68; Schroeder & Lindelow 1989; Wichmann 1912a: 7, 1953a: 107. (**cn**) Barbey 1925: 37; Bejer-Petersen 1959a; Browne 1968: 343; Chararas 1961c: 93; Chorbadzhievo 1929; Eckstein 1926: 577; Ehnstrom et al. 1974; Eidmann 1977b; Escherich 1923b: 458, 480, 1936; Esterberg 1959; Fleischer 1877a; Francke-Grosmann 1954a; Gabler 1955; Georgescu et al. 1957: 357, 401, 471; Grandi 1951; Hansen, V. 1937; Hartig 1877: 196; Hess 1880, 1898: 378; Hess & Beck 1914: 249; Judeich & Nitsche 1895: 447, 453; Juutinen 1960: 23; Kalandra 1944; Kalandra & Pfeffer 1940; Kauschinger 1893: 150; Kleiber 1930: 183; Kobakhidze 1960: 1853; Koch 1910: 18; Lekander 1954b: 11; Lekander, M. 1951: 51; Lohrenz 1907: 41; Maksymov 1950: 554; Marcu 1926c: 62; Marker-Kohlfurt 1896: 84; Mathiesen-Kaarik 1953: 6, 23; Mitscherlich et al. 1950a: 128, 1950b: 196; Muller 1912: 185; Munro 1917a: 25; Nestertschuk 1930: 176; Nilssen 1978a; Nosek 1951: 106, 1952b: 98; Novak, V. 1967; Novak, V., Hrozinka, & Stary 1976: 32; Nuorteva & Nuorteva 1968; Nusslin 1883: 152, 1913: 205; Ohnesorge 1955: 279; Pfeffer 1948a: 800, 1950c: 2; Pierce, W. D. 1917: 81; Rhumbler 1922: 279, 1927: 291; Rossem 1957: 60; Saalas 1949: 342, 367; Schimitschek 1937c: 49, 1955a: 35, 1955c: 79; Schmidt 1881: 42; Schneeberg 1925: 495; Schwappach et al. 1929: 186; Schwarz 1938b: 144; Schwerdtfeger 1944a: 183, 1950b: 60, 1957a: 189; Scott, J. M. & King 1973: 108; Sedlaczek 1921: 338; Severin 1902a: 81; Strohmeyer 1956: 22; Thaler 1902: 278, 1903: 400; Titova 1966; Tragardh 1927c: 76, 1936a: 147, 1938a: 11, 1942: 465; Tragardh & Butovitsch 1936: 578; Turcek 1967: 15, 25, 34, 55–59, 83; Vasechko 1964; Villasenor 1966; Wachtl 1901: 381; Weber, H. 1926: 577; Wichmann 1927b: 349; Wilke 1931: 641; Wolff & Krausse 1922: 16; Zethner-Moller & Rudinsky 1967: 897. (**ec**) Annila 1975: 11,13, 1977; Bakke 1957; Balazy 1964a; Balazy & Michalski 1960; Barbey 1927; Brammanis 1940;

Brauns 1950a; Domanski 1983; Eulefeld 1906; Fleischer 1877a; Francke-Grosmann 1959, 1966c; Fuchs 1929a, 1930; Galoux 1947b; Ganchev, Mirchev, & Chernev 1983; Gauss 1954a: 423; Gruenwald 1986; Gyorfi 1941b; Hirschmann 1960; Hirschmann & Wisniewski 1982, 1983; Jakaitis & Valenta 1976: 20; Kangas 1946b: 23; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1983; Kleine 1908c: 181; Kobakhidze 1960: 1853; Krogens 1927: 122; Kuhn 1949a: 316; Livingston & Berryman 1972: 1793; Lovendal 1890a: 130; Lundberg 1984; Mathiesen-Kaarik 1953: 6, 23; Naumann-Etienne 1978a; Nosek 1951: 106, 1952b: 98; Nuorteva 1956a: 17, 1968a, 1970, 1971; Nuorteva & Nuorteva 1968; Nusslin 1927: 291; Palmen 1946: 194; Pfeffer 1923a: 330, 1932a: 19, 1943b: 180, 1950c: 3, 1959: 5; Poinar 1975: 158; Prell 1926: 68; Purrini 1977a; Purrini & Weiser 1984, 1985; Ratzeburg 1869a: 57; Rennerfelt 1951; Ruhm 1956b: 3, 1958: 295; Saalas 1917a: 18, 1928: 651, 1949: 342, 367; Schedl 1936f: 172; Schimitschek 1955a: 35; Schwerdtfeger 1944a: 183, 1950b: 60, 1957a: 189; Sedlaczek 1908: 56, 1935a: 163; Thompson, W. R. & Simmonds 1964: 84, 1965: 21; Titova 1966; Tragardh 1936a: 146; Vitzthum 1923: 143, 1926: 427; Wauthoz 1952: 11; Wichmann 1953a: 107, 1956: 60; Wietinghoft 1924: 327; Wilke 1931: 641; Woodring & Moser 1970; Zumr 1985b. (**hb**) Altum 1881a, 1881c: 268, 1889c; Annila 1977; Barbey 1901a: 10, 18, 43, 1925: 37; Bargmann 1906; Beffa 1961; Boas 1923: 321; Browne 1968: 343; Budge 1949; Butovitsch & Spaak 1939; Chararas 1962c: 303; Charvat 1950; Chorbadzhievo 1929; Dombrowsky 1887; Eckstein 1889, 1897, 1915, 1926: 577, 1936; Eichhoff 1881a: 35, 83, 1882a: 241; Eidmann 1977b; Escherich 1923b: 458, 480; Everts 1903: 751; Fleischer 1877a; Fuchs 1904a, 1911b; Gabler 1955; Ganchev, Mirchev, & Chernev 1983; Gornostaev 1916: 311; Grandi 1951; Grohmann 1913: 235–261; Gyorfi 1957; Hadorn 1933; Hagedorn 1903a; Hartig 1877: 196; Helmbacher 1924; Henschel 1876a: 21, 240, 1895a: 134; Hess 1880, 1898: 378; Hess & Beck 1914: 249; Hochmut 1966; Holleben 1845; Hufnagl & Puzyr 1951: 104; Judeich & Nitsche 1895: 447, 453; Karpinski 1933b: 24; Karpinski & Strawinski 1948: 154; Kauschinger 1883: 110, 1893: 150; Kholer 1894a: 553; Knotek 1894a: 553; Krivolutskaya 1956: 829; Kurenzov 1948b: 106, 1950d: 161; Lekander 1954b: 11, 1959b: 49; Lengerken 1939: 61, 1954: 82; Lindemann 1881: 236; Lohrenz 1907: 41; Loos 1913: 405; Louzil 1961: 40; Lovendal 1890a: 130; Lunardoni & Leonardi 1889: 421; Maksymov 1950: 554; Merker 1853; Merker & Sattler 1952; Misson 1936: 222; Munro 1916a: 275, 1917a: 25, 1917b: 123, 1926: 55; Naumann-Etienne 1978a; Nilssen 1984; Nilsson 1987; Nordlinger 1856: 37; Novak, V., Hrozinka, & Stary 1976: 32; Nunberg 1929a: 101, 1929c: 119; Nuorteva 1956c: 17, 1968a, 1970; Nusslin 1898: 276, 1906b: 16, 1913: 205, 1927: 291; Ohnesorge 1955: 279; Palm 1956: 63; Petrenko 1966; Pfeffer 1941c: 5; Postner 1974: 395; Ratzeburg 1837: 132, 180, 1839: 220; Rhumbler 1922: 279, 1927: 291; Rupertsberger 1880: 225; Saalas 1913a: 68, 80, 1949: 342, 367; Schedl 1935c; Schimitschek 1955a: 35; Schmidt 1881: 42; Schnaider 1954: 173; Schwappach et al. 1929: 186; Schwerdtfeger 1944a: 183, 1957a: 189, 1981: 194; Sedlaczek 1921: 338, 1934: 275, 1935a: 163; Severin 1902a: 81; Simmel 1916: 196, 1928: 154; Spessivtsev 1913a: 67, 1928a: 223, 1934: 207; Stark 1926a: 332, 1952: 214; Taschenberg 1880: 210; Tragardh 1927c: 76, 1929a: 311, 1930c: 470, 1938: 10–14, 1939b: 145, 194; Tschorbadjiev 1929: 163; Wachtl 1901: 381; Weber, H. 1926: 577; Wichmann 1927b: 349; Wolff & Krausse 1922: 86; Zethner-Moller & Rudinsky 1967: 8. (**ds**) Acloque 1896; Ammann & Knabl 1913, 1923; Andersch 1851; Audras & Schaefer 1957; Balazy & Michalski 1960; Barthe 1896; Bau 1888; Bedel 1888b; Bejer-Petersen & Jorum 1977: 15; Benick 1921; Bielz 1851, 1887; Bistrom & Vaisanen 1988: 42; Boas 1923: 321; Borchert 1951; Brakman 1966: 204; Brancsik 1871, 1906; Browne 1968: 343; Buresh & Lazarov 1956; Burlini 1942: 43; Calwer 1884; Cecconi 1924; Chapuis 1869: 19, 1873: 227; Chapuis & Candeze 1853; Charvat 1950; Chorbadzhievo 1924d, 1929; Chrystal 1937; Crotch 1863; Debatisse 1945; Eder 1934; Eggers 1904; Endrodi 1958a, 1958b; Ericson & Sandin 1893; Escherich 1923b: 458, 480, 1932b; Esterberg 1928, 1959; Everts 1922: 639; Favre 1890; Fauvel 1885; Fleischer et al. 1921a; Florov 1949: 74; Forster 1849: 440; Fowler 1891; Fricken 1889: 275; Fuchs 1904a, 1905a; Gaubil 1849: 128; Gornostaev 1917; Gozis 1875: 79; Gredler 1866: 368; Grill 1895: 307; Grouzelle 1905; Grune 1979: 47; Gyorfi 1941b; Hagedorn 1903a, 1910d: 9; Hansen, V. 1939, 1956, 1964: 458; Havelka 1945; Hellen 1947; Heller 1881: 173; Henschel 1895a: 134; Heyden 1876: 296; Heyden, Reitter, & Weise 1883: 181, 1891: 667, 1906: 710; Holdhaus & Deubel 1910: 145, 160, 199; Holzel 1946: 81; Horion 1951; Hubault 1923b; Ihssen 1939: 336; Jacentkowsky 1912: 287; Jasilkowski 1906; Judeich & Nitsche 1895: 447: 453; Kaltenbach 1874: 686; Karpinski 1926: 82, 1932b: 52, 1933a: 290, 1933b: 24, 1948b: 229; Karpinski & Strawinski 1948: 154; Karsch 1887; Kersten 1933: 73; Kestercanek 1881a: 12; Kharitsov 1924: 199–204; Kiefer et al. 1942: 528; Klefbeck 1946: 205; Klefbeck & Sjoberg 1960: 230; Kleine 1912a: 128, 262, 267, 1912b: 162, 1913a: 34, 1914a: 16, 1934a: 126; Kloft & Hinks 1945: 218; Knotek 1892a: 32, 1894a: 553; Komarek 1931; Kono 1939b: 64, 67; Kono & Tamanuki 1939: 90, 92; Kovacevic 1924: 21–22; Kraatz 1869: 59; Krivolutskaya 1956: 829, 1983; Kurir 1947c: 16; Lacordaire 1866: 358;

Langhoffer 1915c: 157; Lentz 1857: 137; Liegel 1886: 54; Lindberg & Saris 1952: 59; Lindemann 1884b: 263; Lokaj 1868: 63; Lomnicki 1913b: 148; Loos 1913: 405; Lucht 1987: 276; Luigioni 1929: 994; Lunardoni & Leonardi 1889: 421; Lundberg 1974: 92, 1979: 31, 1981: 151; Lundblad 1950c: 115; Marcu 1926c: 62; Matthew & Fowler 1883: 41; Mequignon 1936: 48; Micke 1915: 111; Miller 1868: 27; Munro 1916a: 275, 1921: 87; Munster 1928: 288; Negru 1966b: 399, 1968a: 454; Nobuchi 1985c: 4; Nunberg 1927a: 213, 1928b: 88, 102, 1954: 20; Nuorteva 1971: 67; Nusslin 1898: 276; Orest 1926c: 62; Pacher 1865: 151; Palm 1946: 120, 1948a: 90, 1956: 63; Palmen 1946: 194; Perris 1876a: 253, 1877a: 413; Pfeffer 1924b: 471, 1931b: 74, 1947e: 2, 1950b: 73–74, 1989a: 38; Pierce, W. D. 1917: 81; Pittioni 1943: 175; Platonoff 1940: 11, 1943: 141; Pomerantzev 1907b: 492; Poppius 1900: 107; Postner 1974: 395; Prediger 1888: 272; Prell 1926: 68; Prossen 1913: 82; Rapp 1934: 724; Ratzeburg 1837: 132, 180, 1839: 220; Redtenbacher 1858: 826, 1874: 367; Reitter 1869a: 20, 1869b: 152, 1894a: 61, 1916: 283; Roubal 1941: 261; Saalas 1913a: 68, 80, 1916: 91–95, 110–116, 1917a: 18, 1931: 69; Sahlberg 1900: 104; Sainte-Claire & Mequignon 1938: 444; Schaufuss 1915: 1226; Schaum 1859: 95, 1862: 100; Schedl 1954b: 197, 1964a,1971d: 433, 1980a: 11, 1981b: 50; Schilsky 1909: 187; Schiodte 1873: 99; Schwerdtfeger 1981: 194; Seidlitz 1872: 390, 1891a: 558, 1891b: 604; Sharp & Fowler 1893: 34; Stark 1926a: 332, 1926b: 121, 1926j: 124, 1927b: 88, 1931a: 23, 1931d: 543, 1952: 214; Stein 1868: 113; Stein & Weise 1877: 163; Stierlin 1898: 431; Stierlin & Gautard 1871: 291, 1906: 205; Strand 1946: 597; Titova 1961: 121; Tomic 1957; Tragardh 1919: 237–248, 1920: 1–6, 1939b: 145, 194; Tredl 1907: 9; Tschorbadjiev 1929: 163; Villasenor 1966; Wauthoz 1952; Wegelius 1960: 106; Wessel 1877: 390; Westhoff 1882: 236; Wichmann 1924: 15, 1927a: 61; Wiepken 1883: 89; Wilke 1931: 641; Wilken 1864: 373; Winter, T. G. 1983: 45; Yanovskii & Dmitrienko 1983; Yanovskii & Tegshzhargal 1984: 415; Zoufal 1920: 20. (**tx**) Acloque 1896; Bach 1854; Bakke 1960: 318; Balachowsky 1949a: 129; Barbev 1901: 10, 18, 43; Beaver 1970a; Bedel 1888b; Beffa 1961; Boas 1923: 321; Brancsik 1871; Chapuis 1869: 19, 1873: 227; Chapuis & Candeze 1853; Charvat 1950; Chorbadzhievo 1924d; Doebner 1860; Dombrowsky 1887; Duffy 1953; Eggers 1933b: 4, 1940: 61; Eichhoff 1864b: 24, 1881a: 35, 83, 1883a: 100, 121; Endrodi 1957a: 308, 1957b: 412–413; Erichson 1836: 49; Escherich 1923b: 458, 480; Escherich & Escherich 1897; Everts 1903: 751, 1922: 639; Fauvel 1885, 1889; Ferrant 1911; Fleischer 1905, 1927; Formanek 1907: 28; Fricken 1889: 275; Fuchs 1912a; Gabler 1955; Gemminger & Harold 1872: 2669; Grune 1979: 46–47; Hagedorn 1910a: 45; Hansen, V. 1955: 172, 1956, 1964: 458; Henry 1892: 15; Henschel 1876a: 21, 240, 1895a: 134; Jacquelin du Val & Fairmaire 1868: 99; Judeich & Nitsche 1895: 447, 453; Karpinski & Strawinski 1948: 154; Kirchner 1860: 91; Knotek 1892a: 32; Koch 1910: 18, 1928: 105; Kraatz 1864: 140; Krivolutskaya 1956: 829, 1958: 123; Kuhnt 1913: 1053; Kurenzov 1941a: 128, 1948b: 106; Lacordaire 1866: 358; Lekander 1959b: 49; Letzner 1891: 372; Leunis 1886: 178; Lindemann 1881a: 236; Louzil 1961: 105; Lovendal 1889b: 32, 1898: 110; Lucht 1987: 276; Luigioni 1929: 994; Lunardoni & Leonardi 1889: 421; Munro 1916a: 275, 1917b: 123, 1920, 1926; Negru 1966: 399; Nordlinger 1848: 251, 1856: 37; Novak, V., Hrozinka, & Stary 1976: 32; Nunberg 1929c: 119, 1954: 20; Nusslin 1912c: 275; Perris 1877a: 413; Pfeffer 1932b: 15, 1941c: 5, 1944b: 100–101, 1947c: 2, 1955a: 110, 1989: pl. 3, 4; Portevin 1935: 320; Postner 1974: 395; Quaschik 1953: 35; Ratzeburg 1837: 132, 180, 1839: 220; Redtenbacher 1849a: 365, 1849b: 27, 1858: 826, 1874: 367; Reitter 1894a: 61, 1913a: 52–53, 1916: 283; Rhumbler 1922: 279, 1927: 291; Rupertsberger 1880: 225; Saalas 1913a: 68, 80, 1949: 342, 367; Schedl 1934f: 1636, 1935: 37–43, 1952f: 87, 1954b: 197, 1968c, 1979c: 72, 239, 1980a: 11, 1981b: 50; Scherb 1971; Schilsky 1888: 354; Schimitschek 1937c: 49, 1955c: 79; Sedlaczek 1912: 306; Seidlitz 1872: 390, 1891a: 558, 1891b: 604; Sokanovskii 1954: 16; Spessivtsev 1921a: 962, 1922: 461–462, 1925a: 170, 1925b: 7, 1934: 207–220; Steirlin 1898: 431; Taschenberg 1880: 210; Wichmann 1911a: 100. (**ms**) Escherich 1932b; Fuchs 1911b; Lovendal 1890a: 130; Ritter 1929: 554; Schedl 1938c: 4; Sedlaczek 1934: 27.

rotundicollis Reitter 1894a: 60. Syntypes, sex?; Subalpinen Region des Schneeberges bei Wien, Austria; NHMB, Budapest. Synonymy: Balachowsky 1949a: 129.

Notes: (1) Reitter 1913a: 52 (elevated from variety to species).

References: (**ec**) Pfeffer 1959: 5. (**ds**) Horion 1951; Kleine 1934a: 126; Reitter 1894a: 60, 1916: 283; Roubal 1941: 261; Schilsky 1909: 187; Wichmann 1927a: 61. (**tx**) Balachowsky 1949a: 129; Fleischer 1927; Pfeffer 1932b: 14, 1955a: 11; Reitter 1894a: 60, 1913a: 53, 1916: 283; Schedl 1934f: 1636.

starki Eggers 1933f: 1 (*Hylurgops*). Holotype, sex?; Russland (Briansk); IZL, Leningrad. Synonymy: Sokanovskii 1954: 16.

References: (**ec**) Poinar 1975: 160. (**hb**) Stark 1952: 206. (**ds**) Klefbeck & Sjoberg 1960: 229; Stark 1952: 206. (**tx**) Eggers 1933f: 1–2; Michalski 1969: 566; Schedl 1979c: 236; Sokanovskii 1954: 16; Stark 1952: 206.

***exilis* Chapuis** 1869: 20. Holotype, sex?; Nuorlean [presumably New Orleans, Louisiana, USA]; IRSNB, Brussels.

Distribution: North America (Alabama, District of

Columbia, Florida, Louisiana, Mississippi, North Carolina, South Carolina, E Texas in USA).
Hosts: *Pinus elliottii*, *P. plaustris*, *P. taeda*, *P.* spp.
Notes: (3) Atkinson 1989b: 325 placed this rare species as a synonym of *tenuis* without examining the holotype; they are quite distinct. Blackman 1941: 21 (redescribed).
References: (**cn**) Blackman 1950. (**ec**) Drooz 1985: 340. (**hb**) Beal & Massey 1945: 96; Blackman 1950; Chamberlin 1939: 211; Deyrup & Atkinson 1987a: 64. (**ds**) Beal & Massey 1945: 96; Blackman 1950; Blatchley & Leng 1916: 669; Chamberlin 1939: 211; Chapuis 1869: 20, 1873: 228; Deyrup & Atkinson 1987a: 64; Drooz 1985: 340; Hagedorn 1910d: 9; Henshaw 1885: 149; Kirk 1970; Kleine 1912b: 162, 1914b: 383, 407; Leng 1920: 339; Ostmark 1968; Schwarz 1878d: 969; Swaine 1909: 145; Wood, S. L. 1982b: 97. (**tx**) Atkinson 1989b: 325; Beal & Massey 1945: 96; Blackman 1922: 64,1941: 21–23; Blatchley & Leng 1916: 669; Chamberlin 1939: 211; Chapuis 1869: 20, 1873: 228; Gemminger & Harold 1872: 2669; Hagedorn 1910a: 45; LeConte 1876: 389, 1878a: 469; Swaine 1909: 145, 1918a: 79; Wood, S. L. 1982b: 97.

***flohri* (Eggers)** 1930a: 166 (*Hylurgops*). Holotype ♀; Mexico (Salazar); MNB, Berlin.
Distribution: North America (Distrito Federal, Hidalgo, Mexico, Morelos, Oaxaca in Mexico).
Hosts: *Pinus* sp.
Notes: (1) Wood 1966b: 24 (to *Hylastes*).
References: (**hb**) Atkinson et al. 1986: 13; Wood, S. L. 1982b: 100. (**ds**) Atkinson & Equihua 1985a: 70, 1988: 90; Atkinson et al. 1986: 13; Blackwelder 1947; Ferrer 1942; Schedl 1940a: 338, 1972g: 38; Wood, S. L. 1982b: 100. (**tx**) Eggers 1930a: 166; Wood, S. L. 1966b: 24, 1982b: 100.

***fulgidus* Blackman** 1941: 18. Holotype ♀; Las Vegas Hot Springs, New Mexico [USA]; USNM, Washington.
Figures: Atkinson et al. 1986: 14.
Distribution: North America (Honduras/ Baja California Norte, Chiapas, Durango, Michoacan, Morelos, Zacatecas in Mexico/ Arizona, Colorado, Kansas, Nevada, New Mexico in USA).
Hosts: *Pinus edulis*, *P. ponderosa*, *P.* spp.
References: (**ay**) Thomas, J. B. 1967. (**hb**) Atkinson et al. 1986: 13; Burgos & Saucedo 1983: 51; Wood, S. L. 1982b: 95. (**ds**) Atkinson & Equihua 1985a: 69, 1985b: 228, 1988: 90; Atkinson et al. 1986: 13; Blackwelder & Blackwelder 1948; Burgos & Saucedo 1983: 51; Thomas, J. B. 1967; Wood, S. L. 1982b: 95. (**tx**) Atkinson et al. 1986: 13; Blackman 1941: 18; Thomas, J. B. 1967; Wood, S. L. 1982b: 95.

***gracilis* LeConte** 1868: 174. Lectotype ♀; Tahoe Valley, California [USA]; MCZ, Cambridge, designated by Wood 1972b: 145.
Figures: Bright & Stark 1973: 147.
Distribution: North America (British Columbia in Canada/ Guatemala/ Baja California Norte, Chiapas, Chihuahua, Coahuila, Durango, Guerrero, Hidalgo, Mexico, Michoacan in Mexico/ Arizona, California, Colorado, Idaho, Montana, Nebraska, Nevada, New Mexico, Oregon, South Dakota, Utah, Washington, Wyoming in USA).
Hosts: *Pinus durangensis*, *P. edulis*, *P. monophylla*, *P. montezumae*, *P. ponderosa*, *P.* spp., *Pseudotsuga flahuatii*, rarely *Abies concolor*.
Notes: (3) Blackman 1941: 19 (redescribed).
References: (**bv**) Miller, Madden, & Borden 1986: 85. (**cn**) Keen 1952c: 154; Schuder 1969: 74; Swaine 1918a: 78. (**ec**) Massey 1961: 359. (**hb**) Bright 1976d: 52; Bright & Stark 1973: 27; Chamberlin 1939: 212, 1958: 115; Keen 1952c: 154; Swaine 1918a: 78; Wood, S. L. 1982b: 101. (**ds**) Atkinson & Equihua 1985a: 70, 1985b: 228; Bright 1976d: 52; Bright & Stark 1973: 27; Chamberlin 1939: 212, 1958: 115; Cockerell et al. 1907; Elias 1985: 39; Fall 1906: 203; Fall & Cockerell 1907: 218; Furniss, M. M. & Furniss 1972; Furniss, R. L. & Carolin 1977: 364; Hagedorn 1910d: 9; Henshaw 1882: 269, 1885: 149; Keen 1952c: 154; Kleine 1912b: 162, 1914b: 389; Leng 1920: 339; Miller, R. F., Morgan, & Hicock 1985: 500; Muskus, A. 1984: 41; Patterson & Hatch 1945: 151; Schedl 1977e: 42; Schuder 1969: 74; Snow 1881: 70, 1907: 188; Swaine 1909: 147; Wickham 1896a: 310, 1898: 312; Wood, S. L. 1972a: 400, 1982b: 101. (**tx**) Blackman 1941: 19–20; Bright 1976d: 52; Bright & Stark 1973: 147; Chamberlin 1939: 212, 1958: 115; Gemminger & Harold 1872: 2670; Hagedorn 1910a: 45; Hopkins 1899: 449; LeConte 1868: 174, 1876: 388, 1878c: 472; Muskus, A. 1984: 41; Swaine 1909: 147, 1918a: 78; Wood, S. L. 1969c: 121, 1972a: 400, 1972b: 145, 1972c: 195, 1975a: 22, 1982b: 101.

vastans Chapuis 1869: 17. Holotype ♀; Mexico; IRSNB, Brussels. Synonymy: Wood 1972b: 145.
References: (**hb**) Schwerdtfeger 1957d: 362. (**ds**) Blackwelder 1947; Blandford 1896e; Chapuis 1869: 17, 1873: 225; Ferrer 1942; Hagedorn 1910d: 12; Kleine 1912b: 162, 1914b: 347, 358; Schwerdtfeger 1957d: 362. (**tx**) Blandford 1896e; Chapuis 1869: 17, 1873: 225; Hagedorn 1910a: 46; Schedl 1940a: 338, 1955g: 5; Wood, S. L. 1969c: 121, 1972b: 145.

longus LeConte 1876: 388. Holotype ♀; Colorado [USA]; MCZ, Cambridge. Synonymy: Wood 1972e: 195.
Notes: (3) Blackman 1941b: 16 (redescribed).
References: (**cn**) Keen 1952c: 155; Swaine 1918a: 78. (**hb**) Keen 1952c: 155; Swaine 1918a: 78. (**ds**) Cockerell 1893; Cockerell et al. 1907; Fall & Cockerell 1907: 218; Hagedorn 1910d: 10; Henshaw 1882: 267, 1885: 149; Keen 1952c: 155; Kleine 1912b: 162, 1914b: 396; Leng 1920: 339; Snow 1883: 44, 1906: 175, 1907: 188; Swaine 1909: 145; Wickham 1896a:

310, 1896b: 170. (**tx**) Blackman 1941: 5, 16–17; Hagedorn 1910a: 46; LeConte 1876: 388; Swaine 1909: 145, 1918a: 78; Wood, S. L. 1972e: 195.

asper Swaine 1917: 19. Holotype ♀; Larimer Co., Colorado [USA]; CNCI, Ottawa. Synonymy: Wood 1975a: 22.

Notes: (3) Blackman 1941: 14 (redescribed).

References: (**hb**) Swaine 1918a: 77. (**ds**) Leng 1920: 339. (**tx**) Blackman 1941: 14; Bright 1967b: 674; de Ruette 1970: 101; Swaine 1917: 19, 1918a: 77; Wood, S. L. 1975a:22.

nitidus Swaine 1917: 19. Holotype, sex?; Las Vegas, New Mexico [USA]; CNCI, Ottawa. Synonymy: Wood 1972b: 145.

Notes: (3) Blackman 1941: 17 (redescribed).

References: (**ay**) Thomas, J. B. 1967. (**ec**) Kinn 1971; Swaine 1918a: 77–78. (**ds**) Leng 1920: 339; Thomas, J. B. 1966. (**tx**) Blackman 1941: 17–18; Bright 1967b: 674; de Ruette 1970: 101; Swaine 1917: 19–20, 1918a: 77–78; Thomas, J. B. 1967; Wood, S. L. 1972b: 145, 1975: 22.

***lifuanus* Fauvel** 1872: 199. Syntypes, sex?; Lifu Island (near New Caledonia); not located.

Distribution: Lufou Island near New Caledonia.

Notes: (1) This species is obviously assigned to the wrong genus.

References: (**ds**) Fauvel 1872: 199; Hagedorn 1910d: 10; Kleine 1912b: 162, 1914b: 300. (**tx**) Fauvel 1872: 199; Gemminger & Harold 1972: 2670; Hagedorn 1910a: 45.

***linearis* Erichson** 1836: 49. Syntypes, sex?; Germany: MNB, Berlin.

Figures: Balachowsky 1949a: 126.

Distribution: Africa (Algeria/ Canary Islands/ Madeira Island/ Morocco/ introduced to South Africa), Asia (Israel/ Syria), Europe (Belgium/ Corsica/ England/ France/ Germany/ Greece/ Hungary/ Italy/ Poland/ Portugal/ Spain/ W USSR/ Yugoslavia).

Hosts: *Pinus halepinsis*, *P. pinaster*, *P.* spp.

References: (**ay**) Michalski, Grocholski, & Nowak 1983. (**bv**) Grune 1979: 49; Mendel, Madar, & Golan 1985. (**cn**) Anonymous 1970c: 13; Espanol 1964a; Grandi 1951; Joly 1976; Muller 1912: 185; Pfeffer 1933: 43; Souphieff & Scherbinovskaya 1937: 47; Wachtl 1901a: 381. (**ec**) Kleine 1908c: 181; Nosek 1959a: 118; Novak, P. 1952: 413; Pfeffer 1928b: 9, 1933: 43; Wichmann 1916: 18, 1955a: 95. (**hb**) Beffa 1961; Cabral 1959; Chararas 1962c: 306; Dombrowsky 1887; Eichhoff 1881a: 35, 85; Everts 1903: 752; Fuchs 1904a; Grandi 1951; Gyorfi 1957; Hagedorn 1903a; Halperin & Holzschuh 1984: 25; Henschel 1895a: 135; Joly 1976; Karpinski & Strawinski 1948: 154; Krivolutskaya 1960: 77; Lengerken 1939: 62, 1954: 82; Mendel, Madar, & Golan 1985; Nosek 1959a: 118; Nunberg 1929: 101; Peyerimhoff 1919: 252; Pfeffer 1941b: 2; Postner 1974: 395; Ratzeburg 1837: 180; Stark 1952: 210; Wachtl 1901: 381; Wichmann 1916: 18; Zocchi 1959: 103. (**ds**) Acloque 1896; Anonymous 1970c: 13; Audras & Schaefer 1957; Barthe 1896; Bedel 1888b; Benick 1921; Blanchere & Robert 1889; Brakman 1966b: 204; Brancsik 1871, 1906; Cabral 1959; Calwer 1884, 1893; Chapuis 1869: 18, 1873: 226; Chararas 1962c: 306; Endrodi 1958b, 1986: 217; Escalera 1919; Escherich 1932b; Everts 1922: 639; Fauvel 1885, 1897; Favre 1890; Fuchs 1904a; Ganglbauer 1904; Gaubil 1849: 128; Gozis 1875: 79; Gredler 1866: 369; Grune 1979: 49; Hagedorn 1903a, 1910d: 10; Halperin & Holzschuh 1984: 25; Hariri 1971: 262; Henschel 1895a: 135; Hepburn 1966; Heyden 1876: 296; Heyden, Reitter, & Weise 1883: 181, 1891: 667, 1906: 710; Holdhaus 1923: 115; Horion 1951; Huther 1951: 277; Jansson 1940: 63; Jazentkovsky 1912: 287; Joly 1976; Kaltenbach 1874: 686; Karpinski & Strawinski 1948: 154; Kestercanek 1881a: 12; Kleine 1912a: 263, 1912b: 162, 1913a: 34, 1934a: 126; Koltze 1901: 152; Kraatz 1869: 59; Krivolutskaya 1960: 77; Lacordaire 1866: 358; Langhoffer 1915c: 157; Leclercq 1971; Lokaj 1868: 63; Lomnicki 1886a: 240, 1913b: 148; Lucht 1987: 276; Luigioni 1929: 994; Lundblad 1958: 489; Mequignon 1936: 54; Moragues 1889: 32; Novak, P. 1952: 413; Nunberg 1928b: 101, 1954: 19; Oliveira 1887: 326; Perris 1856a: 229, 1876a: 253, 1877a: 413; Peverimhoff 1919: 252, 1933b: 367; Pfeffer 1928b: 9, 1931b: 74, 1947c: 11, 1947d: 126, 1984: 277, 1989a: 38; Pittioni 1943: 175; Postner 1974: 395; Ragusa 1924: 115; Rapp 1934: 724; Ratzeburg 1837: 180; Redtenbacher 1858: 825, 1874: 367; Reitter 1869b: 153, 1894a: 61, 1916: 284; Revy & Siroki 1942: 82; Roubal 1941: 261; Sainte-Claire 1914: 471; Sainte-Claire & Mequignon 1938: 444; Schaufuss 1915: 1226; Schaum 1859: 95, 1862: 100; Schedl 1963e: 154, 1964a, 1967c: 69, 1971d: 424, 1980a: 11, 1981b: 50; Schedl, Lindberg, & Lindberg 1959: 14; Scheidt 1919: 165; Schilsky 1909: 187; Schmitz 1898: 157; Seidlitz 1872: 391, 1891a: 558, 1891b: 604; Souphieff & Scherbinovskaya 1937: 49; Stark 1952: 210; Stein 1868: 113; Stein & Weise 1877: 163; Stierlin 1898: 431; Stierlin & Gautard 1871: 191, 1906: 205; Strauch 1861: 123; Tredl 1907: 9; Wanka 1915: 213; Wessel 1877: 390; Wichmann 1927a: 61, 1955a: 98; Zivojinovic 1960: 24; Zocchi 1959: 103. (**tx**) Acloque 1896; Bach 1854; Balachowsky 1949a: 131; Bedel 1888b; Beffa 1961; Bertolini 1872; Brancsik 1871; Cabral 1959; Chapuis 1869: 18, 1873: 226; Doebner 1860; Dombrowsky 1887; Eichhoff 1864b: 46, 1881a: 35, 85, 1883a: 100, 122; Endrodi 1957b; Erichson 1836: 49; Everts 1903: 752, 1922: 639; Fauvel 1885, 1889; Fleischer 1927; Formanek 1907: 28; Gemminger & Harold 1872: 2670; Grune 1979: 48–49; Hagedorn 1910a: 45; Henschel 1895a: 135; Joly 1976;

Karpinski & Strawinski 1948: 154; Kuhnt 1913: 1053; Lacordaire 1866: 358; Letzner 1891: 372; Lovendal 1898: 111; Lucht 1987: 276; Luigioni 1929: 994; Michalski, Grocholski, & Nowak 1983; Nunberg 1954: 19; Pfeffer 1932b: 15, 1941b: 2, 1944b: 102, 1947e: 11, 1955a: 115, 1989a: 37; Portevin 1935: 320; Postner 1974: 395; Ratzeburg 1837: 180; Redtenbacher 1849a: 793, 852, 1849b: 27, 1858: 825, 1874: 367; Reitter 1894a: 61, 1913a: 53, 1916: 284; Schedl 1934f: 1636, 1957b: 150, 1959n:382, 1968c, 1980a: 11, 1981b: 50; Schedl, Lindberg, & Lindberg 1959: 14; Seidlitz 1872: 391, 1891a: 558, 1891b: 604; Stark 1952: 210; Stierlin 1898: 431; Wichmann 1916: 18.

corticiperda Erichson 1836: 50. Syntypes, sex?; Portugal; not located. Synonymy: Balachowsky 1949a: 132 (synonym or geographical race?), Schedl 1934f: 1636.

References: (**hb**) Eichhoff 1881a: 35, 86. (**ds**) Blanchere & Robert 1889; Calwer 1884, 1893; Fauvel 1885; Heyden, Reitter, & Weise 1883: 181; Kleine 1914a: 16; Lacordaire 1866: 358; Reitter 1894a: 61; Schaum 1859: 95, 1862: 100; Stein 1868: 113; Stein & Weise 1877: 163; Tredl 1907: 9. (**tx**) Balachowsky 1949a: 132; Bertolini 1872; Doebner 1860; Eichhoff 1864b: 46, 1881a: 35, 86, 1883a: 100, 122; Erichson 1836: 50; Fauvel 1885; Gemminger & Harold 1872: 2669; Lacordaire 1866: 358; Pfeffer 1944b: 102; Reitter 1894a: 61; Schedl 1934f: 1636.

variolosus Perris 1852: 181. Syntypes, sex?; presumably France (not seen); not located. Synonymy: Letzner 1891: 372, Hagedorn 1910d: 10.

References: (**hb**) Perris 1856a: 229. (**ds**) Hagedorn 1910d: 10; Kraatz 1869: 59; Lacordaire 1866: 358; Redtenbacher 1874: 367; Schaum 1859: 95, 1862: 100; Schilksy 1909: 187; Stein 1868: 113; Stein & Weise 1877: 163. (**tx**) Balachowsky 1949a: 113; Doebner 1860; Eichhoff 1864b: 24; Hagedorn 1910d: 10; Lacordaire 1866: 358; Letzner 1891: 372; Perris 1852: 181, 1856a: 367; Redtenbacher 1874: 367; Sharp 1920: 205.

clavus Wollaston 1854: 305. Holotype, sex?; Madeira Island; BMNH, London. Synonymy: Hagedorn 1910d: 10.

References: (**ds**) Wollaston 1854: 305, 1857: 100. (**tx**) Gemminger & Harold 1872: 2669; Hagedorn 1910d: 10; Wollaston 1854: 305, 1857: 100, 1865: 251.

flavicornis Lindberg 1950: 19. Holotype, sex?; Puenta Fria, Tenerife Island, Canary Islands; MZU, Helsinki. Synonymy: Schedl 1959n:382; Schedl, Lindberg, & Lindberg 1959: 14.

References: (**ds**) Lindberg 1950: 19. (**tx**) Lindberg 1950: 19; Schedl 1959n:382; Schedl, Lindberg, & Lindberg 1959: 14.

***longicollis* Swaine** 1918a: 79. Holotype, sex?; Atlanta, Idaho [USA]; CNCI, Ottawa.

Distribution: North America (Alberta, British Columbia in Canada/ California, Idaho, Montana, Oregon, South Dakota, Washington in USA).

Hosts: *Pinus contorta*, *P. monticola*, *P. ponderosa*.

Notes: (3) Blackman 1941: 21 (redescribed).

References: (**cn**) Lindgren 1980a: 63; Swaine 1918a: 78, 79. (**ec**) Harrington & Cobb 1983; Kinn 1971; Ross, D. A. 1967; Stephen & Dahlsten 1976b: 2. (**hb**) Bright 1976d: 52; Bright & Stark 1973: 28; Chamberlin 1939: 212, 1958: 115; Lindgren 1980a: 63; Wood, S. L. 1982b: 98. (**ds**) Bright 1976d: 52; Bright & Stark 1973: 28; Chamberlin 1925, 1939: 212, 1958: 115; Furniss, R. L. & Carolin 1977: 364; Leng 1920: 339; Patterson & Hatch 1945: 152; Ross, D. A. 1967; Wood, S. L. 1972a: 400, 1982b: 98. (**tx**) Blackman 1941: 21; Bright 1967b: 674, 1976d: 52; Bruck 1936a; Chamberlin 1939: 212, 1958: 115; Hoebeke 1978; de Ruette 1970: 101; Swaine 1918a: 78–79; Wood, S. L. 1972a: 400, 1982b: 98.

***lowei* Paiva** 1861b: 211. Syntypes, sex?; Canary Islands (Teneriffe and Palma); not located.

Distribution: Canary Islands (Teneriffe, Palma).

Hosts: *Pinus canariensis*.

References: (**cn**) Souphieff & Scherbinovskaya 1937: 102. (**ds**) Hagedorn 1910d: 10; Kleine 1912b: 162, 1914a: 20; Lindberg 1950: 19; Peyerimhoff 1933b: 371; Schedl, Lindberg, & Lindberg 1959: 14; Souphieff & Scherbinovskaya 1937: 102; Uyttenboogaart 1937: 116. (**tx**) Gemminger & Harold 1872: 2670; Hagedorn 1910a: 46; Paiva 1861b: 211; Schedl 1934f: 1636; Schedl, Lindberg, & Lindberg 1959: 14; Wollaston 1864: 269, 1865: 251.

***macer* LeConte** 1868: 175. Lectotype ♂; California [USA]; MCZ, Cambridge, designated by Wood 1982b: 104.

Figures: Bright 1976d: 200, 206.

Distribution: North America (British Columbia in Canada/ Arizona, California, Colorado, Idaho, Montana, Nebraska, Nevada, Oregon, South Dakota, Utah, Washington, Wyoming in USA).

Hosts: *Pinus ponderosa*, *P.* spp., rarely *Picea engelmannii*.

Notes: (3) Blackman 1941: 16 (redescribed).

References: (**ay**) Ting 1936: 96. (**bv**) Barr, B. A. 1969: 641. (**cn**) Chamberlin 1924; Doane et al. 1936; Keen 1929: 57, 1938: 27, 1952c: 155; Lindgren 1980a: 63; Schuder 1969: 76; Swaine 1918a: 78–79. (**ec**) Goheen & Cobb 1978; Hansen et al. 1988; Harrington & Cobb 1983; Keen 1938: 2. (**hb**) Bright 1976d: 49; Bright & Stark 1973: 26; Chamberlin 1958: 116; Doane et al. 1936; Keen 1929: 57, 1938: 27, 1952c: 155; Lindgren 1980a: 63; Schwarz 1894b: 255; Swaine 1918a: 78–79; Wood, S. L. 1982b: 104. (**ds**) Atkinson 1989a: 59; Bright 1976d: 49; Bright & Stark 1973: 26; Cham-

berlin 1925, 1958: 116; Evans, D. 1983: 33; Fall 1906: 203; Furniss, R. L. & Carolin 1977: 364; Hagedorn 1910d: 10; Henshaw 1882: 269, 1885: 149; Hopping 1922; Keen 1929a: 25, 57, 1938: 27, 1952c: 155; Kleine 1912b: 162, 1914b: 389, 1934a: 126; Lange 1937: 173; Leng 1920: 339; Patterson & Hatch 1945: 151; Schuder 1969: 76; Swaine 1909: 145, 1918a: 78; Wickham 1896a: 310; Wood, S. L. 1972a: 401, 1982b: 104. (**tx**) Blackman 1941: 16; Bright 1976d: 49, 200, 206; Bruck 1936a; Chamberlin 1939: 214; 1958: 115; Evans, D. 1983: 33; Fall 1926: 208; Gemminger & Harold 1872: 2670; Hagedorn 1910a: 46; Keen 1929a: 25; LeConte 1868: 175, 1876: 388, 1878c: 472; Swaine 1909: 145, 1915: 368, 1916: 78–79, 1918a: 78–79; Wood, S. L. 1972a: 401, 1982b: 104.

***mexicanus* Wood** 1967d: 36. Holotype ♀; 62 km W Toluca, Mexico, Mexico; Wood Collection.
Distribution: North America (Durango, Mexico, Morelos in Mexico/ S Arizona in USA).
Hosts: *Pinus* spp.
References: (**hb**) Atkinson et al. 1986: 13. (**ds**) Atkinson & Equihua 1985b: 228; Atkinson et al. 1986: 13; Wood, S. L. 1982b: 100. (**tx**) de Ruette 1970: 101; Wood, S. L. 1967d: 36–37, 1982b: 100.

***niger* Wood** 1974a: 7. Holotype ♂; 31 km E Tulancingo, Hidalgo, Mexico; Wood Collection.
Distribution: North America (Hidalgo in Mexico).
Hosts: *Pinus* sp.
References: (**ds**) Atkinson & Equihua 1985b: 228; Wood, S. L. 1982b: 101. (**tx**) Wood, S. L. 1974a: 7, 1982b: 101.

***nigrinus* (Mannerheim)** 1852: 356 (*Hylurgus*). Holotype ♀; Sitka Island, Alaska [USA]; MZU, Helsinki.
Figures: Furniss & Carolin 1977: 364.
Distribution: North America (Alaska/ Alberta, British Columbia, Northwest Territories, Yukon in Canada/ California, Idaho, Montana, Washington in USA).
Hosts: *Pinus ponderosa*, *P.* spp., *Picea* spp., *Pseudotsuga menziesii*, *Tsuga* sp., *Larix* sp., *Abies* spp.
Notes: (1) LeConte 1868: 174 (to *Hylastes*). (3) Blackman 1941: 13 (redescribed).
References: (**ay**) Chapman, J. A. 1969b, 1972; Thomas, J. B. 1967; Zethner-Moller & Rudinsky 1967. (**bv**) Chapman, J. A. 1962a: 4, 1963: 675–676, 1966: 55; Daterman, Rudinsky, & Nagel 1965; Jacobson 1972; Nijholt 1973b: 589; Rudinsky 1966b, 1966c; Rudinsky & Daterman 1964a; Rudinsky & Zethner-Moller 1967; Witcosky, Schowalter, & Hansen 1986b, 1987; Zethner-Moller & Rudinsky 1967. (**cn**) Chamberlin 1924; Doane et al. 1936; Essig 1926: 519, 1958: 519; Graham 1963; Keen 1929: 57, 1938: 27, 1952c: 155; Rudinsky & Zethner-Moller 1967; Ruppel 1967: 52; Schuder 1969: 81; Swaine 1918a: 78–79; Witcosky 1989; Zethner-Moller & Rudinsky 1967. (**ec**) Chamberlin 1918a; Furniss, M. M. 1966; Furniss, R. L. & Carolin 1977: 364; Harrington & Cobb 1983; Harrington, Cobb, & Lownsberry 1985; Hendrickson 1962b: 595; Keen 1938: 27; Ross, D. A. 1967; Rudinsky & Zethner-Moller 1967; Witcosky & Hansen 1985; Witcosky, Schowalter, & Hansen 1986a; Zethner-Moller & Rudinsky 1967. (**hb**) Bright 1976d: 51; Bright & Stark 1973: 26; Chamberlin 1958; Chapman, J. A. 1962a; Daterman, Rudinsky, & Nagel 1965; Doane et al. 1936; Essig 1926: 519, 1958: 519; Furniss, R. L. & Carolin 1977: 364; Graham 1963; Hamilton 1894: 36; Harrington, Cobb, & Lownsberry 1985; Keen 1929: 57, 1938: 27, 1952c: 155; Nijholt 1980: 203; Rudinsky & Daterman 1964a; Swaine 1918a: 78–79; Wood, S. L. 1982b: 105; Zethner-Moller & Rudinsky 1967. (**ds**) Bedard 1938a; Blackwelder & Blackwelder 1948; Bright 1976d: 51; Bright & Stark 1973: 26; Chamberlin 1917: 355, 1918a: 24, 1925, 1958: 115; Chapman, J. A. 1963b: 675–676; Chapuis 1869: 18, 1873: 226; Essig 1926: 519, 1958: 519; Furniss, M. M. & Furniss 1972; Furniss, R. L. & Carolin 1977: 364; Hagedorn 1910d: 10; Hamilton 1894a: 36; Henshaw 1885: 149; Hopping 1922; Keen 1929a: 25, 1929c: 57, 1938: 27, 1952c: 155; Kleine 1912b: 162, 1914b: 389, 1934a: 126; Leech 1946: 64; Leng 1920: 339; Nijholt 1973: 589; Patterson & Hatch 1945: 151; Ross, D. A. 1967; Ruppel 1967: 52; Schuder 1969: 81; Swaine 1909: 145, 1918a: 78; Wood, S. L. 1957c: 396, 1972a: 401, 1982b: 105; Zethner-Moller & Rudinsky 1967: 897–911. (**tx**) Blackman 1941: 4, 13; Bright 1976d: 51; Chamberlin 1939: 213–214, 1958: 115; Chapuis 1869: 18, 1873: 226; Fall 1926: 208; Furniss, R. L. & Carolin 1977: 364; Gemminger & Harold 1872: 2670; Hagedorn 1910a: 46; Keen 1929a: 25; LeConte 1857: 22, 1868: 174, 1876: 388; Mannerheim 1852: 356; Swaine 1918a: 78–79; Wood, S. L. 1957c: 396, 1969c: 116, 1972a: 401, 1982b: 105. (**ms**) Essig 1931: 699.

yukonis Fall 1926: 207. Holotype ♂; White Horse, Yukon Territory, Canada; MCZ, Cambridge. Synonymy: Wood 1957c: 396.
Notes: (3) Blackman 1941: 14 (original description quoted).
References: (**ds**) Leng & Mutchler 1933: 51. (**tx**) Blackman 1941: 14; Fall 1926: 207; Wood, S. L. 1957c: 396.

***opacus* Erichson** 1836: 51. Syntypes, sex?; presumably Germany; MNB, Berlin.
Figures: Pfeffer 1989a: pl. 3.
Distribution: Asia ("Manchuria" [Heilongjiang?] in China/ Japan/ Korea/ E USSR), Europe (Austria/ Belgium/ Bulgaria/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Norway/ Poland/ Sweden/ Switzerland/ W USSR), North America (introduced to New York in USA).
Hosts: *Pinus* spp., *Picea* spp., rare in *Larix* spp.
References: (**ay**) Escherich 1923b: 480; Feytaud

1950a; Fuchs 1912a; Marcu 1933a: 3; Uchastnova 1988: 40. (**bv**) Barr 1969: 641; Grune 1979: 51; Leclercq, Simon, & Verstraeten 1967; Naumann-Etienne 1978a; Nuorteva 1956c: 92; Nuorteva & Nuorteva 1968; Schroeder & Lindelow 1989. (**cn**) Anonymous 1921p: 4, 1946i: 1, 3; Barbey 1925: 204; Browne 1968: 343; Chorbadzhievo 1929; Eckstein 1926: 577; Egorov 1958: 1492; Escherich 1917: 97–115, 1923b: 480; Esterberg 1959; Feytaud 1950a; Fischer 1937c; Gabler 1955; Hanson 1937; Hess 1880, 1898: 381; Hess & Beck 1914: 249, 1929: 303; Inouye 1949a: 108, 1949b, 1949c; Joly 1976; Judeich & Nitsche 1895: 453; Kangas 1937; Koch 1913: 22; Lonshehakov & Lur'e 1960; Muller 1912: 185; Nestertschuk 1930: 176; Nuorteva & Nuorteva 1968; Nusslin 1913: 205, 1927: 291; Pfeffer 1933: 43; Pierce, W. D. 1917: 74; Rhumbler 1922: 279, 1927: 291; Saalas 1949: 342; Schimitschek 1955c: 79; Schuster 1918: 102; Schwerdtfeger 1944a: 183, 1950b: 44, 1957a: 189; Thaler 1902: 278, 1903: 400;Tullgren 1916: 104; Wachtl 1901: 381; Weber, H. 1926: 577; Wichmann 1927b: 352. (**ec**) Andreev 1988; Balazy 1965a; Hirschmann & Wisniewski 1982, 1983; Kangas 1937; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1980b, 1983; Kleine 1908c: 181, 1909a: 44, 78, 1944: 74; Kostenko 1929; Kostin 1964: 106; Leclercq, Simon, & Verstraeten 1967; Naumann-Etienne 1978a; Nosek 1959a: 118; Nuorteva & Nuorteva 1968; Nusslin 1927: 291; Palm 1958: 22, 24; Palmen 1944: 60, 1946: 194; Pfeffer 1923a: 330, 1928b: 9, 1933: 43, 1943b: 181; Poinar 1975: 159; Ruhm 1956b: 3, 1958: 295; Saalas 1928: 651, 1949: 342; Schuster 1918: 102; Schwerdtfeger 1944a: 183, 1950b: 44, 1957a: 189; Sedlaczek 1935a: 163; Stora 1938: 20; Uchastnova 1988: 40; Vietinghoft 1924: 327; Wiackowski 1957a: 95; Wisniewski & Michalski 1984; Yanovskii 1977b. (**hb**) Altum 1881c: 268; Anonymous 1921p: 4, 1946i: 1, 3; Barbey 1901: 10, 18, 44, 1925: 204; Binzer 1881a; Browne 1968: 343; Budge 1949; Budkov 1897; Chararas 1962c: 306; Chorbadzhievo 1929; Dombrowsky 1887; Eckstein 1889, 1926: 577; Eichhoff 1881a: 36, 90; Elton et al. 1964; Escherich 1923b: 480; Evans 1952: 141; Everts 1903: 752; Feytaud 1950a; Fuchs 1904a; Gabler 1955; Gornostaev 1916: 311; Gyorfi 1957; Hagedorn 1903a; Henschel 1876a: 87, 240, 1880b: 257, 1895a: 135; Hess 1880, 1898: 381; Hess & Beck 1914: 249, 1927: 303; Joly 1976; Judeich & Nitsche 1895: 453; Karpinski 1933b: 24; Karpinski & Strawinski 1948: 154; Kemner 1919: 176; Knoche 1905: 354; Lengerken 1939: 61, 1954: 82; Marcu 1941: 402; Munro 1926: 57; Naumann-Etienne 1978a; Nordlinger 1856: 37; Nosek 1959a: 118; Nunberg 1929: 101; Nuorteva 1956c: 92; Nusslin 1898: 277, 1913: 205; Petrenko 1966; Pfeffer 1941b: 2; Postner 1974: 394; Ratzeburg 1837: 180, 1839: 159, 219; Rhumbler 1922: 279, 1927: 291; Saalas 1913a: 69, 80, 1949: 342, 1952: 217; Schwerdtfeger 1944a: 183, 1957a: 189; Sedlaczek 1935a: 163; Stark 1926a: 333, 1952: 217; Taschenberg 1880: 210; Tschorbadjiev 1929: 163; Wachtl 1901: 381; Weber, H. 1926: 577; Wichmann 1927b: 352; Zethner-Moller & Rudinsky 1967: 898. (**ds**) Acloque 1896; Allen, A. 1951b; Ammann & Knabl 1923; Andersch 1851; Arnoldi et al. 1955: 676; Audras & Schaefer 1957; Barthe 1896; Bau 1888; Bedel 1888b; Bejer-Petersen & Jorum 1977: 16; Benick 1921; Bistrom 1978; Blanchere & Robert 1889; Borchert 1951; Brakman 1966: 204; Brancsik 1871, 1906; Browne 1968: 343; Budkov 1897; Buresh & Lazarov 1956; Calwer 1884, 1893; Carpentier & Delaby 1908; Champion 1893; Chapuis 1869: 18, 1873: 226; Chararas 1962c: 306; Choo 1983: 59; Choo & Woo 1985: 164; Chorbadzhievo 1924d, 1929; Chrystal 1937; Crotch 1863; Csiki 1942c; Debatisse 1945; Dejean 1821, 1825, 1837; Eckstein & Butovitch 1931; Eder 1934; Eggers 1904; Ericson & Sandin 1893; Escherich 1923b: 480, 1932b; Esterberg 1928, 1959; Evans 1952: 141; Eyquem 1891; Fjellberg 1966: 154; Forster 1849: 440; Fowler 1891; Fuchs 1904a; Gaubil 1849: 128; Gillerfors 1966; Gornostaev 1917; Gozis 1875: 79; Grune 1979: 51; Hagedorn 1903a, 1910d: 10; Hallett 1923c; Hansen, V. 1939, 1956, 1964: 459; Heinemann 1908a; Hellen 1947; Henschel 1895a: 135; Hepburn 1966; Heyden 1876: 296, 1898: 77; Heyden, Reitter, & Weise 1883: 181, 1891: 668, 1906: 710; Horion 1951; Huhta et al. 1986; Inouye 1949b; Jazentkovsky 1912: 288; Johnson & Halbert 1902: 818; Joly 1976; Judeich & Nitsche 1895: 453; Karpinski 1925: 216, 1926: 82, 1931: 23, 38, 1933b: 24; Karpinski & Strawinski 1948: 154; Kemner 1919: 176; Kersten 1933: 73; Kestercanek 1881a: 12; Klefbeck & Sjoberg 1960: 230; Kleine 1912a: 262, 267, 1912b: 162, 1913a: 34, 1914b: 248, 251, 1934a: 126; Kloft & Hinks 1945: 218; Ko 1969: 277; Koltze 1901: 152; Kostenko 1929; Kraatz 1869: 59; Krivolutskaya 1983; Kurenzov 1936a: 111, 1938a: 59; Kurir 1947c: 8; Lacordaire 1866: 358; Langhoffer 1915c: 157; Leclercq 1971; Leiler & Prutz 1977; Lentz 1857: 137; Lokaj 1868: 63; Lomnicki 1913b: 148; Lovendal 1890c: 210; Lucht 1987: 276; Lundberg 1980: 149, 1981: 151; Mahler 1987: 232; Matthew & Fowler 1883: 42; Mequignon 1936: 15; Munro 1921: 87; Munster 1928: 289; Murayama 1929b: 2, 1929e: 41, 1930a: 7, 1930b: 7, 1937b: 375; Nunberg 1928b: 88, 102, 1954: 20; Nusslin 1898: 277; Palm 1957: 46, 1986; Palmen 1944: 60, 1946: 194; Pfeffer 1928b: 9, 1931b: 74, 1933: 3–54, 1935: 159, 1947c: 11, 1947d: 127, 1950b: 76, 1984: 277, 1989a: 39; Pierce, W. D. 1917: 74; Pittioni 1943: 176; Postner 1974: 394; Prossen 1913: 82; Rapp 1934: 725; Ratzeburg 1837: 180, 1839: 159, 219; Redtenbacher 1858: 825, 1874: 367; Reitter 1869b: 153,

1894a: 62, 1916: 284; Roubal 1941: 261; Rye 1866c: 258; Saalas 1913a: 69, 80, 1931: 69; Sahlberg 1900: 104; Sainte-Claire & Mequignon 1938: 444; Schaufuss 1915: 1227; Schaum 1862: 100; Schedl 1960e: 171, 1971f: 146, 1980a: 12, 1981b: 49; Schilsky 1909: 188; Schiodte 1873: 99; Schwerdtfeger 1981: 194; Seidlitz 1872: 391, 1891a: 558; Siebke 1875: 281; Sharp & Fowler 1893: 34; Stark 1926a: 333, 1926b: 101, 1926j: 124, 1927b: 88, 1931a: 23, 1931d: 544, 1952: 217; Stein 1868: 113; Stein & Weise 1877: 163; Stephens 1829a: 147; Stierlin & Gautard 1871: 291, 1906: 225; Strohmeyer 1914a: 32; Sturm 1826: 156, 1843: 228; Thomson 1865: 349, 1868: 218; Tredl 1907: 9; Tschorbadjiev 1929: 163; Westhoff 1882: 236; Wichmann 1927a: 61; Wiepken 1883: 89; Winter, T. G. 1983: 51; Wood, S. L. 1992b: 85; Yanovskii 1974, 1977a; Yanovskii & Tegshzhargal 1985: 406. (**tx**) Acloque 1896; Bach 1854; Balachowsky 1949a: 132; Barbey 1901: 10, 18, 44; Beaver 1970a; Bedel 1888b; Bertolini 1872; Brancsik 1871; Carpentier & Delaby 1908; Chapuis 1869: 18, 1873: 226; Choo 1983: 59; Chorbadzhievo 1924d; Csiki 1909; Dejean 1821, 1825; Doebner 1860; Dombrowsky 1887; Duffy 1953; Eichhoff 1864b: 24, 1881a, 1883a: 101, 122; Endrodi 1957b; Erichson 1836: 51; Escherich 1923b: 481; Escherich & Escherich 1897; Everts 1903: 752; Fauvel 1889; Fleischer 1927; Formanek 1907: 28; Fuchs 1912a; Gabler 1955; Gemminger & Harold 1872: 2670; Grune 1979: 50, 51; Hagedorn 1910a: 46; Hansen, V. 1955, 1956, 1964: 459; Henschel 1876a: 87, 240, 1895a: 135; Jacquelin du Val & Fairmaire 1868: 99; Joly 1976; Judeich & Nitsche 1895: 453; Karpinski & Strawinski 1948: 154; Koch 1913: 22; Kuhnt 1913: 1053; Lacordaire 1866: 358; Lekander 1965: 197; Letzner 1891: 372; Lovendal 1889b: 33, 1890c: 210, 1898: 113; Lucht 1987: 276; Munro 1917: 123–158, 1919: 1–35, 1926: 1–27; Murayama 1930b: 7, 11, 30, 1937b: 375; Nordlinger 1856: 37; Nunberg 1954: 20; Pfeffer 1932b: 15, 1941b: 2, 1944b: 102, 1947c: 11, 1955a: 117, 1989a: 39; Portevin 1935: 321; Postner 1974: 394; Quaschik 1953: 35; Ratzeburg 1837: 180, 1839: 159, 219; Redtenbacher 1858: 825, 1874: 367; Reitter 1894a: 62, 1913a: 53, 1916: 284; Rhumbler 1922: 279, 1927: 291; Saalas 1913a: 69, 80, 1949: 342; Schedl 1934f: 1636, 1941a: 42, 1952f: 87, 1968c, 1980a: 12, 1981b: 49; Schimitschek 1955c: 79; Seidlitz 1872: 391, 1891a: 558; Spessivtsev 1913: 67, 1922a: 462, 1925a: 170, 1931: 28; Stark 1952: 217; Stephens 1829a: 147; Stierlin 1898: 431; Strohmeyer 1914e: 8; Taschenberg 1880: 210; Thomson 1865: 349, 1868: 218. (**ms**) Escherich 1932b; Heinemann 1908a; Henschel 1880b: 257, 1880c: 60; Ratzeburg 1871b: 40; Ritter 1929: 554.

simplex Rey 1892b: 30. Syntypes, sex?; not given, apparently France; not located. Synonymy: Schedl 1934f: 1636, Balachowsky 1949a: 132. References: (**ds**) Hagedorn 1910d: 8; Schilsky 1909: 188. (**tx**) Balachowsky 1949a: 132; Reitter 1913a: 53; Rey 1892b: 30; Schedl 1934f: 1636.

***parallelus* Chapuis** 1875: 196. Syntypes, sex?; Nipon et a Kiuskiu [Japan]; IRSNB, Brussels.

Figures: Nobuchi 1966d: pl. 1.

Distribution: Asia (Heilongjiang, Shaanxi, Sichuan in China/ Japan/ Korea/ Taiwan/ E USSR).

Hosts: *Pinus densiflora*, *P.* spp.

References: (**ay**) Sasakawa & Yoshiyasu 1983. (**cn**) Choo 1983: 60; Inouye 1949a: 13, 109, 1949b, 1949c; Ko & Morimoto 1985; Shiraki 1952. (**ec**) Kurenzov 1934a: 57; Pfeffer 1932a: 19. (**hb**) Kurenzov 1948b: 105, 1950d: 163; Stark 1952: 218; Stebbing 1909b: 14. (**ds**) Anonymous 1980g; Blandford 1894c; Choo 1983: 60; Choo & Woo 1985: 164; Hagedorn 1910d: 11; Kleine 1912b: 162, 1914b: 254, 1934a: 126; Ko 1969: 277; Krivolutskaya 1983; Kurenzov 1934a: 57; Murayama 1934c: 298, 1936a: 123, 1948: 2, 1949a: 12, 1951c: 3, 1953a: 5, 1953c: 147, 1955: 98; Nakane et al. 1963: 381; Nobuchi 1966b: 14, 1967: 19, 1985c: 4; Nohira & Ogawa 1986; Shiraki 1952; Stark 1931d: 543, 1952: 218; Yanovskii & Tegshzhargal 1985: 415. (**tx**) Blandford 1894d; Chapuis 1875: 196; Choo 1983: 60; Hagedorn 1910a: 46; Murayama 1934c: 298, 1936a: 123, 1953a: 5, 1954b: 156, 1955: 98; Nakane et al. 1963: 381, pl. 191; Niisima 1910a: 7; Nobuchi 1966b: 14, 1966d: pl. 1; Pfeffer 1932: 1–23, 1944b: 97, 101, 1955a: 113; Schedl 1934f: 1636, 1962q: 492, 1979c: 185; Sokanovskii 1958: 38; Stebbing 1909b: 14.

***plumbeus* Blandford** 1894d: 57. Syntypes, sex?; Nagasaki et a Hiogo, Japan; IRSNB, Brussels, automatic.

Figures: Nobuchi 1966d: pl. 1.

Distribution: Asia (Heilongjiang, Jilin, Liaoning, Shaanxi, Shandong in China/ Japan/ Korea/ Taiwan/ E USSR), Europe (Finland/ Sweden/ W USSR).

Hosts: *Pinus koraiensis*, *P. densiflora*, *Picea ajanensis*, *P. excelsa*, *P. obovata*, *P. jezoensis*, *Abies nephrolepis*.

References: (**ay**) Sasakawa & Yoshiyasu 1983. (**bv**) Choo, Woo, & Park 1988; Rozhkov 1970: 138. (**cn**) Anonymous 1980g; Inouye 1949a: 13, 109, 1949b, 1949c; Ko & Morimoto 1985; Oda, Kato, & Nobuchi 1964; Shiraki 1952. (**ec**) Kurenzov 1934a: 50; Wisniewski & Michalski 1984. (**hb**) Kurenzov 1948b: 105, 1950d: 163; Rozhkov 1970: 138; Stark 1952: 218; Stebbing 1909b: 14; Wang 1982. (**ds**) Anonymous 1980g; Arnoldi et al. 1955: 676; Blandford 1894c; Butovitsch & Heqvist 1947; Cho 1957; Choo 1983: 60; Choo & Woo 1985: 164; Choo, Woo, & Nobuchi 1983: 172, 1988a: 134; Choo, Woo, & Park 1983: 175, 1988; Hagedorn 1910d: 11; Inouye 1949b; Kleine 1912b: 162,

1914b: 254; Ko 1969: 277; Krivolutskaya 1983; Kurenzov 1934a: 50, 1936a: 111, 1938a: 59, 1941: 129–131, 1950: 163; Murayama 1934c: 298, 1936b: 116, 1937b: 371, 1948: 2, 1949a: 12, 1951c: 3, 1953a: 5, 1953c: 147, 1955: 98; Nakane et al. 1963: 381; Nobuchi 1966b: 14, 1967: 19, 1985c: 4; Pfeffer 1935: 157; Rozhkov 1970: 138; Shiraki 1952; Stark 1952: 218; Yanovskii & Tegshzhargal 1985: 415. (**tx**) Blandford 1894d: 57; Choo 1983: 60; Eggers 1933f: 55; Hagedorn 1910a: 46; Hansen, V. 1955: 175; Kurenzov 1941a: 130, 1948b: 105; Murayama 1934c: 298, 1937b: 371, 1953a: 5, 1954b: 156, 1955: 98; Nakane et al. 1963: 381, pl. 191; Niisima 1910a: 7; Nobuchi 1966b: 14, 1966d: pl. 1; Pfeffer 1944b: 97, 102, 1955a: 110; Schedl 1934f: 1636, 1963q: 478; Stark 1952: 218; Stebbing 1909b: 14.

obscurus Chapuis 1875: 197. Syntypes, sex?; Nagasaki et a Hiogo, Japan; IRSNB, Brussels, preoccupied by Marsham 1802: 57. Synonymy: Murayama 1963b: 53.

References: (**ds**) Postner 1974: 395. (**tx**) Chapuis 1875: 197; Murayama 1963b: 53; Postner 1974: 395; Schedl 1934f: 1636, 1968c.

septentrionali Eggers 1923b: 135. Lectotype, sex?; Stockholm, Sweden; USNM, Washington, designated by Anderson & Anderson 1971: 29. Synonymy: Lekander 1965b: 197.

References: (**cn**) Kontkanen 1932: 62; Kurenzov 1935c: 189. (**ds**) Kontkanen 1932: 62; Krivolutskaya 1983; Kurenzov 1935c: 189; Stark 1931a: 23, 1931d: 544. (**tx**) Anderson, W. H. & Anderson 1971: 29; Eggers 1923b: 135, 1933f: 55; Hansen, V. 1955: 175; Lekander 1965b: 197; Schedl 1934b: 1636.

fushunensis Murayama 1940a: 235 (*Hylurgops*). Syntypes 2, ♂♀; Fushun, Manchuria; Murayama Collection in USNM, Washington. Synonymy: Wood 1992b: 83.

References: (**ds**) Murayama 1940a: 231, 235, 1942a: 54. (**tx**) Murayama 1940a: 231, 235; Wood, S. L. 1992b: 83.

***porculus* Erichson** 1836: 49. Holotype ♂; Pennsylvania [USA]; MNB, Berlin.

Figures: Swaine 1918a: pl. 21 (adult).

Distribution: North America (Manitoba, New Brunswick, Ontario, Quebec in Canada/ Alabama, Arkansas, Connecticut, District of Columbia, Florida, Georgia, Indiana, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, New Hampshire, New Jersey, New York, North Carolina, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Vermont, Virginia, West Virginia, Wisconsin in USA).

Hosts: *Pinus* spp.

Notes: (3) Blackman 1941: 10 (redescribed).

References: (**ay**) Thomas, J. B. 1967. (**bv**) Turnbow & Franklin 1980. (**cn**) Beal et al. 1952; Blackman 1950; Chamberlin 1924; Chenier & Philogene 1989a; Doane et al. 1936; Hopkins 1899c: 448; Lindquist, O. H. & Syme 1981: 58; Martin, J. L. 1965; Packard 1890; Smith, J. B. 1900: 365; Swaine 1918a: 78–79; Syme & Nystrom 1988: 56. (**ec**) Felt 1906: 752; Hines, J. W. & Heikkenen 1977; Tomalak, Welch, & Galloway 1989b: 20. (**hb**) Baker, W. L. 1972: 252; Beal & Massey 1945: 94–96; Blackman 1950; Bright 1976d: 48; Chittenden 1890; Doane et al. 1936; Drooz 1985: 340; Felt 1906: 752; Hopkins 1899c: 448; Packard 1890; Schwarz 1888a: 50; Skinner 1905: 248; Swaine 1918a: 78–79; Wood, S. L. 1982: 103. (**ds**) Anonymous 1926c: 517; Atkinson et al. 1991: 154; Beal & Massey 1945: 94–96; Beaulne 1956; Blackman 1950; Blackwelder 1939; Blackwelder & Blackwelder 1948; Blatchley & Leng 1916: 668; Bright 1976d: 48; Chamberlin 1925; Chittenden 1890; Deyrup & Atkinson 1987b: 67; Dodge 1938; Drooz 1985: 340; Hagedorn 1910d: 11; Henshaw 1885: 149; Hopkins 1893a: 143, 1899: 448; Hubbard & Schwarz 1878: 643; Kirk 1969, 1970; Kleine 1912b: 162, 1914b: 398, 1934a: 126; Lacordaire 1866: 358; Leng 1920: 339; Leonard 1928: 517; Lindquist, O. H. & Syme 1981: 58; Martin 1865: 40–43; Melsheimer 1853: 88; Packard 1890: 724; Provancher 1877: 28; Schedl 1971f: 146; Schwarz 1878d: 469, 1888a: 80; Smith, J. B. 1900: 365, 1910: 404; Swaine 1909: 145; Syme & Nystrom 1988: 56; Turnbow & Franklin 1980; Wood, S. L. 1982b: 103. (**tx**) Beal & Massey 1945: 94–96; Blackman 1941: 10, 12–13; Blandford 1898c: 5; Blatchley & Leng 1916: 668; Bright 1976d: 48; Dodge 1938: 14, 38; Eggers 1934b: 25; Eichhoff 1896: 605–606, 610; Erichson 1836: 49; Gemminger & Harold 1872: 2670; Hagedorn 1910a: 46; Lacordaire 1866: 358; LeConte 1868: 149, 174, 1876: 388–389, 1878a: 469; Schedl 1952k: 159, 1979c: 197; Swaine 1909: 145, 1917: 18, 1918a: 78–79; Syme & Nystrom 1988: 56; Thomas, J. B. 1967; Titus, Meikle, & Harrison 1985: 75; Wood, S. L. 1972b: 145, 1982b: 103.

carbonarius Fitch 1858: 730. Holotype ♀; Albany, New York [USA]; USNM, Washington. Synonymy: LeConte 1876: 389.

References: (**cn**) Harrington 1881: 33. (**ds**) Fitch 1858: 730; Hagedorn 1910d: 11; Leng 1920: 339; Swaine 1909: 146. (**tx**) Eichhoff 1896: 606; LeConte 1876: 389; Swaine 1909: 146; Zimmermann 1868: 149.

cavernosus Zimmermann 1868: 149 (*Hylurgus*). Lectotype ♂; Atlantic states [USA]; MCZ, Cambridge, designated by Wood 1982b: 103. Synonymy: Eichhoff 1896: 606.

References: (**cn**) Hopkins 1899c: 356. (**hb**) Hopkins 1899c: 255–347. (**ds**) Frost 1912: 308; Hamilton 1894a: 36; Henshaw 1885: 149; Hubbard & Schwarz 1878: 643; Leng 1920: 339; Provancher 1877: 574; Smith, J. B. 1900: 365; Swaine 1909: 14. (**tx**) Eichhoff 1896: 606,

610; Gemminger & Harold 1872: 2669; LeConte 1868: 174, 1876: 389; Provancher 1877: 574; Swaine 1909: 146; Wood, S. L. 1982b: 103; Zimmermann 1868: 149.

granosus Chapuis 1869: 17. Syntypes, sex?; Southern and Middle states [USA]; IRSNB, Brussels. Synonymy: LeConte 1876: 389.

References: (**ds**) Leng 1920: 339; Swaine 1909: 146. (**tx**) Blackman 1941: 11; Chapuis 1869: 17, 1873: 225; Eggers 1934b: 25, 27; Eichhoff 1896: 606, 610; LeConte 1876: 389; Swaine 1909: 146.

scaber Swaine 1917: 18. Holotype, sex?; Virginia [USA]; CNCI, Ottawa. Synonymy: Eggers 1934b: 25.

References: (**hb**) Blackman 1950; Swaine 1918a: 77. (**ds**) Anonymous 1926c: 517; Blackman 1950: Leng 1920: 339; Leonard 1928: 517. (**tx**) Bright 1967b: 674; Eggers 1934b: 25; Hoebeke 1978; de Ruette 1970: 101; Swaine 1917: 18–19, 1918a: 77.

swainei Eggers 1934: 25. Holotype ♂; Frater, Ontario, Canada; USNM, Washington. Synonymy: Blackman 1941: 11.

References: (**ds**) Blackwelder 1939. (**tx**) Anderson, W. H. & Anderson 1971: 33; Blackman 1941: 11; Eggers 1934: 25; Schedl 1952k: 159, 1979c: 249.

webbi Blackman 1941: 10. Holotype ♀; Elmore, South Dakota [USA]; USNM, Washington. Synonymy: Wood 1972b: 146.

References: (**ds**) Blackwelder & Blackwelder 1948. (**tx**) Blackman 1941: 10; Wood, S. L. 1972b: 146.

canadensis Blackman 1941: 15. Holotype ♀; Aweme, Manitoba, Canada; USNM, Washington. Synonymy: Wood 1972b: 146.

References: (**ds**) Blackwelder & Blackwelder 1948. (**tx**) Blackman 1941: 15; Wood, S. L. 1972b: 146.

***retifer* Wood** 1982a: 227. Holotype ♂; Km 54 Carretera Toluca-Morelia, Mexico, Mexico; Wood Collection.

Distribution: North America (Mexico in Mexico).

Hosts: *Pinus montezumae*.

References: (**tx**) Wood, S. L. 1982a: 227.

***ruber* Swaine** 1915b: 367. Holotype, sex?; Golden, British Columbia, Canada; CNCI, Ottawa.

Distribution: North America (Alberta, British Columbia, Northwest Territories in Canada/ Arizona, Idaho, Montana, Oregon, Washington in USA).

Hosts: *Pseudotsuga menziesii*.

References: (**bv**) Rudinsky 1966b: 356–361, 1966c: 218–219; Rudinsky & Daterman 1964a. (**cn**) Anonymous 1963j; Brown, R. W. & Winter 1981; Chamberlin 1924; Doane et al. 1936; Essig 1926: 518, 1958: 518; Keen 1952c: 155; Schuder 1969: 81; Swaine 1918a: 78–79. (**ec**) Chamberlin 1918a; Ross, D. A. 1967; Zethner-Moller & Rudinsky 1967: 908–90. (**hb**) Bright 1976d: 49; Bright & Stark 1973: 26; Chamberlin 1958: 116; Doane et al. 1936; Essig 1926: 518, 1958: 518; Keen 1952c: 155; Rudinsky & Daterman 1964a; Swaine 1918a: 78–79; Wood, S. L. 1982b: 99. (**ds**) Anonymous 1963j; Bright 1976d: 49; Bright & Stark 1973: 26; Brown, R. W. & Winter 1981; Chamberlin 1918a: 25, 1958: 116; Essig 1926: 518, 1958: 518; Furniss, R. L. & Carolin 1977: 364; Hopping 1922; Keen 1929a: 25, 1952c: 155; Kleine 1934a: 126; Leng 1920: 339; Patterson & Hatch 1945: 151; Ross, D. A. 1967; Schuder 1969: 81; Smith, G. S. 1929; Winter, T. G. 1983: 46; Wood, S. L. 1972a: 401, 1982b: 99. (**tx**) Blackman 1941: 8–9; Bright 1967b: 674, 1976d: 49; Chamberlin 1939: 214–215; 1958: 116; Hoebeke 1978; Keen 1929a: 2; Swaine 1915b: 367, 1918a: 78–79; Wood, S. L. 1972a: 401.

***salebrosus* Eichhoff** 1868b: 146. Lectotype ♂; Carolina [USA]; USNM, Washington, designated by Wood 1982b: 97.

Distribution: North America (Alabama, Arkansas, Florida, Georgia, Louisiana, Maryland, Mississippi, New Jersey, North Carolina, South Carolina, Texas, Virginia in USA).

Hosts: *Pinus* spp.

Notes: (3) Blackman 1941: 5 (redescribed).

References: (**bv**) Atkinson, Foltz, & Connor 1988; Goldman, Cleveland, & Parker 1978; Turnbull & Franklin 1980. (**hb**) Atkinson, Foltz, & Connor 1988; Baker, W. L. 1972: 252; Beal & Massey 1945: 94–96; Blackman 1950; Deyrup & Atkinson 1987a: 64; Drooz 1985: 340; Swaine 1918a: 77; Wood, S. L. 1982b: 9. (**ds**) Atkinson 1991: 154; Beal & Massey 1945: 94–96; Blackman 1941: 5, 1950; Blatchley & Leng 1916: 668; Deyrup & Atkinson 1987a: 64; Drooz 1985: 340; Frost 1975: 37; Goldman, Cleveland, & Parker 1978; Hagedorn 1910d: 11; Kirk 1969, 1970; Kleine 1912b: 162, 1914b: 392; Leng 1920: 339; Leonard 1928: 517; Sturm 1843: 229; Swaine 1909: 146; Turnbull & Franklin 1980; Wood, S. L. 1982b: 97. (**tx**) Beal & Massey 1945: 94–96; Blackman 1941: 5; Blandford 1898c: 5; Blatchley & Leng 1916: 668; Eggers 1929e: 54; Eichhoff 1868b: 146, 1896: 606–607, 610; Gemminger & Harold 1872: 2670; Hagedorn 1910a: 46; LeConte 1868: 177, 1876: 389; Rabaglia & Lanier 1981; Schedl 1979c: 218; Swaine 1909: 146, 1918a: 77; Wood, S. L. 1973c: 177, 1979b: 134, 1982b: 97.

scobinosus Eichhoff 1868b(May): 146. Syntypes, sex?; Carolina [USA]; Hamburg Museum, lost. Synonymy: Eggers 1929e: 54, Wood 1982b: 97.

Notes: (3) Blackman 1941: 7 (redescribed).

References: (**hb**) Beal & Massey 1945: 94–96. (**ds**) Anonymous 1926c: 517; Beal & Massey 1945: 94–96; Brimley 1942; Chapuis 1869: 23, 1873: 225; Hagedorn 1910d: 11; Kleine

1912b: 162, 1914b: 392; Leng 1920: 339; Swaine 1909: 147. (**tx**) Beal & Massey 1945: 94–96; Blackman 1941: 7–8; Chapuis 1869: 23, 1873: 225; Eggers 1929e: 54; Eichhoff 1868b: 146, 1896: 606; Gemminger & Harold 1872: 2670; Hagedorn 1910d: 46; LeConte 1876: 389; Schedl 1979c: 222; Swaine 1909: 147, 1918a: 78; Wood, S. L. 1973c: 177, 1982b: 97.

scabripennis Zimmermann 1868(September): 149. Syntypes, sex?; Atlantic states [USA]; MCZ, Cambridge. Synonymy: Blandford 1898c: 5.

References: (**ds**) Leng 1920; Swaine 1909: 146; Zimmermann 1868: 149. (**tx**) Blandford 1898c: 5; Eichhoff 1896: 606; Swaine 1909: 146; Zimmermann 1868: 149.

***scandinavieus* Lekander** 1965b: 199. Holotype ♀; Boda, Otland, Sweden; RCFS, Stockholm.

Distribution: Europe (Sweden).

References: (**ds**) Gillerfors 1966; Grune 1979: 51; Postner 1974: 396. (**tx**) Grune 1979: 51; Lekander 1965b: 199.

***subopacus* Blackman** 1941: 19. Holotype ♂; Capitan Mountains, New Mexico [USA]; USNM, Washington.

Distribution: North America (Colorado, New Mexico, Utah, Wyoming in USA).

Hosts: *Abies lasiocarpa*.

References: (**hb**) Chamberlin 1958: 117; Wood, S. L. 1982b: 107. (**ds**) Blackwelder & Blackwelder 1948; Chamberlin 1958: 117; Hellen 1947; Nunberg 1928b: 88; Wood, S. L. 1951a: 127, 1972a: 401, 1982b: 107. (**tx**) Blackman 1941: 19; Chamberlin 1958: 117; Wood, S. L. 1951a: 127, 1972a: 401, 1982b: 107.

***substriatus* Strohmeyer** 1914e: 7. Syntypes 2, sex?; Wernyi (Ala-Tau-Gebirge) und Juldus (Kuldscha) in Turkestan; Strohmeyer Collection.

Figures: Strohmeyer 1914e: 8 (adult), Stark 1952: 211 (adult).

Distribution: Asia (Turkey/ Turkestan in W USSR).

Notes: (3) Pfeffer 1944b: 101 (*piceae*, nomen nudum, Pfeffer 1965: 64 gives synonymy).

References: (**hb**) Kostin 1960: 131; Krivolutskaya 1960: 131; Stark 1952: 211. (**ds**) Kadyrov 1989; Kleine 1914b: 247; Marikovskii 1956: 76; Parfentev 1951: 428; Stark 1952: 211. (**tx**) Nunberg 1955: 75–80; Pfeffer 1944b: 101, 1965: 64; Schedl 1934f: 1636, 1968c; Sokanovskii 1958: 23, 38, 46; Stark 1952: 211; Strohmeyer 1914e: 7–8.

***suspectus* Bright** 1972d: 31. Holotype ♀; Hope River, St. Andrew Parish, Jamaica; BMNH, London.

Distribution: Antilles Islands (Jamaica).

References: (**ds**) Bright 1985c: 170. (**tx**) Bright 1972d: 31, 1985c: 170.

***techangensis* Tsai & Huang** 1964a: 233. Holotype ♂; Techang, Szechuan, China; IZAS, Beijing.

Distribution: Asia (Sichuan, Xizang [Tibet], Yunnan in China/ Assam in India).

Hosts: *Pinus armandii*, *P. insularis*, *P. tabulaeformis*, *P. yunnanensis*.

Notes: (1) Originally named as a subspecies of *parallelus* Chapius. Yin & Huang 1984: 44 (a good species).

References: (**ds**) Yin & Huang 1981: 556. (**tx**) Tsai & Huang 1964a: 233; Yin & Huang 1981: 556, 1984: 44.

***tenuis* Eichhoff** 1868b: 147. Syntypes, sex?; Amerique Boreale; Hamburg Museum, lost.

Figures: Atkinson 1989b: 326.

Distribution: North America (Hidalgo, Morelos in Mexico/ Alabama, Arizona, Arkansas, California, District of Columbia, Florida, Georgia, Idaho, Indiana, Kentucky, Louisiana, Maryland, Massachusetts, Mississippi, Nevada, New Mexico, New York, North Carolina, Oregon, Pennsylvania, South Carolina, Tennessee, Texas, Utah, Virginia, West Virginia in USA).

Hosts: *Pinus* spp.

Notes: (3) Blackman 1941: 22 (redescribed).

References: (**bv**) Atkinson, Foltz, & Connor 1988; Dixon & Payne 1979b; Roling & Kearby 1975b, 1977; Turnbow & Franklin 1980. (**cn**) Blackman 1950; Doane et al. 1936; Hopkins 1899c: 448; Roling & Kearby 1977. (**ec**) Dixon & Payne 1979; Felt 1906: 752; Hines, J. W. & Heikenen 1977; Roling & Kearby 1977. (**hb**) Atkinson, Foltz, & Connor 1988; Atkinson et al. 1986: 13; Baker, W. L. 1972: 252; Beal & Massey 1945: 94–96; Blackman 1922b, 1950; Bright 1976d: 49; Bright & Stark 1973: 25; Burgos & Saucedo 1983: 51; Chamberlin 1939: 211; Deyrup & Atkinson 1987a: 64; Doane et al. 1936; Drooz 1985: 340; Felt 1906: 752; Hopkins 1899c: 445, 448; Pierce 1907: 294; Schwarz 1888a: 80; Wood, S. L. 1982b: 96. (**ds**) Atkinson 1989b: 325; Atkinson & Equihua 1985a: 69; Atkinson, Foltz, & Connor 1988; Atkinson et al. 1986: 13; Beal & Massey 1945: 94–96; Blackman 1922b, 1950; Blatchley & Leng 1916: 668; Bright 1976d: 49; Bright & Stark 1973: 25; Burgos & Saucedo 1983: 51; Chamberlin 1939: 211; Chapuis 1869: 19, 1873: 227; Deyrup & Atkinson 1987a: 64, 1987b: 67; Drooz 1985: 340; Hagedorn 1910d: 12; Hamilton 1895a: 346, 578; Henshaw 1885: 149; Hubbard & Schwarz 1878: 469; Kirk 1969, 1970; Kleine 1912b: 162, 1914b: 385, 1934a: 126; Leng 1920: 339; Schwarz 1878d: 469, 1888a: 50; Snow 1907: 188; Swaine 1909: 147; Turnbow & Franklin 1980; Wood, S. L. 1982b: 96. (**tx**) Atkinson 1989b: 325–326; Beal & Massey 1945: 94–96; Blackman 1922b: 64, 1941: 22; Blatchley & Leng 1916: 668; Bright 1976d: 49; Chamberlin 1939: 211; Chapuis 1869: 19, 1873: 227; Eichhoff 1868b: 147; Gemminger & Harold 1872: 2670; Hagedorn 1910a: 46; LeConte 1868: 175, 1876: 388–389, 1878a: 469; Schedl 1979c:

251; Swaine 1909: 147; Wood, S. L. 1982b: 96; Zimmermann 1868: 149.

criticus Eichhoff 1868b: 147. Syntypes 2, sex?; Amerique Boreale; Hamburg Museum, lost. Synonymy: Blackman 1941: 22.
References: (**tx**) Blackman 1941: 22; Eggers 1929e: 54, 1939c; Eichhoff 1868b: 147.

pusillus Blackman 1941: 23. Holotype ♀; Florida [USA]; USNM, Washington. Synonymy: Wood 1972b: 146.
References: (**ds**) Blackwelder & Blackwelder 1948; DeLeon 1942a. (**tx**) Blackman 1941: 23; Wood, S. L. 1972b: 146.

parvus Blackman 1941: 24. Holotype ♀; Williams, Arizona [USA]; USNM, Washington. Synonymy: Wood 1972b: 146.
References: (**ds**) Blackwelder & Blackwelder 1948. (**tx**) Blackman 1941: 24–25; Wood, S. L. 1972b: 146.

minutus Blackman 1941: 25. Holotype ♀; Lake Taho, Nevada [USA]; USNM, Washington. Synonymy: Wood 1972b: 146.
References: (**cn**) Keen 1952c: 155; Schuder 1969: 81. (**hb**) Chamberlin 1958: 117; Keen 1952c: 155. (**ds**) Blackwelder & Blackwelder 1948; Chamberlin 1958: 117; Keen 1952c: 155; Schuder 1969: 81; Wood, S. L. 1972a: 400. (**tx**) Blackman 1941: 25; Chamberlin 1958: 117; Wood, S. L. 1972a: 400, 1972b: 146.

Tribe Hylesinini Erichson

Hylesinini [tribe]
References: Leng 1920:338; Lucas 1920:32; Nobuchi 1985c:6; Wood, S. L. 1978a:111, 1982b:108, 1986:36.

Hylesini
References: Balachowsky 1949a:83–84.

Phloeotrupides
References: Chapuis in Lacordaire 1866:357, 1869:111, 1873:219; Ferrari 1867a:3; Lacordaire 1866:357, 370.

Phloeotrupidae
References: Hagedorn 1908:369.

Phloeotrupinae
References: Hagedorn 1910a:24–25, 1910d:5.

Phloeotrupini
References: Handlirsch 1925:691.

Phloeobori
References: Blandford 1893d:426.

Phleoeborini
References: Hagedorn 1910a:24–25, 1910d:5; Hopkins 1915c:225.

Dactylipalpi
References: Blandford 1893d:426.

Hylastinides
References: Nusslin 1912b:273.

Alniphagini
References: Murayama 1963b:29, 1965b:29.

Genus *Hylastinus* Bedel

HYLASTINUS BEDEL 1888b: 388. Type-species: *Ips obscurus* Marsham, original designation.
Keys: Pfeffer 1984b: 11, Reitter 1913a: 45 for Europe.
References: (**ay**) Nobuchi 1969a: 52; Schonherr 1970b. (**bv**) Schonherr 1970b. (**hb**) Wood, S. L. 1986a: 38. (**ds**) Postner 1974: 413; Scheerpeltz & Winkler 1930: 256; Wood, S. L. 1986a: 38. (**tx**) Arnett 1960: 1041, 1968: 1041; Balachowsky 1949a: 102–105; Beal & Massey 1945: 58, 89; Bedel 1888b: 388; Blatchley & Leng 1916: 664–665; Bright & Stark 1973: 6, 11, 21; Bruck 1936a: 42; Chamberlin 1939: 116, 192–193, 1958: 53, 101; Dodge 1938: 17; Escherich 1923b: 479; Formanek 1907: 22–23; Hagedorn 1910d: 7; Karaman 1972: 64; Lucas 1920: 32, 341; Nunberg 1954: 39–40; Pfeffer 1984b: 11, 1989a: 28; Reitter 1913a: 27, 45; Schimitschek 1937: 44–46; Spessivtsev 1922: 464, 1925: 163, 1931: 86; Stark 1952: 182–184; Swaine 1909: 110, 1918a: 44, 73; Winkler 1932: 1635; Wood, S. L. 1961a: 42, 1982b: 108, 1986a: 37–38.

***achillei* Reitter** 1894a: 54. Holotype, sex?; Laverdure, Algier; NHMB, Budapest.
Distribution: Africa (Algeria), Asia (Syria).
Notes: (3) Schedl note in his collection lists this as a synonym of *obscurus* Marsham.
References: (**ds**) Eggers 1944c: 143; Hagedorn 1910d: 7; Kleine 1912b: 165, 1914a: 16; Reitter 1894a: 54; Schaufuss 1915: 1222. (**tx**) Eggers 1944c: 143; Hagedorn 1910a: 45; Pfeffer 1984b: 12; Reitter 1894a: 54, 1913a: 46; Schedl 1934f: 163; Semenov 1902: 27.

***fankhauseri* Reitter** 1894a: 54. Syntypes, sex?; Schweiz; NHMB, Budapest.
Distribution: Europe (Austria/ SW France/ N Italy/ Switzerland).
Hosts: *Cytisus laburnum, C. alpinum, C. triflorus*.
Notes: Balachowsky 1949a: 103 (elevated to species rank from subspecies of *obscurus* Marsham).
References: (**ay**) Escherich 1923b: 479; Fuchs 1912a; Marcu 1933a: 33; Nusslin 1911a: 51, 59, 1912c: 28. (**bv**) Barr, B. A. 1969: 641. (**cn**) Escherich 1923b: 479; Grandi 1951; Nusslin 1913: 240; Rhumbler 1927: 292; Schimitschek 1937c: 47, 1955c: 77. (**ec**) Kleine 1908c: 181; Sedlaczek 1935a: 162. (**hb**) Barbey 1901: 2, 18, 47, 1905; Bargmann 1906; Beffa 1949, 1961; Cecconi 1924; Egger 1974b; Escherich 1923b: 479; Fuchs 1906b, 1907: 12, 46; Grandi 1951; Hennings 1908d; Lengerken 1939: 52, 1954: 72; Masutti 1964; Nusslin 1913: 240; Pruess 1957b: 2339; Rhumbler 1927: 292; Sedlaczek 1935a: 162. (**ds**) Balachowsky 1943a; Barbey 1905; Beffa 1949; Breit 1903; Escherich 1923b: 479; Fuchs 1905a, 1906b, 1907: 12, 46; Hagedorn 1910d: 9; Horion 1951; Kleine 1912a: 264, 266, 1912b: 165, 1913a: 34, 1934a: 127; Langhoffer 1915c: 157; Linder 1953: 71; Nunberg 1964a: 233; Pfeffer 1989a: 29; Pittioni 1943: 176; Prossen 1913: 82; Rapp 1934: 722; Reitter 1916: 280; Sainte-Claire & Mequignon 1938: 444; Schaufuss 1915: 1222; Schedl 1980a: 7; Schilsky 1909: 187; Tredl 1907: 8. (**tx**) Balachowsky 1943a: 168, 1949a: 103; Barbey 1901: 2, 18, 47; Beffa 1949, 1961; Escherich 1923b: 479; Fuchs 1912a; Hagedorn 1910a: 45; Nusslin 1911a: 51, 59, 1912c: 280; Pfeffer 1955a: 103, 1984b: 12; Portevin 1935: 318; Quaschik 1953: 35; Reitter 1894a: 54, 1913a: 46, 1916: 280; Rhumbler 1927: 292; Schedl 1934f: 1635, 1980a: 7; Schimitschek 1937c: 47, 1955c: 77; Spessivtsev 1919: 251.

***obscurus* (Marsham)** 1802: 57 (*Ips*). Syntypes, sex?; probably England; presumably in BMNH, London, not located.
Figures: Bright 1976d: 200, 205 (adult).
Distribution: Africa (Algeria/ Canary Islands/ Madeira Island/ Morocco), Europe (Austria/ Belgium/ Denmark/ England/ France/ Germany/ Italy/ Portugal/ Spain/ Switzerland/ W USSR/ Yugoslavia), North America (introduced: British Columbia, Nova Scotia, Ontario, Quebec in Canada/ introduced: California, Connecticut, Idaho, Indiana, Maryland, Massachusetts, Michigan,

Montana, New Hampshire, New Jersey, New York, Ohio, Oregon, Pennsylvania, Utah, Virginia, Washington, Wisconsin in USA), South America (introduced: Chile).

Hosts: *Medicago sativa, Melilotus* sp., *Ononis natrix, Spartium scoparium, Trifolium pratense, Ulex europaeus, Cytisus biflorus, C. hirsutus, C. laburnum, C. nigricans.*

Notes: (1) Bedel 1888b: 388 (to *Hylastinus*). (3) Schedl 1960b: 162 and note in his collection lists as synonyms *granulatus* Eggers, *elongatus* Eggers, *eichhoffi* Eggers; all are nomen nudums.

References: (**ay**) Aslam 1961: 439, 460, 471. (**bv**) Grune 1979: 77; Gustafson, J. & Morrison 1960b; Kamm & Buttery 1984; Leath & Byers 1973; Meixner 1937: 1218. (**cn**) Anonymous 1968f; App 1951: 68–69, 1952: 37–38, 1956: 161–164, 1960: 2969–2972; App & Everly 1950; Armitage et al. 1953: 232; Balachowsky 1963a: 1272; Beaulieu 1929; Blackburn & Stivers 1952: 7–8; Crosby & Leonard 1916: 2864; Davidson & Lyon 1987: 253; Davis 1954: 154; Dean 1909: 71, 1916: 3; Deane & Morrison 1957a: 34–35, 1957b: 28; Dickason & Everly 1955: 13–14; Eckstein 1926: 572; Elliott 1952: 25–27; Essig 1926: 517, 1958: 517; Everly 1956: 159–160; Everly & App 1949a, 1949b; Everly & Davis 1956: 70; Folsom 1909: 164, 1909b: 92–96; Gibson 1911: 12, 1912, 1913: 13; Garman 1906: 48; Gossard 1911: 79, 1914: 79; Graham & Newton 1959; Grandi 1951; Gustafson & Morrison 1958: 11–20, 1960b; Gyrisco & Marshall 1950: 82–86; Gyrisco et al. 1954: 327–331, 1959: 473–475; Hardee, Forsythe, & Gyrisco 1964; Hatch 1938: 194; Herrick 1915: 701; Hill, D. S. 1983: 620; Hopkins 1906c: 635; Huard 1916: 37; Hudson 1926: 92–93; Hunter 1899: 240–285; Koehler, C. S. 1959b: 2412; Koehler, C. S. & Gyrisco 1959a: 658, 1959b: 760; Koehler, C. S. et al. 1961; Lieberman 1951: 131–132; Lincoln 1942: 129; Lincoln et al. 1943: 127; Lininger 1948: 16; Lockhead 1914: 82, 1915: 60; Lockwood & Gammon 1952: 175; Manis & Portman 1950: 16; Marchal 1914: 9–13; Marshall et al. 1949: 315, 318; McCarthy & Emery 1894: 153; Metcalf & Flint 1928: 384, 1939: 439, 1951: 500; Miller 1955: 148–151; Mills 1906: 252, 1941: 12; Morrison & Gustafson 1958: 93; Morshel 1972: 119–120; Moznette 1917: 3; Muller 1912: 184; Negru 1966: 397–405; Newton, R. C. & Graham 1960: 865–867; O'Kane 1914: 116; Osborn 1939: 209–211; Parks 1921: 6, 10; Pettit 1910: 279; Pieters 1918: 682, 1923: 25; Poos 1943: 5; Poos et al. 1955: 183; Portman & Barr 1952: 5; Portman & Manis 1954: 16; Pruess 1956: 27, 70, 1957: 2339, 1959: 1143; Pruess & Weaver 1958: 491, 1959a: 1166–1167, 1959b: 3; Robertson 1919: 599; Rockwood 1926: 1–48; Sanderson 1899, 1912: 200, 1921: 189; Saunders 1882: 43; Schimitschek 1937c: 47, 1955c: 77; Schuh & Mote 1948: 118; Schwardt et al. 1947: 364; Shull 1944: 15; Soraci 1957: 90–91; Sorenson 1936: 219–223; Stear 1918: 187; Stirrett 1948: 68; Stookey 1920: 18–20; Swaine 1910d: 42, 1918a: 73; Thompson, L. S. 1966; Trappen 1934: 141; Troop 1911: 13; Wanka 1920: 202–213; Waters, N. D. 1964: 907–910; Weaver 1950: 20, 1954a: 50, 1954b: 57; Weaver & Haynes 1955: 190, 192; Weaver et al. 1957: 255; Webster 1898: 203, 1899: 143, 1901, 1905: 1, 1906: 1, 1908: 1, 1910: 1; Westgate & Hillman 1906: 114, 1908: 569, 1911: 37, 1922: 37; Wheeler 1950: 226, 293; Wichmann 1927b: 379; Woodside 1960: 449–450; Woodside & Turner 1956: 640; Zoog 1948: 460–470, 1950: 332–342, 1951: 511, 531. (**ec**) Buchet 1923; Byers, R. A. 1974; Charas 1959c; Kevan 1944: 278; Kleine 1908c: 181; Metcalf & Flint 1928: 384, 1939: 439, 1951: 500; Miller 1955: 151; Nosek 1959a: 118, 1959b: 87; Pfeffer 1923a: 330, 1942a: 18; Poos et al. 1955: 183; Pruess 1957b: 2339, 1959: 1143; Pruess & Weaver 1959a: 1166, 1959b: 3; Roubal 1946: 145; Schedl 1958d: 183; Sedlaczek 1935a: 153; Singh 1977: 98; Wichmann 1955a: 92. (**hb**) App & Everly 1950; Balachowsky 1963a: 1274; Beal & Massey 1945: 89–90; Beaulieu 1929; Beffa 1949, 1961; Bright 1976d: 40; Bright & Stark 1973: 21; Chamberlin 1939: 192, 1958: 101; Chapman 1869b: 6–8; Davidson & Lyon 1987: 253; Dean 1916; Deyrup & Atkinson 1987a: 401; Essig 1926: 517, 1958: 517; Evans 1952: 141; Folson 1909: 164; Gast et al. 1989: 381; Grandi 1951; Gustafson, J. & Morrison 1958, 1960a; Hill, D. S. 1983: 620, 1987: 339; Hudson 1925; Karpinski & Strawinski 1948: 154; Karsch 1883: 143; Koehler, C. S. 1959a, 1959b: 2412; Koehler, C. S. & Gyrisco 1959b: 766; Koehler, C. S. et al. 1961; Lengerken 1939: 52, 1941: 156, 1954: 72; Lincoln 1942: 129; Metcalf & Flint 1928: 384, 1939: 439, 1951: 500; Morrison, F. O. & Gustafson 1960; Morschel 1972: 119–120; Morstatt 1924: 44; Munro 1926: 53; Newton & Graham 1960; Nosek 1959a: 118, 1959b: 87; Pruess 1957b: 2339; Rockwood 1926: 1; Saunders 1882: 43; Sedlaczek 1935a: 153; Stark 1952: 182; Swaine 1918a: 73; Thompson, L. S. 1966; Webster 1910: 1; Westgate & Hillman 1922: 37; White, R. E. 1983; Wichmann 1927b: 379; Wood, S. L. 1982b: 108. (**ds**) Acloque 1896; Anonymous 1926c: 516, 1968f; Atkinson & Equihua 1970; Atkinson et al. 1991: 154; Audras & Schaefer 1957; Balachowsky 1963a: 1272; Bangsholt 1975: 95; Beal & Massey 1945: 89–90; Beaulne 1956; Bedel 1888b: 391; Beffa 1949; Bejer-Petersen & Jorum 1977: 10; Blatchley & Leng 1916: 664; Brakman 1966b: 204; Bright 1976d: 40, 200, 205; Bright & Stark 1973: 21; Britton 1920a; Buck 1955b: 191; Bucking 1930; Carpentier & Delaby 1908; Chaigneau 1959; Chamberlin 1917: 326, 1939: 192, 1958: 101; Chittenden 1895a; Correa de Barros 1913; Crowson 1971: 51; Davis 1894: 41, 47; Deane & Morrison 1957b; Deyrup 1981b: 2; Deyrup &

Atkinson 1987a: 64; Dodge 1938; Endrodi 1958b, 1986: 217; Essig 1926: 517, 1958: 517; Evans 1952: 141; Everts 1922: 639, 1925; Fauvel 1897; Fowler 1891; Frost & Dietrich 1929; Gast et al. 1989: 381; Grune 1979: 77; Hansen, V. 1939, 1956, 1964: 458; Hellen 1947; Heyden, Reitter, & Weise 1906: 709; Hill, D. S. 1983: 620; Horion 1951; Jansson 1940: 63; Johnson, W. F. & Halbert 1902: 818; Karpinski & Strawinski 1948: 154; Klefbeck & Sjoberg 1960: 228-229; Kleine 1914b: 407; Klofts & Hinks 1945: 217; Knowlton 1932: 79–83; Koca 1905: 191; Kozikowski 1921: 180; Langhoffer 1915c: 157; Leclercq 1971; Leng 1920: 338; Lengerken 1941: 156; Leonard 1928: 516; Lomnicki 1913b: 147; Lucht 1987: 276; Lundblad 1958: 489; Mahler 1987: 232; Matthews & Fowler 1883: 42; Murray 1853: 61; Negru 1966b: 399, 1968a: 454; Nunberg 1928b: 88, 97, 1954: 40, 1960: 155; Patterson & Hatch 1945: 150; Pfeffer 1989a: 29; Pimentel & Wheeler 1973: 663; Pittioni 1913: 174; Proctor 1946: 207; Rapp 1934: 721; Reitter 1894a: 54, 1916: 280; Riley & Howard 1894: 273; Roubal 1941: 258; Rye 1866c: 258, 1871a: 83, 1871b: 107; Sainte-Claire & Mequignon 1938: 443; Schaufuss 1915: 1222; Schedl 1963e: 154, 1967c: 68, 1971d: 425, 1971f: 146, 1972n: 349, 1978c: 293, 1980a: 8, 1981b: 59; Schedl, Lindberg, & Lindberg 1959: 13; Scheerpeltz & Winkler 1930: 256; Schilsky 1909: 187; Schmitz 1898: 157; Schuh & Mote 1948: 118; Sharp & Fowler 1893: 34; Smith, J. B. 1910: 404; Stark 1952: 182; Stephens 1829a: 147, 1830: 364, 1839: 209; Sturm 1843: 229; Swaine 1909: 110, 1911: 97, 1918a: 83; Webster 1899, 1901: 64, 1907: 67; Welch, R. C. 1968b: 121; Wichmann 1927a: 58, 1955a: 92; Winter, T. G. 1983: 45; Wood, S. L. 1972a: 401, 1982b: 108; Zoufal 1920: 20. (**tx**) Acloque 1896; Aslam 1961: 439–440, 459–460, 470–471; Balachowsky 1949a: 102, 1963a: 1274; Beal & Massey 1945: 89–90; Beaulieu 1923; Bedel 1888b: 388, 391; Beffa 1949, 1961; Benoit 1985: 134; Blatchley & Leng 1916: 664; Bright 1976d: 40; Bruck 1936a: 42; Carpentier & Delaby 1908; Chamberlin 1917: 326, 1939: 192, 1958: 101; Comstock 1948: 542; Crotch 1966; Csiki 1907; Dodge 1938: 14, 31; Edwards 1959; Eggers 1944c: 140; Endrodi 1957b; Everts 1922: 639; Fauvel 1889; Fleischer 1927; Formanek 1907: 23; Grune 1979: 76–77; Gustafson & Morrison 1960: 99; Hansen, V. 1956, 1964: 458; Hopkins 1914: 123; Hopkins & Rumsey 1896: 264; Illiger 1807: 321; Karpinski & Strawinski 1948: 154; Kuhnt 1913: 1057; Lucht 1987: 276; Marsham 1802: 57; Meixner 1937: 1218; Muesebeck 1942: 97, 1950: 133; Murayama 1937: 371; Negru 1966b: 399; Nunberg 1954: 40; Pfeffer 1942a: 18, 1955a: 104, 1984b: 12, 1989a:pl. 2; Portevin 1935: 317; Reitter 1894a: 54, 1913a: 45, 1916: 280; Schedl 1934f: 1635, 1952f: 86, 1960b: 162, 1980a: 8, 1981b: 59; Schedl, Lindberg, & Lindberg 1959: 13; Schimitschek 1937c: 47, 1955c: 77; Spessivtsev 1922a: 464, 1925a: 163, 1931: 34; Stephens 1829a: 147, 1829b: 12, 1830: 364, 1839: 209; Stresemann et al. 1989: 354; Swaine 1909: 110, 1913: 41–43, 1918a: 73; Titus, Meikle, & Harrison 1985: 75; Tredl 1907: 8, 20; Weber 1913: 51; White, R. E. 1983: 328–329; Wollaston 1871: 264; Wood, S. L. 1972a: 401, 1982b: 108. (**ms**) Dickel 1907; Hatch 1938: 194; Kevan 1962: 160; Koch 1977: 12; Pruess 1956: 27; Weber 1913: 5.

crenatus Olivier 1795b: 12 (*Scolytus*). Syntypes, sex?; Paris, France; presumably in MNHN, Paris, not located; preoccupied by Fabricius 1787: 37. Synonymy: Balachowsky 1949a: 102. Notes: (1) While in *Hylesinus*, this name became a junior homonym; *obscurus* became a replacement name.

References: (**tx**) Balachowsky 1949a: 102; Olivier 1795b: 12; Redtenbacher 1849: 852.

trifolii Muller 1807: 47 (*Dermestes*). Syntypes, sex?; central Europe; not located. Synonymy: Chapman 1869b: 6.

References: (**ay**) Fuchs 1912e; Imhoff 1856: 228. (**cn**) Berlese 1915; Case 1881: 465; DelGuercio 1915; Fletcher 1899; Kleine 1932a: 295; Knoth 1950: 55; Lintner 1881: 193; Lochhead 1900: 71; Lugger 1899a: 317; Muller 1803: 47; Packard 1890: 227; Rhumbler 1927: 292; Riley 1880a: 179, 1881b: 515 (or 866), 1889: 218; Smith, J. B. 1893: 99; Wachtl 1901: 381; Weber, H. 1926: 572; White 1888: 138. (**hb**) Bach 1864; Barbey 1901: 19, 47, 1905; Bedel 1876: 158; Berlese 1915; Budge 1949; Cecconi 1900: 160–165, 1924; DelGuercio 1915: 235–301; Eichhoff 1881: 97, 1892b: 99; Everts 1903: 748; Fagel & Guilleaume 1935: 335; Fuchs 1904, 1906b; Henschel 1895a: 136; Howard 1898; Kleine 1932a: 295; Knotek 1894a: 553; Kunstler 1871: 62–63; Lintner 1879: 631, 1881: 16, 193, 1882: 247, 1884: 142–164, 187–207; Lochhead 1900: 71; Lugger 1899a: 317; Morstatt 1924: 16, 44; Nordlinger 1855: 185, 1856: 41, 1869: 334; Nusslin 1898: 277; Packard 1890: 227; Poeteren 1935; Ratzeburg 1837: 131, 182, 1839: 158, 222; Rhumbler 1927: 292; Riley 1878: 248, 1879, 1880a: 179–180, 1881b: 515 (or 866), 1889; Riley & Howard 1889: 218; Rupertsberger 1879: 231, 1880: 226; Saunders 1881: 43–44, 1882: 43 Schmitt 1844: 389–397; Schroder 1896: 357; Taschenberg 1864: 272–273, 1880: 210; Titus & Pratt 1904: 66; Wachtl 1901: 38; Wahl 1927: 21–48; Weber, H. 1926: 572; Webster 1893a, 1893b, 1894, 1896; Weed 1888: 133, 1891: 53–55. (**ds**) Andersch 1851; Bach 1849c; Barbey 1901: 47, 1905; Barthe 1896; Bau 1888; Bedel 1876; Blanchere & Robert 1889; Brancsik 1906; Brandis 1890: 185; Calwer 1884, 1893; Cecconi 1897, 1900; Chapuis

1869: 23, 1873: 231; Chapuis & Candeze 1853; Crotch 1863; Dejean 1821, 1825, 1837; Eggers 1904; Eyquem 1891; Favre 1890; Fletcher 1891, 1897; Frennet 1948; Fricken 1889: 274; Fuchs 1906b; Gaubil 1849: 128; Gozis 1875: 79; Gredler 1866; Grill 1895: 307; Hagedorn 1910d: 12; Hall 1888; Hamilton 1889: 218, 1894b: 407; Henschel 1895a: 136; Henshaw 1887: 8, 1895: 44; Heyden 1876: 297; Heyden, Reitter, & Weise 1883: 181, 1891: 668; Judeich & Nitsche 1895: 454, 488; Kaltenback 1874: 121, 126, 776; Kleine 1912a: 161, 267, 1912b: 165, 1913a: 34, 1914a: 22, 1932a: 295, 1934a: 127; Knotek 1892a: 33, 1894a: 553; Kraatz 1869: 59; Lacordaire 1866: 359; Leder 1871: 131; Leng 1920: 338; Lentz 1857: 137; Lintner 1879: 631, 1881: 193, 1884: 142–164; Luna de Carvalho 1950: 15; McCarthy 1894: 98; Mjoberg 1903: 110; Nusslin 1898: 277; Perris 1876a: 253, 1877a: 413, 416; Ragusa 1924: 115; Ratzeburg 1837: 131, 182, 1839: 158, 222; Redtenbacher 1858: 825, 1874: 367; Pfeil 1865: 225; Saunders 1882: 43–44; Schaum 1859: 95, 1862: 100; Schilsky 1909: 187; Schwarz 1886: 55; Seidlitz 1891a: 559, 1891b: 604; Sharp & Fowler 1893: 34; Smith, J. B. 1892: 99; Stein 1868: 113; Stein & Weise 1877: 163; Stierlin 1898: 432; Stierlin & Gautard 1871: 291, 1906: 205; Sturm 1826: 156; Swaine 1909: 110; Tredl 1907: 8; Villa & Villa 1833: 26; Westhoff 1882: 237; White 1888: 138; Wiepken 1883: 89; Wollaston 1854: 304, 1857: 99, 1865: 2. (**tx**) Bach 1854, 1864; Balachowsky 1949a: 102; Barbey 1901: 19, 47; Bedel 1888b: 391; Bertolini 1872; Cecconi 1900; Chapman, T. A. 1869b: 6–8; Chapuis 1869: 23, 1873: 231; Chapuis & Candeze 1853; Dejean 1821, 1825; Doebner 1860; Eichhoff 1864b: 24, 1883a: 101, 123, 1896: 606; Everts 1903: 748; Fauvel 1887; Ferrant 1911; Fleischer 1905; Fricken 1889: 274; Fuchs 1912a; Gemminger & Harold 1872: 2671; Henschel 1895a: 136; Hagedorn 1910a: 46; Jacquelin du Val & Fairmaire 1868: 99; Knotek 1892a: 33; Lacordaire 1866: 359; Letzner 1891: 372; Leunis 1886: 178; Lovendal 1889b: 34, 1898: 118; Muller 1807: 47; Nordlinger 1856: 41; Perris 1877a: 413, 416; Ratzeburg 1837: 131, 182, 1839: 158, 222; Redtenbacher 1849a: 792, 1858: 825, 1874: 367; Rhumbler 1927: 292; Ruperts-berger 1879: 231, 1880: 226; Schedl 1934f: 1635; Schwarz 1886: 55; Seidlitz 1891a: 559, 1891b: 604; Semenov 1902: 221; Spessivtsev 1922: 464; Stierlin 1898: 432; Swaine 1909: 110, 1918a: 72–73; Taschenberg 1880: 210; Wollaston 1854: 304, 1857: 99, 1871: 264. (**ms**) Eggers 1910a, 1910b; Keler 1956: 283, 1963: 316.

crenatulus Duftschmidt 1825: 104 (*Hylesinus*). Syntypes, sex?; Linz, Austria; presumably in MNB, Berlin, not located. Synonymy: Letzner 1891: 372, Hagedorn 1910d: 12.

References: (**ds**) Duftschmidt 1825: 104; Schaum 1862: 100; Schilsky 1909: 187; Stein 1868: 11. (**tx**) Balachowsky 1949a: 102; Doebner 1860; Duftschmidt 1825: 104; Hagedorn 1910d: 12; Letzner 1891: 372; Redtenbacher 1849a: 365, 1849b: 27.

fuscescens Stephens 1830: 365 (*Hylurgus*). Syntypes, sex?; London, England; BMNH, London. Synonymy: Hagedorn 1910d: 12.

References: (**ds**) Stephens 1830: 365, 1839: 209. (**tx**) Hagedorn 1910d: 12; Stephens 1829b: 12, 1830: 365, 1839: 209.

piceus Stephens 1830: 365 (*Hylurgus*). Syntypes, sex?; London, England; BMNH, London. Synonymy: Hagedorn 1910d: 12.

References: (**tx**) Hagedorn 1910d: 12; Stephens 1830: 365.

kroaticus Fuchs 1912a: 49. Syntypes, sex?; Kroatia; not located. Synonymy: Schedl 1964k: 210.

References: (**ay**) Fuchs 1912a: 49. (**ds**) Csiki 1914; Kleine 1913a: 34; Langhoffer 1915c: 157; Pfeffer 1936: 89; Schaufuss 1915: 1222. (**tx**) Fuchs 1912a: 49; Michalski 1969b: 566; Pfeffer 1955a: 103; Reitter 1913a: 46; Schedl 1934f: 1635, 1964k: 210, 1979c: 70.

pilosus Eggers 1944c: 140. Holotype ♂?; Algeria; USNM, Washington. Synonymy: Schedl 1960b: 162.

References: (**tx**) Anderson, W. H. & Anderson 1971: 25; Eggers 1944c: 140; Quaschik 1953: 35; Schedl 1960b: 162.

***tiliae* Semenov** 1902: 271. Syntypes 9 ♂ ♀; Transcancasia: Borzhom, USSR, 4000'; not located.

Distribution: Europe (Caucasus in W USSR).

Hosts: *Tilia parvifolia, T. intermedia.*

References: (**bv**) Grune 1979: 77. (**hb**) Stark 1952: 183; Vinogradov-Nikitin 1911b. (**ds**) Grune 1979: 77; Hagedorn 1910d: 12; Heyden, Reitter, & Weise 1906: 709; Kleine 1912b: 165, 1934a; Postner 1974: 414; Schaufuss 1915: 1222; Stark 1927b: 87, 1952: 183. (**tx**) Grune 1979: 77; Hagedorn 1910a: 46, 1910d: 12; Michalski 1969b: 566; Pfeffer 1984b: 12; Postner 1974: 414; Reitter 1913a: 46; Schedl 1934f: 1635; Semenov 1902: 271; Spessivtsev 1931: 34; Stark 1952: 183.

Genus *Kissophagus* Chapuis

KISSOPHAGUS CHAPUIS 1869: 34. Type-species: *Hylesinus hederae* Schmitt, monobasic.

Keys: Reitter 1913a: 44.

Notes: (1) Bedel 1888b: 391, and a few others, used the invalid spelling *Cissophagus*.

References: (**ay**) Fuchs 1912: 53; Nusslin 1911: 3, 48, 80, 253, 1912: 25, 54, 81, 272–273, 283, 289; Schonherr 1970b. (**bv**) Barr, B. A. 1969: 642; Schonherr 1970b. (**hb**) Eichhoff 1881: 119;

Wood, S. L. 1986a: 38. (**ds**) Hagedorn 1910d: 24; Schedl 1981b: 60; Scheerpeltz & Winkler 1930: 256; Wood, S. L. 1986a: 38. (**tx**) Balachowsky 1949a: 85, 99–101; Bedel 1888b: 391; Butovitsch 1929: 16; Chapuis 1869: 34, 1873: 243; Eggers 1943c: 63; Eichhoff 1881: 119, 1883a: 37; Fuchs 1912: 53; Gemminger & Harold 1872: 2671; Hagedorn 1910a: 35, 57–58, 1910d: 24; Hopkins 1914: 124, 134, 1915: 226; Karaman 1972: 66; Lepesme 1942: 203–204; Lucas 1920: 356; Murayama 1958: 932, 1963: 31–33; Nunberg 1954: 41–42; Pfeffer 1955: 102, 1989a: 29; Reitter 1894: 54, 1913: 40, 44–45; Schedl 1958d: 188, 192, 1959n: 412–420, 1981b: 60; Scheerpeltz & Winkler 1930: 256; Schimitschek 1937: 44–48; Spessivtsev 1931a: 86; Stark 1952: 180; Winkler 1932: 1635; Wood, S. L. 1986a: 38.

***erinacellus* Wichmann** 1916: 18. Holotype, sex?; Brioni, Korfu, Istrien, Yugoslavia; not indicated.
Distribution: Europe (Yugoslavia).
Hosts: *Hedera* sp.
References: (**hb**) Wichmann 1916: 18. (**ds**) Kleine 1934a: 134; Luigioni 1929: 993. (**tx**) Luigioni 1929: 993; Schedl 1934f: 1635; Wichmann 1916: 18, 1916b: 432–433.

***hederae* (Schmidt)** 1843: 108 (*Hylesinus*). Syntypes, sex?; Germany; presumably MNB, Berlin.
Figures: Balachowsky 1949a: 101, 104, Pfeffer 1989a:pl. 2, Postner 1974: 414.
Distribution: Africa (Algeria), Europe (Austria/ England/ France/ Germany/ Greece/ Hungary/ Italy/ Spain/ W USSR).
Hosts: *Hedera helix*.
Notes: (3) Schedl 1963h: 261 (*gallicus* Eggers, nomen nudum, *hispidus* Eggers, nomen nudum, synonymy).
References: (**ay**) Burrini et al. 1988; Imhoff 1856: 228; Marcu 1933a: 33; Nusslin 1911a: 51, 59, 82, 255, 1912c: 282; Sedlaczek 1902b: 244. (**bv**) Grune 1979: 81. (**cn**) Grandi 1951; Kleine 1932a: 296; Nusslin 1913: 240; Rhumbler 1922: 282, 1927: 292; Wachtl 1901: 381. (**ec**) Carpon 1882; Kleine 1908c: 182; Nosek 1959a: 118, 1959b: 87; Nusslin 1927: 294; Perris 1856a: 244; Sedlaczek 1935a: 162. (**hb**) Bach 1864; Barbey 1901: 19, 53; Eggers 1906; Eichhoff 1881a: 37, 119; Grandi 1951; Henschel 1895a: 140; Kleine 1932a: 296; Lengerken 1939: 52, 1954: 72; Morov 1964: 88; Munro 1926: 53; Nordlinger 1856: 42; Nosek 1959a: 118, 1959b: 87; Nusslin 1898: 277, 1913: 240, 1927: 294; Perris 1856a: 244; Pfeffer 1989a: 29; Rhumbler 1922: 282, 1927: 292; Rupertsberger 1880: 226; Schmidt 1843: 108; Sedlaczek 1935a: 162; Stark 1952: 181; Wachtl 1901: 381. (**ds**) Acloque 1896; Audras & Schaefer 1957; Barthe 1896; Bauduer 1876; Bennett 1893; Brakman 1966b: 204; Calwer 1884, 1893; Chapuis 1869: 34, 1873: 243; Chapuis & Candeze 1853; Eggers 1904, 1906; Endrodi 1958b; Escalera 1919; Fowler 1882a, 1891; Ganglbauer 1882; Gaubil 1849: 127; Gozis 1875: 79; Grune 1979: 81; Hagedorn 1910d: 24; Henschel 1895a: 140; Heyden 1876: 297; Heyden, Reitter, & Weise 1883: 181, 1891: 668, 1906: 709; Horion 1951, 1956: 123; Kaltenback 1874: 292; Kleine 1912a: 263, 267, 1912b: 182, 1913a: 34, 1914b: 246, 1932a: 296, 1934a: 134; Kloft & Hinks 1945: 217; Kraatz 1869: 59; Lacordaire 1866: 260; Langhoffer 1915c: 156; Linder 1953: 71; Lucht 1987: 277; Luigioni 1929: 993; Matthews & Fowler 1883: 42; Nosek 1958b: 93; Nunberg 1954: 42; Nusslin 1898: 277; Paganetti-Hummler 1901: 150; Perris 1876a: 254, 1877: 414; Pfeffer 1936: 89, 1947d: 127, 1989a: 29; Pittioni 1943: 176; Postner 1974: 415; Ragusa 1924: 115; Rapp 1934: 722; Redtenbacher 1874: 369; Reitter 1894a: 55, 1916: 280; Rye 1871b: 106–107; Sainte-Claire & Mequignon 1938: 443; Schaufuss 1915: 1221; Schaum 1859: 95, 1862: 100; Schedl 1961b: 187, 1980a: 7, 1981b: 60; Scheerpeltz & Winkler 1930: 255; Schilsky 1909: 187; Schmidt 1843: 108; Seidlitz 1891a: 560; Sharp & Fowler 1893: 34; Stark 1927a: 87, 1952: 181; Stein 1868: 113; Stein & Weise 1877: 163; Tredl 1907: 10; Wessel 1877: 391; Wichmann 1927a: 57. (**tx**) Acloque 1896; Bach 1854, 1864; Balachowsky 1949a: 100; Barbey 1901: 19, 53; Bedel 1888b: 408; Chapuis 1869: 89, 1873: 242; Chapuis & Candeze 1853; Csiki 1907; Doebner 1860; Eichhoff 1864b: 26, 1881a: 37, 119, 1883a: 102; Endrodi 1957b; Fauvel 1887; Gebien 1907: 197; Gemminger & Harold 1872: 2671; Grune 1979: 81; Hagedorn 1909a, 1910a: 58, 1910d: 24; Henschel 1895a: 140; Hopkins 1914: 124; Kuhnt 1913: 1051; Lacordaire 1866: 360; Lucas 1900: 356; Lucht 1987: 277; Luigioni 1929: 993; Muller 1902: 116, 1903: 155; Nordlinger 1856: 42; Nunberg 1954: 42; Nusslin 1911a: 51, 59, 82, 255, 1912c: 282; Perris 1877a: 414; Pfeffer 1932b: 3, 1955a: 103, 1989a:pl. 2; Portevin 1935: 317; Postner 1974: 414; Redtenbacher 1849a: 792, 1849b: 27, 1874: 369; Reitter 1894a: 55, 1894c: 45, 1902b: 117, 1913a: 44, 1916: 280; Rey 1885: 128; Rhumbler 1922: 282, 1927: 292; Rupertsberger 1880: 226; Schedl 1934f: 1635, 1963h: 261, 1980a: 7, 1981b: 60; Schmidt 1843: 108; Seidlitz 1891a: 560; Semenov 1903: 80; Spessivtsev 1931: 34; Stark 1952: 181; Stresemann et al. 1989: 354. (**ms**) Eggers 1910b; Koch 1977: 12; Lucas 1920: 356.

vicinus Comolli 1837: 36 (*Hylesinus*). Syntypes, sex?; Provinciae Novocomi, Italy; not located.
Synonymy: Balachowsky 1949a: 100.
References: (**ds**) Bedel 1888b: 391, 408; Blanchere & Robert 1889; Calwer 1884; Hagedorn 1910d: 24; Heyden, Reitter, & Weise 1883: 181; Schaum 1859: 95, 1862: 100; Stark 1936a: 148; Stein 1868: 113; Stein & Weise 1877. (**tx**) Balachowsky 1949a: 100; Bedel 1888b: 391, 408; Comolli 1837: 36; Doebner 1860;

Eichhoff 1864b: 46, 1883a: 102; Fauvel 1889; Gemminger & Harold 1872: 2675; Hagedorn 1910a: 49; Schedl 1934f: 1634; Stark 1936a: 148. (**ms**) Eggers 1910b.

***novaki* Reitter** 1894c: 45. Syntypes, sex?; Dalmatia, Yugoslavia; NHMB, Budapest.
Figures: Grune 1979: 80.
Distribution: Africa (Algeria), Europe (Austria/ W USSR/ Yugoslavia).
Hosts: *Hedera helix, H. colchica*.
Notes: (3) Note in Schedl Collection treats this as a synonym of *hederae* (Schmidt).
References: (**bv**) Grune 1979: 81. (**cn**) Grandi 1951; Wachtl 1901: 381. (**ec**) Kleine 1908c: 182; Novak, P. 1952: 412. (**hb**) Eggers 1906; Grandi 1951; Stark 1952: 181; Wachtl 1901: 381. (**ds**) Balachowsky 1949a: 101; Eggers 1906, 1912f; Grune 1979: 81; Hagedorn 1910d: 24; Heyden, Reitter, & Weise 1906: 709; Horion 1951; Kleine 1912b: 182, 1913a: 307, 1914b: 246, 1934a: 134; Kocher 1953: 133; Langhoffer 1915c: 156; Luigioni 1929: 993; Novak, P. 1952: 412, 1964: 115; Pfeffer 1947d: 127; Pittioni 1943: 174; Ragusa 1924: 115; Reitter 1894a: 55, 1916: 280, 349; Schaufuss 1915: 1221; Schedl 1980a: 7; Schilsky 1909: 187; Stark 1927b: 87, 1952: 181; Tredl 1907: 10; Wichmann 1927a: 56–57. (**tx**) Balachowsky 1949a: 101; Csiki 1907; Eggers 1912f: 29, 1923b: 138–139; Grune 1979: 80–81; Hagedorn 1910a: 58; Luigioni 1929: 993; Muller 1902: 116, 1903: 155; Pfeffer 1955a: 103; Portevin 1935: 317; Reitter 1894a: 55, 1894c: 45, 1902b: 117, 1913a: 45, 1916: 280, 349; Schedl 1934f: 1635, 1980a: 9; Stark 1952: 181.

binodus Reitter 1913a: 45. Holotype, sex?; Istrien [Yugoslavia]; NHMB, Budapest. Synonymy: Reitter 1916: 349, Eggers 1923b: 138.
References: (**ds**) Horion 1935; Luigioni 1929: 993; Reitter 1916: 280; Schaufuss 1915: 1221. (**tx**) Eggers 1923b: 138; Luigioni 1929: 993; Reitter 1913a: 45, 1916: 280, 349; Schedl 1934f: 1635.

***nuesslini* Reitter** 1913a: 44. Holotype, sex?; Westlichen Kaukasus (Tscherkessien), USSR.
Distribution: Europe (W USSR).
Hosts: *Hedera helix*.
References: (**hb**) Stark 1952: 182. (**ds**) Kleine 1934a: 134; Schedl 1934f: 1635; Stark 1927b: 87, 1952: 182. (**tx**) Reitter 1913a: 44; Schedl 1934f: 1635; Stark 1952: 182.

Genus *Pteleobius* Bedel

PTELEOBIUS BEDEL 1888b: 392, 441. Type-species: *Bostrichus vittatus* Fabricius, subsequent designation by Hopkins 1914: 128.
Keys: Balachowsky 1949a: 94, Reitter 1913a: 42.
References: (**ay**) Nobuchi 1969a: 51; Schonherr 1970b. (**bv**) Schonherr 1970b. (**ec**) Apel 1983; Petrescu & Popescu 1960: 360–361. (**hb**) Wood, S. L. 1986a: 38. (**ds**) Postner 1974: 412; Schedl 1981b: 59; Winkler 1932: 1634; Wood, S. L. 1986a: 38. (**tx**) Apel 1983; Balachowsky 1949a: 94–96; Bedel 1888b: 388, 392–393, 441; Escherich 1923b: 479; Formanek 1907: 19; Karaman 1972: 67; Marcu 1930: 238–242; Murayama 1963: 16; Nunberg 1954: 37–39; Pfeffer 1955: 97, 1989: 28; Postner 1974: 412; Reitter 1913a: 40, 42–43; Schedl 1959r: 41, 1963h: 262, 1981b: 59; Scheerpeltz & Winkler 1930: 255; Schimitschek 1937: 45–46; Spessivtsev 1931: 33, 85; Stark 1952: 173–176; Stresemann et al. 1989: 353; Trappen 1935: 141; Wood, S. L. 1962: 77, 1966: 20, 1986a: 38.

***kraatzi* (Eichhoff)** 1864b: 307 (*Hylesinus*). Syntypes 5, sex?; Mauer des Nationalmuseums zu Pesth [Budapest, Hungary]; Hamburg Museum, lost.
Figures: Grune 1979: 72, Pfeffer 1989a:pl. 2, Stark 1952: 175.
Distribution: Africa (Algeria), Asia (Turkey), Europe (Austria/ Bulgaria/ France/ Greece/ Hungary/ Italy/ Spain/ W USSR).
Hosts: *Ulmus campestris, U. effusa, U. montana, U.* spp., rare in *Fraxinus excelsior, Sorbus aucuparia*.
References: (**ay**) Escherich 1923b: 479; Fuchs 1912a; Kleine 1921: 26; Marcu 1931c: 23. Nusslin 1912c: 282. (**bv**) Barr, B. A. 1969: 643; Grune 1979: 73; Maksimovic 1979a, 1979b. (**cn**) Berlese 1915; Chorbadzhievo 1929; Clinton & McCormick 1936; Escherich 1923b: 479; Garcia-Tejero 1955: 231; Gradojevic 1940; Grandi 1951; Kalandra & Pfeffer 1935: 6; Kholodkovskii 1912: 295; Maksimovic & Motal 1983; Manjlovic 1986b; Marcu 1926c: 60; Maslov 1963b; Nusslin 1913: 238; Pfeffer 1979: 149; Pierce, W. D. 1917: 96; Rhumbler 1922: 281, 1927: 293; Tubeuf 1936: 507; Vajda 1952: 114; Wachtl 1901: 381. (**ec**) Escherich 1935; Fleischer 1911; Gyorfi 1941b; Kleine 1908c: 180; Maksimovic 1979a, 1979b, 1986a; Maksimovic & Motal 1983; Nosek 1959a: 118, 1959b: 85; Novak, P. 1952: 412; Nuorteva 1957b: 52; Nusslin 1927: 293; Pfeffer 1928b: 2, 8, 1979: 149; Schatzmayr 1929: 16–18; Sedlaczek 1935a: 162; Sengonca & Leiss 1984; Thompson, W. R. 1943: 97; Wichmann 1916: 18; Zvierezomb-Zubovsky & Rostoff 1918: 1–36. (**hb**) Barbey 1901: 20, 62; Bargmann 1906; Beffa 1961; Berlese 1915; Cecconi 1924; Chorbadzhievo 1929; Clinton & McCormick 1936; Dombrowsky 1887; Eichhoff 1881: 140, 1892b: 99; Escherich 1923b: 479; Everts 1903: 745; Goidanich 1946: 100; Grandi 1951; Gyorfi 1957; Henschel 1895a: 149; Karpinski & Strawinski 1948: 154; Kholodkovskii 1912: 295; Maksimovic 1979a, 1979b; Manjlovic 1986b; Marcu 1941: 402; Maslov 1963a: 80–100, 1963b, 1963c: 848; Nosek 1959a: 118, 1959b: 85; Nusslin 1898: 275, 1906b: 14, 1913: 238, 1927: 293; Orest 1927: 59; Pfeffer 1942a: 11; Postner 1974: 412; Rhumbler 1922: 281, 1927: 293; Rupertsberger 1880: 227; Schwerdtfeger 1981: 187; Sedlaczek

1935a: 162; Spessivtsev 1913a: 55; Stark 1926a: 330, 333, 1952: 174; Tschorbadjiev 1929: 161; Wachtl 1901: 381; Wichmann 1916: 18. (**ds**) Acloque 1896; Audras & Schaefer 1957; Barthe 1896; Bedel 1888b: 411; Blanchere & Robert 1889; Brakman 1966b: 203; Brancsik 1906; Bucking 1932; Buresh & Lazarov 1956; Calwer 1884, 1893; Carpentier & Delaby 1908; Chapuis 1869: 30, 1873: 232; Chorbadzhievo 1929; Clinton & McCormick 1936; Endrodi 1958a, 1958b; Escalera 1919; Escherich 1923b: 479, 1932b; Everts 1922: 639, 1925; Eyquem 1891; Fuchs 1905a; Ganglbauer 1982; Gozis 1875: 79; Grune 1979: 73; Gyorfi 1941b; Hagedorn 1910d: 17; Henschel 1895a: 149; Heyden, Reitter, & Weise 1883: 181, 1891: 669, 1906: 709; Horion 1951; Karaman 1971; Karpinski 1948a: 173; Karpinski & Strawinski 1948: 154; Keler 1925b: 271; Kleine 1912a: 267, 1912b: 173, 1913a: 34, 85, 87, 1934a: 130; Koca 1905: 191; Lacordaire 1866: 363; Leclerq 1971; Lucht 1987: 277; Luigioni 1929: 992; Marcu 1926c: 60; Negru 1966b: 399, 1968a: 454; Negru & Rosca 1967: 141; Novak, P. 1952: 412; Nunberg 1928b: 88, 97, 1954: 39; Nusslin 1898: 275; Orest 1926c: 60; Palm 1976; Pascovici 1962; Perris 1876a: 255, 1877a: 415; Pfeffer 1928b: 218, 1931b: 73, 1947d: 126, 1989a: 28; Pierce, W. D. 1917: 96; Pittioni 1943: 174; Pjatnitskii 1930a: 163; Postner 1974: 412; Reitter 1894a: 52, 1916: 279; Revy & Siroki 1942: 82; Roubal 1941: 257; Ruskov 1928c: 61; Sainte-Claire 1914: 469; Sainte-Claire & Mequignon 1938: 443; Schaufuss 1915: 1220; Schedl 1980a: 6, 1981b: 60; Schilsky 1893: 356, 1909: 187; Schwerdtfeger 1981: 187; Stark 1926a: 330, 333, 1926g: 154, 1927b: 87, 1952: 174; Stein 1868: 113; Stein & Weise 1877: 163; Tredl 1907: 8; Tschorbadjiev 1929: 161; Wichmann 1927a: 56. (**tx**) Acloque 1896; Balachowsky 1949a: 95; Barbey 1901: 20, 62; Bedel 1888b: 393, 414; Beffa 1961; Bertolini 1872; Carpentier & Delaby 1908; Ceballos 1945; Chapuis 1869: 30, 1873: 232; Csiki 1907; Dombrowsky 1887; Eichhoff 1864b: 307, 1868b: 403, 1881a: 39, 140, 1883a: 103, 126; Endrodi 1957b; Escherich 1923b: 479; Everts 1903: 745, 1922: 639; Fleischer 1927; Formanek 1907: 19; Fuchs 1912a; Gebien 1907: 197; Gemminger & Harold 1872: 2674; Grune 1979: 72–73; Hagedorn 1910a: 48; Henry 1892: 13; Henschel 1895a: 149; Kalandra & Pfeffer 1935: 1–17; Karaman 1971; Karpinski & Strawinski 1948: 154; Kuhnt 1913: 1050; Lacordaire 1866: 363; Lucht 1987: 277; Luigioni 1929: 992; Negru 1966b: 399; Nunberg 1954: 39; Nusslin 1912c: 282; Perris 1877a: 415; Pfeffer 1932b: 13, 1942a: 11, 1955a: 98, 1989:pl. 2; Portevin 1935: 317; Postner 1974: 412; Quaschik 1953: 35; Reitter 1887b: 194, 1894a: 52, 1913a: 43, 1916: 279; Rhumbler 1922: 281, 1927: 293; Rupertsberger 1880: 227; Schedl 1934f: 1634, 1959r: 41, 1980a: 6, 1981b: 60; Spessivtsev 1913a: 55–56, 1931: 32–33; Stark 1952: 174; Wichmann 1916: 18. (**ms**) Escherich 1932b; Kholodkovskii 1893: 390.

putonii Eichhoff 1868b: 403 (*Hylesinus*). Syntypes, sex?; Madrid, Spain; Hamburg Museum, lost. Synonymy: Hagedorn 1910d: 17, Schedl 1934f: 163.

References: (**ds**) Calwer 1893; Heyden, Reitter, & Weise 1883: 181; Schilsky 1909: 187; Stein 1868: 113; Stein & Weise 1877: 163. (**tx**) Balachowsky 1949a: 95; Eichhoff 1868b: 403; Gemminger & Harold 1872: 2675; Hagedorn 1910d: 17; Reitter 1887b: 194; Schedl 1934f: 163.

***vittatus* (Fabricius)** 1792: 368 (*Bostrichus*). Syntypes (2), sex?; Holsatiae ligno Dom Daldorff; UZMC, Copenhagen.

Figures: Duffy 1953: 11, Grune 1979: 72, Pfeffer 1989a:pl. 1, Postner 1974: 411, Stark 1952: 175.

Distribution: Asia (Israel/ Turkey), Europe (Austria/ Bulgaria/ England/ France/ Germany/ Greece/ Hungary/ Italy/ Poland/ Romania/ Spain/ Switzerland/ W USSR).

Hosts: *Ulmus campestris, U. effusa, U. montana.*

Notes: (3) Stephens 1829a: 146, (*Ips maculosus* Kirby, nomen nudum, synonymy). Schedl 1958k: 141 (*Hylesinus debilis* Chapuis, nomen nudum, synonymy).

References: (**ay**) Escherich 1923b: 479, 497; Fuchs 1912a; Kleine 1921: 26; Marcu 1931c: 238; Nunberg 1928a: 140; Nusslin 1911a: 59, 1912c: 282. (**bv**) Barr, B. A. 1969: 643; Grune 1979: 73; Klimetzek, Bartels, & Francke 1989; Maksimovic 1979a: 285; Mori & Paupoomchareon 1989; Prell 1926: 68; Wichmann 1953a: 107. (**cn**) Acatay 1943a: 60; Barbey 1925: 603; Buismann 1933a; Chorbadzhievo 1926: 175–241, 1929; Clinton & McCormick 1936; Eckstein 1926: 577; Escherich 1923b: 479, 497; Gabler 1955; Garcia-Tejero 1955: 231; Georgescu et al. 1957: 357, 446; Goidanich 1937; Goidanich & Goidanich 1934; Grandi 1951; Hess 1900: 48, 1907: 275; Hess & Beck 1914: 248, 1927: 302; Hofinger 1922; Judeich & Nitsche 1895: 447, 472; Kalandra & Pfeffer 1935: 6; Kholodkovskii 1912: 285, 295; Liese & Butovitsch 1931: 114; Luchnik 1925: 9–15; Lustner et al. 1935: 81; Marcu 1926c: 60; Maslov 1963b; Nosek 1952b: 98; Nusslin 1913: 238; Pfeffer 1989a: 28; Pierce, W. D. 1917: 96; Rhumbler 1922: 281, 1927: 293; Roepke 1933: 17; Schimitschek 1935b: 145, 1937c: 47, 1944: 163, 1955a: 76, 152; Schinder 1960: 20, 1961: 18; Schmidt 1881: 90; Schwerdtferger 1944a: 172, 1957a: 151; Spaic 1956: 88; Tubeuf 1935: 73, 1936: 507; Vajda 1952: 114; Wachtl 1901: 381; Weber 1926: 577. (**ec**) Beaver 1965b, 1967b, 1967c: 145,146; Cooreman 1963: 46; Crowson 1981a; Escherich 1935; Fransen 1937b; Graham 1969: 880; Gyorfi 1941b; Kleine 1908c: 180, 1909a: 44, 77, 1944: 73; Knoche 1908b: 202; Kostenko 1929; Maksimovic 1979a: 285; Meyer 1934: 616; Nikitsky 1978; Nosek 1952b: 98,

1959a: 118, 1959b: 85; Novak, P. 1952: 411; Nusslin 1927: 293; Perris 1856a: 244, 1862: 189; Pfeffer 1928b: 2, 8, 1979: 149; Prell 1926: 68; Ratzeburg 1869a: 176; Roepke 1935: 124; Ruschka 1925: 201; Scheidter 1936: 235; Schimitschek 1936a: 560, 1955a: 152, 1964c; Schwerdtfeger 1944a: 172, 1957a: 181; Sedlaczek 1935a: 162; Sengonca & Leisse 1984; Thompson, W. R. 1943: 97; Wichmann 1953a: 107. (**hb**) Acatay 1943a: 60–61; Altum 1889c; Ashe 1949; Bach 1864; Barbey 1901: 20, 63, 1925: 603; Beaver 1967a: 141–150, 1967b: 160, 1970b: 698; Beffa 1961; Bellevoye 1876; Braun 1941c; Bukowsky 1930; Cecconi 1906, 1924; Chorbadzhievo 1929; Clinton & McCormick 1936; Dallimore & Munro 1922; Decaux 1890e, 1890f; Dombrowsky 1887; Eckstein 1897, 1926: 577; Eichhoff 1881a: 39, 142, 1892b: 99; Escherich 1923b: 479, 497; Everts 1903: 745; Fransen 1937: 195–217; Frauenfeld 1860; Fuchs 1904a, 1911b; Gabler 1955; Gillanders 1908; Girard 1873; Goidanich 1937: 417–425, 1946; Grandi 1951; Guran 1933; Gyorfi 1957; Hennings 1908c: 215; Henschel 1876a: 240, 1895a: 150; Hess 1900: 48; Hess & Beck 1914: 248, 1927: 302; Jacobi 1906: 147; Judeich & Nitsche 1895: 447, 472; Karpinski & Strawinski 1948: 154; Karsch 1883: 143; Keller 1913: 242; Kirby, S. G. & Fairhurst 1983; Knotek 1894a: 553; Lengerken 1939: 52, 1954: 72; Lichtenstein 1918: 93; Maksimovic 1979a, 1979b; Marcu 1941: 401; Maslov 1963a: 80–100, 1963b: 18, 1963c: 840; Munro 1926: 50; Nordlinger 1856: 41; Nosek 1959a: 118, 1959b: 85; Nusslin 1898: 275, 1904: 8, 1905a: 88, 1906b: 14, 1913: 238, 1927: 293; Orest 1927: 59; Ormerod 1877: 186; Perris 1856a: 244; Pfeffer 1942a: 11; Postner 1974: 412; Prell 1926: 62–76; Ratzeburg 1837: 184; Rhumbler 1922: 281, 1927: 293; Roepke 1935: 121–124; Rupertsberger 1880: 227; Scheidter 1936: 235; Schimitschek 1939c: 271, 1944: 163, 1955a: 152; Schindler 1860: 20, 1861: 18; Schmidt 1881: 90; Schwerdtfeger 1944a: 172, 1957a: 181, 1981: 187; Sedlaczek 1935a: 162; Spessivtsev 1913a: 55; Stark 1926a: 333, 1952: 175; Strohmeyer 1916: 117; Tschorbadjiev 1929: 161; Wachtl 1901: 381; Weber 1926: 577. (**ds**) Acloque 1896; Andersch 1851; Audras & Schaefer 1957; Barthe 1896; Bau 1888; Beaver 1966: 160, 1968: 698; Bedel 1888b: 393, 411; Bielz 1851, 1887; Blanchere & Robert 1889; Borchert 1951; Brakman 1966b: 203; Brancsik 1871, 1906; Bukowsky 1930; Buresh & Lazarov 1956; Calwer 1884, 1893; Carpentier & Delaby 1908; Cecconi 1906; Chapman, J. A. 1972: 106; Chapman, T. A. 1869d: 26–31; Chapuis 1869: 32, 1873: 234; Chapuis & Candeze 1853; Chorbadzhievo 1924d, 1929; Clinton & McCormick 1936; Crotch 1863; Dallimore & Munro 1922: 189–193; Debatisse 1945; Dejean 1825, 1837; Duffy 1945: 175; Duftschmidt 1825; Eggers 1904; Endrodi 1958a, 1958b; Escalera 1919; Escherich 1923b: 479, 497, 1932b; Everts 1922: 639, 1925; Fowler 1891; Fricken 1889: 280; Fuchs 1904a, 1905a; Gaubil 1849: 127; Gillen 1947; Goidanich 1946: 101; Gozis 1875: 79; Gredler 1866: 372; Grune 1979: 73; Guran 1933: 225–236; Gyorfi 1941b; Hagedorn 1910d: 18; Hellen 1947; Henschel 1895a: 150; Heyden, Reitter, & Weise 1883: 181, 1891: 669, 1906: 709; Horion 1951; Jacentkowsky 1935: 21; Johnson, W. F. & Halbert 1902: 818; Judeich & Nitsche 1895: 447, 472; Kaltenback 1874: 535; Kamp 1979; Karpinski 1948a: 173; Karpinski & Strawinski 1948: 154; Keler 1925b: 270; Kestercanek 1881a: 12; Kleine 1912a: 267, 1912b: 173, 1913a: 34, 1934a: 130; Kloft & Hinks 1945: 217; Knotek 1892a: 34, 1894a: 553; Koca 1905: 191; Kolbe, W. 1918: 211; Kostenko 1929; Kraatz 1869: 59; Kurir 1947c: 24; Lacordaire 1866: 363; Langhoffer 1915c: 156; Leclercq 1971; Leesberg 1874: 64; Lentz 1857: 138; Lomnicki 1913b: 147; Lucht 1987: 277; Luigioni 1929: 992; Marcu 1926c: 60; Matthews & Fowler 1883: 42; Munro 1921: 87; Negru 1966b: 399, 1968a: 454; Novak, P. 1952: 411; Nunberg 1928b: 87, 97, 1954: 38; Nusslin 1898: 275; Orest 1926c: 60; Pascovici 1962; Pascovici et al. 1963: 153–175; Perris 1876a: 254, 1877a: 414; Pfeffer 1928b: 2, 1931b: 73, 1935: 159, 1947a: 126, 1989a: 28; Pierce, W. D. 1917: 96; Pittioni 1943: 174; Pjatnitskii 1930a: 163; Postner 1974: 412; Ragusa 1924: 115; Ratzeburg 1837: 184; Redtenbacher 1858: 828, 1874: 371; Reitter 1869b: 153, 1889a: 63, 1894a: 52, 1916: 279; Revy & Siroki 1942: 82; Roubal 1935b: 72, 1941: 257; Rye 1866a: 197, 1890: 268; Sainte-Claire 1914: 469; Sainte-Claire & Mequignon 1938: 443; Schaufuss 1915: 1220; Schaum 1859: 95, 1862: 100; Schedl 1961b: 186, 1964f, 1967c: 69, 1980a: 6, 1981b: 60; Scheerpeltz & Winkler 1930: 255; Schilsky 1889: 364, 1909: 187; Schwerdtfeger 1981: 187; Seidlitz 1891a: 561, 1891b: 606; Seitner & Notzel 1925: 187–196; Sharp & Fowler 1925: 187–196; Stark 1926a: 333, 1926j: 125, 1927b: 87, 1952: 175; Stein 1868: 113; Stein & Weise 1877: 163; Stephens 1829a: 146; Stierlin 1898: 434; Stierlin & Gautard 1871: 292; Sturm 1843: 229; Tredl 1907: 8; Tressens 1952: 90; Tschorbadjiev 1929: 161; Uyttenboogaart 1904: 143; Villa & Villa 1833: 26; Welch, R. C. 1968b: 19; Wichmann 1927a: 56. (**tx**) Acloque 1896; Bach 1854, 1864; Balachowsky 1949a: 94; Barbey 1901: 20, 63; Beaver 1970b; Bedel 1888b: 393, 411; Beffa 1961; Bertolini 1872; Brancsik 1871; Carpentier & Delaby 1908; Chapuis 1869: 32, 1873: 234; Chapuis & Candeze 1853; Chorbadzhievo 1924d; Csiki 1907; Dejean 1825; Doebner 1860; Dombrowsky 1887; Duffy 1953: 11; Duftschmidt 1825; Eggers 1929e: 43; Eichhoff 1864b: 30, 1881a: 39, 142, 1883a: 103, 126; Endrodi 1957b; Erichson 1836: 56; Escherich 1923b: 479, 497; Everts 1903: 745, 1922: 639; Fabricius 1787: 38, 1792: 368, 1801: 395; Fauvel

1889; Ferrant 1911; Fleischer 1927, 1905; Formanek 1907: 19; Fricken 1889: 280; Fuchs 1912a; Gabler 1955; Gebien 1907: 197; Gemminger & Harold 1872: 2674; Gillanders 1908; Girard 1873; Gmelin 1790: 1603; Grune 1979: 72–73; Hagedorn 1910a: 49; Henschel 1876a: 240, 1895a: 150; Herbst 1793: 122; Hopkins 1914: 128; Illiger 1907: 321; Jablonsky 1785: 122; Jacentkowsky 1935: 21; Jacobi 1906: 147; Judeich & Nitsche 1895: 447, 472; Kalandra & Pfeffer 1935; Karpinski & Strawinski 1948: 154; Knotek 1892a: 34; Kuhnt 1913: 1050; Lacordaire 1866: 363; Letzner 1891: 373; Lucht 1987: 277; Luigioni 1929: 992; Negru 1966b: 399; Nordlinger 1848: 252, 1856: 41; Nunberg 1928a: 140, 1954: 38; Nusslin 1911a: 59, 1912c: 282; Panzer 1795a: 289; Pfeffer 1932b: 13, 1942a: 11, 1955a: 98, 1989:pl. 1, 2; Portevin 1935: 317; Postner 1974: 412; Quaschik 1953: 35; Ratzeburg 1837: 184; Redtenbacher 1849a: 362, 1849b: 27, 1858: 828, 1874: 371; Reitter 1889a: 63, 1894a: 52, 1913a: 43, 1916: 279; Rey 1887: 231; Rhumbler 1922: 281, 1927: 293; Rupertsberger 1880: 227; Schedl 1934f: 1634, 1952f: 86, 1958c: 560, 1958k: 141, 1959r: 41, 1980a: 6, 1981b: 60; Schimitschek 1937c: 47, 1955c: 76; Seidlitz 1891a: 561, 1891b: 606; Spessivtsev 1913a: 55–63, 1931: 32–33; Stark 1952: 175; Stephens 1829a: 146; Stierlin 1898: 434. (**ms**) Escherich 1932b; Fuchs 1911b; Kholodkovskii 1893: 390; Mori & Paupoomchareon 1988, 1989.

sericeus Marsham 1802: 55 (*Ips*). Syntypes, sex?; England; not located. Synonymy: Hagedorn 1910d: 18.

References: (**tx**) Hagedorn 1910d: 18; Marsham 1802: 55; Stephens 1830: 361.

furcatus Marsham 1802: 55 (*Ips*). Syntypes, sex?; England; not located. Synonymy: Hagedorn 1910d: 18.

References: (**tx**) Hagedorn 1910d: 18; Marsham 1802: 55.

coadunatus Marsham 1802: 58 (*Ips*). Syntypes, sex?; England; presumably in BMNH, London. Synonymy: Gemminger & Harold 1872: 2675.

References: (**ds**) Murray 1853: 60; Stephens 1829a: 146, 1830: 360, 1839: 208. (**tx**) Gemminger & Harold 1872: 2675; Marsham 1802: 58; Stephens 1829a: 146, 1829b: 12, 1830: 360, 1839: 208.

Genus *Cryptocurus* Schedl

CRYPTOCURUS SCHEDL 1957e: 869. Type-species: *Cryptocurus spinipennis* Schedl, monobasic.

Hyloperus Browne 1970: 546. Type-species: *Hyloperus bicornis* Browne =*Cryptocurus spinipennis* Schedl, original designation. Synonymy: Wood 1983a: 648.

References: (**tx**) Browne 1970: 546; Wood, S. L. 1983a: 648.

References: (**hb**) Wood, S. L. 1986a: 39. (**ds**) Wood, S. L. 1986a: 39. (**tx**) Schedl 1957e: 869, 1959n: 411–412; Wood, S. L. 1983: 648, 1986a: 39.

***spinipennis* Schedl** 1957e: 870. Holotype ♂; Tanganyika: Moshi District; BMNH, London.

Figures: Browne 1970: 547 (male, female).

Distribution: Africa (Nigeria/ Tanzania).

Hosts: *Piptadenia buchananii*.

References: (**tx**) Browne 1970: 547; Schedl 1957e: 869–870, 1959n: 412, 1979c: 235.

bicornis Browne 1970: 546 (*Hyloperus*). Holotype ♀; Mambilla Plateau, Gyel Nyaki at 5000 ft., Nigeria; BMNH, London. Synonymy: Wood 1985: 267.

References: (**tx**) Browne 1970: 546; Roberts 1969: 125; Wood, S. L. 1985: 267.

caudatus Browne 1970: 547 (*Hyloperus*). Holotype ♂; Mambilla Plateau, Gyel Nyaki at 5000 ft., Nigeria; BMNH, London. Synonymy: Wood 1985: 267.

References: (**tx**) Browne 1970: 547; Roberts 1969: 125; Wood, S. L. 1985: 267.

Genus *Neopteleobius* Nobuchi

NEOPTELEOBIUS NOBUCHI 1971a: 125. Type-species: *Hylesinus scutulatus* Blandford, original designation.

References: (**hb**) Wood, S. L. 1986a: 39. (**ds**) Wood, S. L. 1986a: 39. (**tx**) Choo, Woo, & Nobuchi 1988b: 135; Nobuchi 1971a: 125; Schedl 1972q: 255; Wood, S. L. 1986a: 39.

***scutulatus* (Blandford)** 1894c: 67 (*Hylesinus*). Syntypes, sex?; Kiga, Subashiri, Nagasaki, Omori, and Oyama, Japan; BMNH, London.

Figures: Nobuchi 1971a: 125.

Distribution: Asia (Japan/ Korea).

Hosts: *Zelkova serrata, Ulmus japonica, Castanea pubinervis, Cercidiphyllum japonicum, Acer mono, Alnus japonica, Gleditsia japonica*.

Notes: (1) Nobuchi 1971a: 126 (to *Neopteleobius*).

References: (**ds**) Blandford 1894c: 67; Choo 1983: 49; Choo & Woo 1985: 164; Choo, Woo, & Nobuchi 1988a: 135; Choo, Woo, & Park 1983: 176; Hagedorn 1910d: 19; Kleine 1934a: 130; Murayama 1929b: 2, 1930b: 13, 30, 1937b: 375; Nobuchi 1985: 6. (**tx**) Blandford 1894c: 67; Choo 1983: 50; Choo & Woo 1985: 164; Choo, Woo, & Nobuchi 1988a: 135; Hagedorn 1910a: 49; Murayama 1930b: 13, 30, 1937b: 375, 1954b: 158; Nobuchi 1971a: 125–126; Schedl 1934f: 1634, 1959r: 41, 1963h: 259, 1972q: 255.

trepanatus Wichmann 1914c: 137 (*Pteleobius*). Syntypes, sex?; Kioko, Japan; 2 in Pic-Digion Collection and 1 in Wichmann Collection. Synonymy: Murayama 1963b: 18.

References: (**tx**) Murayama 1963b: 18; Schedl 1934f: 1634; Wichmann 1914c: 137.

Genus *Alniphagus* Swaine

ALNIPHAGUS SWAINE 1918a: 73. Type-species: *Hylesinus aspericollis* LeConte, original designation.

Hylastinoides Spessivtsev 1919: 249. Type-species: *Hylastes alni* Niisima, monobasic. Synonymy: Swaine 1919b: 279.

References:

Keys: Wood 1982b: 119 for North America.

References: (**hb**) Bright & Stark 1973: 41; Wood, S. L. 1982b: 119, 1986a: 39. (**ds**) Bright & Stark 1973: 41; Bruck 1936a: 43; Leng 1920: 338; Spessivtsev 1919: 278, 1931a: 86; Swaine 1918a: 73; Wood, S. L. 1982b: 119, 1986a: 39. (**tx**) Arnett 1960: 1041, 1968: 1041; Bright 1978: 74; Bright & Stark 1973: 41; Bruck 1936a: 43; Chamberlin 1939: 117, 193–194, 1958: 53, 99–100; Krivolutskaya 1958: 122–123; Murayama 1963: 30–31; Schedl 1950b: 113–115; Spessivtsev 1919: 249, 279, 1931a: 86; Stark 1952: 207; Swaine 1918a: 73, 1919b: 279; Winkler 1932: 1632; Wood, S. L. 1982b: 119, 1986a: 39.

***alni* (Niisima)** 1909: 137 (*Hylastes*). Lectotype ♀; Tomakomai, Iburi Prov. and Jozankei, Tomimoto, Japan; Nobuchi Collection, Ibaraki, lectotype labeled by Nobuchi (?) but never published.

Figures: Nakane et al. 1963:pl. 191.

Distribution: Asia (N Japan/ Sakhalin Island, Siberia in E USSR).

Hosts: *Alnus fruticosa, A. hirsuta, A. incana* var. *glauca*.

Notes: (3) Sokanovskii 1958: 38 (named aberration as var. *imitator*, no status). Schedl 1950b: 114 (redescribed).

References: (**cn**) Anonymous 1980g; Inouye & Yamaguchi 1955a: 235; Kurenzov 1935c: 188. (**ec**) Inouye & Yamaguchi 1955a: 235; Kurenzov 1934a: 51, 1964: 20. (**hb**) Krivolutskaya 1973: 132; Kurenzov 1935a: 19, 27, 1948b: 114; Stark 1952: 207. (**ds**) Anonymous 1980g; Kleine 1914b: 254, 1934a: 130; Krivolutskaya 1965a: 228, 1973: 132; Kurenzov 1934a: 51, 1935a: 19, 27, 1935c: 188, 1936a: 111, 1936b: 350, 1938a: 63, 1964: 20; Nakane et al. 1963: 382; Stark 1952: 207. (**tx**) Hagedorn 1910a: 45; Krivolutskaya 1958: 122; Kurenzov 1941a: 127–128, 1948b: 114; Murayama 1954b: 155; Nakane et al. 1963: 382, pl. 191; Niisima 1909: 137; Schedl 1934f: 1636, 1948a: 236, 1950b: 114–115, 1979c: 16; Sokanovskii 1958: 38; Spessivtsev 1919: 249; Stark 1952: 207.

***aspericollis* (LeConte)** 1876: 380 (*Hylesinus*). Lectotype ♂; California (at Santa Barbara?) [USA]; MCZ, Cambridge, designated by Wood 1982b: 120.

Figures: Borden 1969: 875, Bright & Stark 1973: 151, Furniss & Carolin 1977: 344, Wood 1982: 121.

Distribution: North America (Alaska/ British Columbia in Canada/ California, Idaho, Montana, Oregon, Utah, Washington in USA).

Hosts: *Alnus rhombifolia, A. rubra, A. tenuifolia*.

Notes: (1) Swaine 1918a: 73 (to *Alniphagus*).

References: (**cn**) Borden 1969: 870; Currie 1905: 75; Doane et al. 1936; Essig 1926: 517, 1958: 517; Hatch 1938: 193; Hopkins 1899b: 16, 1904a: 20; Keen 1938: 131, 1952c: 169; Ruppel 1967: 6; Schuh & Mote 1948: 118; Swaine 1918a: 73. (**ec**) Borden 1969; Deyrup & Gara 1978: 274; Keen 1938: 131; Furniss, R. L. & Carolin 1977: 344; Kinn 1971; Muesebeck 1942: 93, 1946: 427, 1948a: 236, 1950: 128; Poinar 1975. (**hb**) Anderson, R. F. 1960: 244; Borden 1969: 870; Bright 1976d: 74; Bright & Stark 1973: 42; Chamberlin 1939: 193–194, 1958: 99–100; Daterman, Rudinsky, & Nagel 1965; Doane et al. 1936; Essig 1926: 517, 1958: 517; Furniss, M. M. & Johnson 1987: 378; Furniss, R. L. & Carolin 1977: 344; Hopkins 1899b: 16, 1901e: 67, 1904a: 20; Keen 1938: 131, 1952c: 169; Pierce 1907: 293; Swaine 1918a: 73; Wood, S. L. 1982b: 120. (**ds**) Anderson, R. F. 1960: 244; Borden 1969; Bright 1976d: 74; Bright & Stark 1973: 42; Chamberlin 1914: 326, 1917, 1939: 193–194, 1958: 99–100; Currie 1905: 75; Essig 1926: 517, 1958: 517; Fall 1906: 203; Furniss, M. M. & Johnson 1987: 378; Furniss, R. L. & Carolin 1977: 344; Hagedorn 1910d: 15; Henshaw 1882: 269, 1885: 149; Hopping 1922: 128–134; Keen 1929a: 22, 1938: 131, 1952c: 169; Kleine 1912b: 162, 170, 1914b: 389, 1934a: 130; Leng 1920: 338; Patterson & Hatch 1945: 150; Ruppel 1967: 60; Schedl 1969a: 203; Schuh & Mote 1948: 118; Smith, G. S. 1930; Swaine 1909: 112; Wood, S. L. 1972a: 407, 1982b: 120. (**tx**) Anderson, R. F. 1960: 244; Benoit 1986: 9; Borden 1969: 875; Bright 1976d: 74, 201, 207; Bright & Stark 1973: 151; Bruck 1936a; Chamberlin 1939: 192–193, 1958: 99–100; Furniss, R. L. & Carolin 1977: 344; Hagedorn 1910a: 48; Keen 1929a: 22; LeConte 1876: 380; Schedl 1948a: 236, 1950b: 115; Swaine 1909: 112, 1918a: 73; Wood, S. L. 1972a: 407, 1982b: 120–121. (**ms**) Hatch 1938: 193.

***hirsutus* Schedl** 1948a: 236. Holotype ♂; Copper Mountain, British Columbia, Canada; Schedl Collection in NHMW, Wien.

Distribution: North America (British Columbia in Canada/ California, Oregon, Washington in USA).

Hosts: *Alnus sinuata, A. tenuifolia*.

References: (**hb**) Bright 1976d: 76; Bright & Stark 1973: 42; Chamberlin 1958: 100; Wood, S. L. 1982b: 12. (**ds**) Borden 1969: 871; Bright 1964: 169, 1976d: 76; Bright & Stark 1973: 42; Chamberlin 1958: 100; Furniss, R. L. & Carolin 1977: 345; Wood, S. L. 1972a: 407, 1982b: 120. (**tx**) Bright 1964: 169, 1976d: 76; Chamberlin 1958: 100; de Ruette 1970: 97; Schedl 1948a: 236,

1950b: 115, 1979c: 117; Wood, S. L. 1972a: 407, 1982b: 120.

Genus *Hylesinus* Fabricius

HYLESINUS FABRICIUS 1801: 390. Type-species: *Hylesinus crenatus* Fabricius, subsequent designation by Westwood 1838: 39.

Keys: Murayama 1963b: 6 for Japan, Wood 1982b: 110 for North America.

References: (**ay**) Nobuchi 1969a: 53, 57; Schonherr 1970b. (**bv**) Chararas 1960b: 3872-3874; Schonherr 1970. (**cn**) Craighead 1922. (**ec**) Jamnicky 1961b: 268; (**hb**) Barbey 1901: 59; Bargmann 1900: 169; Bright & Stark 1973: 41; Browne 1961c: 64; DelGuercio 1931: 1–74; Eichhoff 1881: 133; Escherich 1923b: 479; Jamnicky 1961b: 268; Judeich & Nitsche 1895: 444–445; Marcu 1930: 238; Munro 1926: 1–27; Paillot 1917: 329–334; Picard & Rabaud 1914: 226–269; Postner 1974: 408; Scott 1962: 1–8; Wood, S. L. 1982b: 110, 1986a: 39. (**ds**) Browne 1961c: 64; Hagedorn 1910d: 15; Postner 1974: 408; Wood, S. L. 1982b: 110, 1986a: 39. (**tx**) Allen, A. A. 1970: 246; Bach 1854: 142; Balachowsky 1949a: 84–94; Bedel 1888b: 389, 392; Beeson 1938: 288, 1941 (1961: 287–288); Blanchard 1845; Blandford 1895b: 142, 154, 1897a: 154; Blatchley & Leng 1916: 662–664; Boas 1923: 313; Chapuis 1869: 29, 1873: 237; Choo, Woo, & Nobuchi 1988b; Doebner 1862: 159; Eggers 1920: 118; Eichhoff 1864: 29, 44, 46, 1881a: 133, 1883a: 101; Endrodi 1957: 414; Erichson 1836: 56; Fabricius 1801: 390; Formanek 1907: 17; Hagedorn 1910a: 47, 1910d: 15; Jacquelin du Val & Fairmaire 1868102; Karaman 1971: 59–61; Kostin 1973: 244; Kurenzov 1941: 113, 1951: 78–80; Lacordaire 1807: 279, 1810: 224, 1829: 91, 1866: 362; LeConte 1876: 378; LeConte & Horn 1883: 523; Lucas 1920: 32, 342, 367; Murayama 1963b: 6; Niisima 1909: 125–130; Nunberg 1954: 35–37; Pfeffer 1955: 93, 1989a: 26; Postner 1974: 408; Provancher 1877: 571; Ratzeburg 1837: 170–184, 1839: 183; Reitter 1894: 51, 1913a: 41; Saalas 1914: 70, 76; Schedl 1936a: 521, 1940a: 338, 1947a: 20, 1953d: 74, 1959k: 39–42, 1962q: 486, 1965f: 3–15, 1981b: 57; Scheerpeltz & Winkler 1930: 255; Schimitschek 1937: 45–46; Spessivtsev 1922: 463–464, 1925: 162, 1931: 29–31, 85; Stark 1931: 81–84, 1936: 148–153, 1952: 155–173; Stresemann et al. 1989: 353; Swaine 1909: 111; Thomson 1859: 146; Westwood 1838: 39, 1840: 139; Winkler 1932: 1634; Wood, S. L. 1977d: 511, 1982b: 110, 1986: 38–39, 1986a: 39; Zimmermann 1868: 148.

Leperisinus Reitter 1913a: 41. Type-species: *Bostrichus fraxini* Panzer =*Hylesinus varius* Fabricius, subsequent designation by Swaine 1918a: 70. Synonymy: Reitter 1916: 349, Wood 1977d: 511.

References: (**ec**) Lindquist 1970a: 978, 980. (**hb**) Anderson, R. F. 1960: 244. (**ds**) Anderson, R. F. 1960: 244; Bright & Stark 1973: 41; Schedl 1936g: 520; Scheerpeltz & Winkler 1930: 258; Marcu 1930: 238–242. (**tx**) Anderson, R. F. 1960: 244; Arnett 1960: 1041, 1968: 1041; Balachowsky 1949a: 90; Beal & Massey 1945: 58, 88; Blackman 1922: 48, 62; Bright 1976d: 77–81; Bruck 1936a: 42, 1938: 42; Chamberlin 1939: 116, 184–188, 1958: 53, 95–97; Dodge 1938: 16, 30; Endrodi 1957: 414; Leng 1920: 338; Reitter 1913a: 40–42, 1916: 349; Saalas 1913a: 304–306(?); Schedl 1959k: 39–42; Swaine 1918a: 42, 70–71; Wichmann 1923: 48, 62; Wood, S. L. 1967: 79–97, 1977: 511–512.

Apidocephalus Wickham 1916: 18. Type-species: *Apidocephalus hydropicus* Wickham, monobasic. Synonymy: Wood 1992b: 80.

References: (**tx**) Wickham 1916: 18; Wood, S. L. 1992b: 80.

***aculeatus* Say** 1826: 322. Syntypes, sex?; Missouri [USA]; Say Collection, lost.

Figures: Bright 1976d: 201, 207, Ives & Wong 1988: 230.

Distribution: North America (Manitoba, Nova Scotia, Ontario, Quebec in Canada/ Arkansas, Colorado, Connecticut, District of Columbia, Georgia, Illinois, Indiana, Iowa, Kansas, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Virginia, West Virginia, Wisconsin in USA).

Hosts: *Fraxinus americana*, *F.* spp.

References: (**ay**) Baker, B. H. 1964: 187–194; Hopkins 1894g; Thomas, J. B. 1967. (**bv**) Baker, B. H. 1964: 187–194; Turnbow & Franklin 1980. (**cn**) Anonymous 1962h, 1977f; Baker, B. H. 1964: 187–194; Baker, W. L. 1972: 249; Beal et al. 1952; Blackman 1950; Britton 1931: 512; Doane et al. 1936; Drooz 1985: 341; Essig 1926: 519; Felt 1924: 273, 1926: 247, 273, 1930a: 247, 1942: 6; Felt & Rankin 1932: 153; Fiske 1908; Haldeman 1850; Herbert 1920: 360–363; Herrick 1935: 30, 374; Ives & Wong 1988: 231; Keen 1952c: 169; MacAloney & Ewan 1964; McDaniel 1933: 25; Packard 1890: 543; Pierson 1927: 31; Schneider 1963: 661; Smith, J. B. 1900: 365; St. George 1932b: 3; Stein, J. D. & Kennedy 1972: 107; Swaine 1918a: 71–72. (**ec**) Baker, W. L. 1972: 249; Bushing 1965: 461; Davis 1891: 66, 1892; Felt 1906: 288; Fiske 1908: 24; Galford 1969b; Hoffmann 1938: 118; Marsh 1979: 157; Mason, W. R. M. 1978; Matthews 1970; Richerson, J. V. & Borden 1972a; Sterrett 1916; Swaine 1925c: 263. (**hb**) Baker, B. H. 1964: 187–194; Baker, W. L. 1972: 249; Beal & Massey 1945: 88–89; Blackman 1922b: 62–63, 1950; Bright 1976d: 78; Chamberlin 1939: 184–

186; Deyrup & Atkinson 1987a: 64; Doane et al. 1936; Drooz 1985: 341; Essig 1926: 519; Fall & Cockerell 1907: 218; Felt 1906: 288, 1926: 247, 273, 1930a: 247, 273; Felt & Rankin 1932: 153; Galford 1969b; Gast et al. 1989: 382; Herbert 1920: 363, 1935: 30, 374; Hopkins 1894g: 280, 1904a: 20, 1904b: 321; Ives & Wong 1988: 231; Keen 1952c: 169; Knaus 1886: 76; MacAloney & Ewan 1964; McDaniel 1933: 25; Packard 1890: 543; Pierce 1907: 293; Pierson 1927: 31; Stein, J. D. & Kennedy 1972: 107; Swaine 1907: 194, 1918a: 71–72; Underhill 1951: 5; Wenzel 1905: 124; Wood, S. L. 1982b: 112. (**ds**) Anonymous 1926c: 516, 1977f; Atkinson et al. 1991: 156; Baker, B. H. 1964: 187–194; Beal & Massey 1945: 88–89; Beaulne 1956; Blackman 1922b: 62–63, 1950; Blatchley & Leng 1916: 663; Bright 1976d: 78; Britton 1920a; Chamberlin 1917: 326, 1939: 184–186; Chapuis 1869: 32, 1873: 240; Cockerell et al. 1907; Currie 1905: 75; Deyrup 1981b: 2; Deyrup & Atkinson 1987a: 64; Dodge 1938; Drooz 1985: 341; Essig 1926: 519; Felt 1926: 247, 273, 1930a: 247, 273; Felt & Rankin 1932: 153; Frost 1912: 308; Frost & Dietrich 1929; Furniss, R. L. & Carolin 1977: 366; Gast et al. 1989: 382; Glick 1939; Hagedorn 1910d: 15; Henshaw 1885: 149; Hopkins 1893a: 142, 1893b: 213; Hubbard & Schwarz 1878a: 666; Keen 1952c: 169; Kirk 1970; Kleine 1912b: 173, 1914b: 385, 1934a: 139; Knaus 1887: 88; Leng 1920: 338; Leonard 1928: 516; Melsheimer 1853: 87; Morgan, A. V. & Morgan 1980: 1110, 1986: 76; Patterson & Hatch 1945: 150; Pilny & Morgan 1987; Proctor 1946: 207; Provancher 1877: 571; Riley 1894: 227; Say 1826: 322, Slosson 1906: 325; Smith, J. B. 1900: 365, 1910: 404; Swaine 1909: 111; Turnbow & Franklin 1980; Ulke 1902: 56; Wickham 1896b: 170; Wood, S. L. 1957c: 399, 1982b: 112. (**tx**) Beal & Massey 1945: 88–89; Benoit 1985: 134; Blackman 1922b: 62–63; Blatchley & Leng 1916: 663; Bright 1976d: 78, 201, 207; Chamberlin 1939: 184–186; Chapuis 1869: 32, 1873: 240; Dodge 1938: 30–31; Eichhoff 1896: 607; Gemminger & Harold 1872: 2673; Hagedorn 1910a: 48; Ives & Wong 1988: 230; LeConte 1876: 379, 437; Provancher 1877: 571; Say 1824: 181, 1826: 322; Schedl 1957b: 150; Schwarz 1889b: 149; Swaine 1909: 111–112, 1916b: 190, 1917: 356, 1918a: 71–72; Thomas, J. B. 1967; Titus, Meikle, & Harrison 1985: 81; Underhill 1951: 5; Wood, S. L. 1957c: 399, 1982b: 112; Zimmermann 1868: 148. (**ms**) Swaine 1907: 194, 1925c: 263.

imperialis Eichhoff 1868c: 149. Syntypes, sex?; Wisconsin and Georgia [USA]; Hamburg Museum, lost. Synonymy: Wood 1973c: 178, 1977c: 386.

Notes: (3) The identity of this synonym is based on a male specimen in the Schedl Collection at NHMW, Wien, labeled "Amer. Bor., Ulke; Coll. Eichhoff," obtained by Schedl from the Stettin Museum before its destruction.

References: (**hb**) Chamberlin 1939: 188; Swaine 1918a: 71; Underhill 1951: 6. (**ds**) Anonymous 1926c: 516; Chamberlin 1917, 1939: 188; Dodge 1936: 30; Hagedorn 1910d: 17; Henshaw 1885: 149; Keen 1929a: 22; Kleine 1912b: 171, 1914b: 388; Leng 1920: 338; Leonard 1928: 516; Swaine 1909: 112. (**tx**) Chamberlin 1939: 188; Dodge 1936: 30; Eichhoff 1868c: 149, 1896: 607; Gemminger & Harold 1872: 2674; Hagedorn 1910a: 48; Keen 1929a: 22; LeConte 1868: 169, 1876: 379; Schedl 1979c: 122; Swaine 1909: 112, 1918a: 71; Underhill 1951: 6; Wood, S. L. 1973c: 178, 1977c: 386.

cinereus Swaine 1917: 15 (*Leperisinus*). Lectotype ♀; Hudson, Quebec, Canada; CNCI, Ottawa, designated by Bright 1967b: 676. Synonymy: Wood 1957c: 399.

References: (**cn**) Doane et al. 1936; Swaine 1918a: 71–72. (**hb**) Chamberlin 1939: 186; Doane et al. 1936; Swaine 1918a: 71–72; Underhill 1951: 6. (**ds**) Beaulne 1956; Chamberlin 1939: 186; Kleine 1934a: 130; Leng 1920: 338. (**tx**) Bright 1967b: 676; Chamberlin 1939: 186; Hoebeke 1978; de Ruette 1970: 104; Swaine 1917: 15, 1918a: 71–72; Underhill 1951: 6; Wood, S. L. 1957c: 399.

***antipodus* Schedl** 1951d: 17. Syntypes, sex?; Rengo, Chile; Schedl Collection in NHMW, Wien, and NMHN, Santiago.

Distribution: South America (Chile).

Notes: (1) Schedl 1979c: 22 (citation of holotype invalid).

References: (**ds**) Schedl 1972d: 137. (**tx**) Schedl 1951d: 17, 1972d: 137, 1979c: 22.

***atomarius* Chapuis** 1869: 29. Holotype, sex?; Bresil; IRSNB, Brussels.

Distribution: South America (Brazil).

References: (**ds**) Blackwelder 1947; Hagedorn 1910d: 15; Kleine 1912b: 70, 1914b: 33. (**tx**) Chapuis 1869: 29, 1873: 234; Gemminger & Harold 1872: 2674; Hagedorn 1910a: 4.

***aztecus* Wood** 1980b: 354. Holotype ♂; Chapingo, Mexico, Mexico; Wood Collection.

Figures: Atkinson et al. 1986: 14.

Distribution: North America (Mexico, Morelos in Mexico).

Hosts: *Fraxinus uhdei*.

References: (**hb**) Atkinson & Equihua 1985a: 71; Atkinson et al. 1986: 15; Burgos & Saucedo 1983: 52; Wood, S. L. 1982b: 11. (**ds**) Atkinson 1989a: 59; Atkinson & Equihua 1985a: 71; Atkinson et al. 1986: 15; Burgos & Saucedo 1983: 52; Wood, S. L. 1982b: 11. (**tx**) Wood, S. L. 1980b: 354, 1982b: 116.

***bicolor* Philippi** in Philippi & Philippi 1864: 375. Syntypes, sex?; Prov. Valdivia invenit orn. Landbeck [Chile]; NMHN, Santiago, preoccupied by Brulle 1832: 250.
Distribution: South America (Chile).
Notes: (1) This junior homonym is probably a member of another genus (*Xylechinus* ?) where synonymy probably exists. When its identity is established, a name change will be needed.
References: (**ds**) Blackwelder 1947; Brethes 1925: 202; Gemminger & Harold 1872: 2674; Hagedorn 1910d: 15. (**tx**) Bertolini 1872; Hagedorn 1910a: 48; Philippi & Philippi 1864: 375; Porter 1932: 106; Schedl 1951d: 16.

***bicolor* (Eggers)** 1939b: 4 (*Leperisinus*). Holotype, sex?; Nordost-Birma (Kambaiti, 7000 ft.); NHR, Stockholm.
Distribution: Asia (Burma).
Notes: (1) This junior homonym is not renamed because synonyms of *bicolor* Eggers apparently exist.
References: (**ds**) Blackwelder 1947; Brethes 1925: 202; Kleine 1912b: 170, 1914b: 332; Schedl 1972d: 137. (**tx**) Eggers 1939b: 4; Schedl 1951d: 1, 1972d: 137.

***botscharnikovi* Stark** 1931c: 81. Lectotype, sex?; Kreise von Lenkoran (Ortchaft Aleksejevka, Forstbezirk Suvand), USSR; IZL, Leningrad, designated by Michalski 1969a: 888.
Figures: Stark 1952: 159 (antenna, galleries).
Distribution: Asia (W USSR).
Hosts: *Fraxinus* sp.
References: (**hb**) Stark 1952: 158. (**ds**) Arnoldi et al. 1955: 661–662; Kleine 1934a: 128; Pfeffer 1935: 157; Schedl 1934f: 1634; Sokanovskii 1959a: 276; Stark 1936a: 148, 1952: 158. (**tx**) Michalski 1969a: 888, 1969b: 565; Pfeffer 1935: 157; Schedl 1934f: 1634; Sokanovskii 1959a: 276; Stark 1931c: 81, 1936a: 148, 1952: 158.

***californicus* (Swaine)** 1916b: 190 (*Leperisinus*). Holotype ♀; San Diego, California [USA]; CNCI, Ottawa.
Figures: Bright & Stark 1973: 151, Ives & Wong 1988: 230, Swaine 1916b:pl. 8 (adult, galleries).
Distribution: North America (Manitoba, Saskatchewan in Canada/ Chihuahua in Mexico/ Arizona, California, Colorado, Montana, New Mexico, North Dakota, Oklahoma, Oregon, Texas, Utah in USA).
Hosts: *Fraxinus americana, F. latifolia, F. pennsylvanica, F. velutina, Olea europeae.*
Notes: (3) Essig 1958: 517 (*Leperisinus californicus*, nomen nudum).
References: (**bv**) Barr, B. A. 1969: 642; Daterman, Rudinsky, & Nagel 1965; Rudinsky & Vernoff 1979; Vernoff & Rudinsky 1980. (**cn**) Anonymous 1964j, 1976e, 1977f; Burke 1939: 40; Cerezke & Emond 1989: 25; Doane 1923: 217; Doane et al. 1936; Ebeling 1950, 1959; Essig 1917: 53, 1926: 517, 1958: 517; Ives & Wong 1988: 231; Keen 1938: 131; McKnight, M. E. & Aarhus 1973; Schuh & Mote 1948: 118; Stein, J. D. & Kennedy 1972: 106; Swaine 1918a: 71; Wilkansky 1920: 339–340. (**ec**) Bushing 1965: 462; Furniss, R. L. & Carolin 1977: 366; Keen 1938: 131; Marsh 1979: 150; Massey 1971; Morrill 1917: 15–61; Poinar 1975: 164; Thompson, W. R. 1943: 69; Vernoff 1980. (**hb**) Bright 1966: 305, 1976d: 80; Bright & Stark 1973: 41; Chamberlin 1939: 187, 1958: 96–97; Daterman, Rudinsky, & Nagel 1965; Doane et al. 1936; Ebeling 1950; Essig 1926: 517, 1958: 517; Furniss, R. L. & Carolin 1977: 366; Ives & Wong 1988: 231; Keen 1938: 131; McKnight, M. E. & Aarhus 1973; Stein, J. D. & Kennedy 1972: 106; Swaine 1918a: 71; Underhill 1951: 1; Vernoff 1980; Wood, S. L. 1982b: 116. (**ds**) Anonymous 1964j, 1976e, 1977f; Bright 1976d: 80; Bright & Stark 1973: 41; Chamberlin 1939: 187, 1958: 96–97; Ebeling 1950; Essig 1926: 517, 1958: 517; Furniss, R. L. & Carolin 1977: 366; Gast et al. 1989: 382; Hopping 1922: 128–134; Keen 1929: 22, 1938: 131; Kleine 1934a: 130; Leng 1920: 338; Schuh & Mote 1948: 118; Snow 1906: 175; Wood, S. L. 1972a: 406, 1982b: 116. (**tx**) Blackman 1943: 396; Bright 1966b: 305, 1967b: 676, 1976d: 80; Bright & Stark 1973: 151; Bruck 1936a; Chamberlin 1939: 187, 1958: 96–97; Hoebeke 1978; Ives & Wong 1988: 230; Keen 1929a: 22; de Ruette 1970: 104; Swaine 1916b: 190, 192, 1918a: 71; Underhill 1951: 1; Wood, S. L. 1967b: 89, 1972a: 406, 1972e: 147, 1977: 386, 1982b: 116.

hoferi Blackman 1943c: 394 (*Leperisinus*). Holotype ♀; Sabino Canyon, Arizona [USA]; USNM, Washington. Synonymy: Wood 1972c: 147.
References: (**cn**) Anonymous 1968g, 1968k, 1969e. (**hb**) Underhill 1951: 32. (**ds**) Anonymous 1968g, 1969e; Blackwelder & Blackwelder 1948; Wood, S. L. 1960b: 61, 1972b: 147, 1977c: 386. (**tx**) Blackman 1943c: 394; Underhill 1951: 32; Wood, S. L. 1972c: 147, 1977: 386.

***caseariae* Wood** 1986c: 272. Holotype ♂; Acajete, Veracruz, Mexico; Wood Collection.
Distribution: North America (Veracruz in Mexico).
Hosts: *Casearia* sp.
References: (**tx**) Wood, S. L. 1986c: 272.

***cholodkovskyi* Berger** 1916: 246. Syntypes, sex?; Ussuri, USSR; not located.
Distribution: Asia (Heilongjiang in China/ Ussuri in E USSR).
Hosts: *Fraxinus mandshurica.*
References: (**cn**) Kurenzov 1935c: 188, 1951c: 78. (**ec**) Kurenzov 1934a: 57, 1951d: 24. (**hb**) Kurenzov 1935a: 19, 1948b: 126, 1951d: 24; Stark 1952: 161. (**ds**) Kleine 1934a: 128; Krivolutskaya 1983; Krivolutskaya & Kupyanskaya 1970; Kurenzov

1934a: 57, 1935a: 19, 1935c: 188, 1936b: 350; Stark 1936a: 149, 1952: 161. (**tx**) Berger 1916: 246; Kurenzov 1941a: 106, 1948b: 126, 1951: 24; Schedl 1934f: 1634; Stark 1936a: 149–150, 1952: 161.

***cingulatus* Blandford** 1894c: 67. Syntypes 5, sex?; Lake Junsai, Japan; BMNH, London.
Figures: Nakane et al. 1963:pl. 191, Stark 1952: 170 (adult).
Distribution: Asia (Manchuria in China/ Japan/ Korea/ Ussuri in E USSR).
Hosts: *Fraxinus rhyncophylla, F. longicuspis, F. mandschurica japonica, F. lanuginosa serrata, Juglans* sp., *Olea cuspidata*.
References: (**cn**) Kleine 1932a: 296; Kurenzov 1951c: 78; Shiraki 1952. (**ec**) Beeson 1922c; Kurenzov 1951d: 24. (**hb**) Beeson 1922c; Kleine 1932a: 296; Kurenzov 1935a: 19, 27, 1948b: 127, 1951d: 2; Stark 1952: 16. (**ds**) Beeson 1921: 514–518, 1922c: 495; Blandford 1894c; Cho 1955; Choo 1983: 48; Choo & Woo 1985: 164; Hagedorn 1910d: 15; Kleine 1912b: 170, 1914b: 255, 1932a: 296, 1934a: 128; Ko 1969: 277; Krivolutskaya & Kupyanskaya 1970; Kurenzov 1935a: 19, 27, 1936b: 350; Nakane et al. 1963: 381; Nobuchi 1985: 6; Shiraki 1952; Stark 1936a: 149, 1952: 169. (**tx**) Blandford 1894c: 67; Choo 1983: 48; Eggers 1922c; Hagedorn 1910a: 48; Kurenzov 1941a: 107, 1948b: 127, 1951: 26; Nakane et al. 1963: 381, pl. 191; Niisima 1909: 129; Schedl 1934f: 1634, 1954b: 198; Sokanovskii 1958: 38; Stark 1936a: 149, 1952: 169.

***cordipennis* Lea** 1910: 144. Syntypes, sex?; Cairns, Queensland [Australia]; NMV, Melbourne.
Distribution: Australia (Queensland), New Guinea.
Hosts: *Cryptocaria* sp.
References: (**ds**) Schedl 1965g: 25. (**tx**) Lea 1910: 144; Schedl 1938f: 34.

papuanus Eggers 1923a: 133. Syntypes, sex?; Insel Yule bei Neu Guinea; MCG, Genova and Eggers Collection in NHMW, Wien. Synonymy: Wood 1985: 268.
References: (**ds**) Schedl 1965g: 25. (**tx**) Eggers 1923a: 133, 1927c: 70; Lea 1910: 144; Schedl 1938f: 34, 1979c: 183; Wood, S. L. 1985: 268.

***costatus* Blandford** 1894c: 63. Holotype, sex?; Junsai, Japan; BMNH, London.
Figures: Nakane et al. 1963:pl. 191.
Distribution: Asia (Japan/ Korea/ Ryuku Island/ Taiwan/ Sakhalin Island, E USSR).
Hosts: *Fraxinus mandschurica, F. sieboldiana, Cladrastris shikokiana*.
References: (**hb**) Kurenzov 1935a: 19, 27, 1951d: 24; Stark 1952: 158. (**ds**) Blandford 1894c; Hagedorn 1910d: 15; Kleine 1912b: 170, 1914b: 255, 1934a: 128; Kurenzov 1935a: 19, 27; Murayama 1936a: 124; Nobuchi 1985: 7; Stark 1936a: 149, 1952: 158. (**tx**) Blandford 1894c: 63; Hagedorn 1910a: 48; Kurenzov 1941a: 108, 1941b: 24; Murayama 1936a: 124; Niisima 1909: 125; Schedl 1934f: 1634, 1954b: 198, 1958k: 141; Stark 1936a: 149–150, 1952: 158.

tristis Blandford 1894c: 66. Syntypes, sex?; Ichiuchi, Japan; BMNH, London. Synonymy: Schedl 1958k: 141.
References: (**ds**) Blandford 1894c: 66; Choo 1957; Choo 1983: 49; Choo & Woo 1985: 164; Choo, Woo, & Nobuchi 1988a: 135; Hagedorn 1910d: 19; Kleine 1912b: 171, 1914b: 255, 1934a: 129; Ko 1969: 278; Murayama 1929b: 2, 1930b: 9, 1936b: 115, 1937b: 375, 1950b: 1290, 1953c: 148, 1955: 101; Nakane et al. 1963: 381; Nobuchi 1967: 19, 1985: 6; Shiraki 1952. (**tx**) Blandford 1894c: 66; Choo 1983: 49; Eggers 1923a: 134, 1933f: 5; Murayama 1930b: 9, 13, 30, 1937b: 375, 1950b: 1290, 1955: 101; Nakane et al. 1963: 381; Niisima 1909: 128; Schedl 1934f: 1634, 1954b: 198, 1958k: 141, 1979c: 256; Stark 1936: 153.

***crenatus* (Fabricius)** 1787: 37 (*Bostrichus*). Syntypes 2, sex?; Germania; UZMC, Copenhagen.
Figures: Grune 1979: 68, Louzil 1961: 105, Okolow 1970: 174, Pfeffer 1989a:pl. 1, Stark 1952: 161.
Distribution: Africa (Algeria/ Morocco), Asia (E USSR), Europe (Austria/ Belgium/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Hungary/ Italy/ Luxemburg/ Norway/ Poland/ Romania/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia).
Hosts: *Fraxinus excelsa, F. mandschurica, F. oxyphylla, F.* spp., *Juglans nigra, Syringia vulgaris,* rare in *Quercus* spp., *Tilia* spp.
Notes: (3) Stephens 1829a: 146 (*Ips sulcatus* Marsham, nomen nudum, synonymy).
References: (**ay**) Escherich 1923b: 479, 503; Feytaud 1950a; Fuchs 1912a; Kleine 1921: 22, 26; Leisewitz 1906: 66; Marcu 1931c: 238; Nunberg 1928a: 140; Nusslin 1911a: 255, 1912c: 282; Okolow 1970; Ritchie 1917: 224; Wichmann 1912a: 9. (**bv**) Barr, B. A.1969: 641; Grune 1979: 69; Okolow 1970; Prell 1930c: 642, 1931: 368; Wichmann 1912a: 9–10. (**cn**) Archer 1866; Barbey 1925: 625; Berlese 1915; Browne 1968: 343; Eckstein 1926: 577; Escherich 1923b: 479, 503; Feytaud 1950a; Forbes 1910; Gabler 1955; Gradojevic 1940; Hess 1900: 46, 1907: 275; Hess & Beck 1914: 244, 1927: 298; Judeich & Nitsche 1895: 447, 476; Keller 1903b: 38; Kholodkovskii 1912: 285, 294; Kleine 1932a: 296; Kopper 1882: 247; Kovacevic 1957: 67; Kruel 1950: 8; LeComte 1951: 116; Lokaj 1906: 22; Marcu 1926c: 60; Mokrzecki 1926b: 4; Muller 1912: 184; Nusslin 1913: 204; Pfeffer 1948a: 800, 1950c: 2; Rhumbler 1922: 280, 1927: 292; Saalas 1949: 340, 348; Scheidter 1916: 214–215; Schimitschek 1937c: 46, 1944a: 173, 1955a: 144–145, 1955c: 76; Schwappach et al. 1929: 186; Schwerdtfeger

1944a: 173, 1957a: 181; Spaic 1955: 448, 1956: 88; Thaler 1898: 391; Wachtl 1901: 381; Weber, H. 1926: 577; Wolff & Krausse 1922: 74; Zakharov & Levkovich 1951: 298; Zieger 1950b: 38. (**ec**) Androic 1966: 49; Apel 1983; Balazy & Michalski 1960, 1964b; Chararas 1959c; Elliot & Morley 1907; Fuchs 1938; Gauss 1954a: 423; Heqvist 1963; Jamnicky 1957b: 13, 1957c; Kleine 1908c: 180, 1909a: 43, 1944: 78; Knoche 1908b: 202; Michalski & Seniczak 1972, 1974; Nosek 1959a: 118, 1959b: 87; Nunberg & Wiackowski 1958: 130; Nuorteva 1957b: 58; Nusslin 1927: 292; Okolow 1963, 1970; Perris 1856a: 244; Pfeffer 1928b: 2, 8, 1943b: 181, 1950c: 2; Poinar 1975: 159; Rafes 1962; Ratzeburg 1869a: 176; Rondani 1873: 150; Ruhm 1956b: 3; Saalas 1930: 118, 1949: 340, 369; Schimitschek 1955a: 144–145; Schwerdtfeger 1944a: 173, 1957a: 181; Sedlaczek 1935a: 162; Sitowski 1930: 7; Stefanov 1949a: 109; Szczepanski 1960a: 412, 415; Thompson, W. R. 1943: 52; Vietinghoft 1924: 336; Wiackowski 1957a: 77. (**hb**) Altum 1876b, 1879a, 1881c: 278, 1889c; Apel 1983; Bach 1864; Barbey 1901: 20, 60, 1925: 625; Bargmann 1906; Barrere 1872: 53; Beffa 1949, 1961; Berlese 1915; Boas 1923: 318; Brandt 1948; Browne 1968: 343; Budge 1949; Bukowsky 1930; Chapman 1868a, 1868b, 1869a: 26–31, 1972: 106; Decaux 1890e, 1890f; Dombrowsky 1887; Eckstein 1889, 1897, 1926: 577; Eggers 1899b; Eichhoff 1881a: 38, 134, 1892b: 99; Escherich 1917: 97–115, 1923b: 479, 503; Everts 1900, 1903: 743; Feytaud 1950a; Forbes 1899, 1904a, 1906b; Fuchs 1911b; Gabler 1955; Gillanders 1908; Girard 1873; Gornostaev 1916: 309; Guerin-Meneville 1845a; Gyorfi 1957; Hagedorn 1903a; Hennings 1908b, 1908c: 213, 1908d; Henschel 1876: 208, 240, 1895a: 147; Hess 1900: 36, 1907: 275; Hess & Beck 1914: 244, 1927: 298; Hickin 1963; Judeich & Nitsche 1895: 447, 476; Karpinski & Strawinski 1948: 154; Keller 1913: 242; Kholodkovskii 1912: 285, 294; Kleine 1932a: 296; Knotek 1894a: 553, 1897: 146, 1898b: 322; Lengerken 1939: 51, 1954: 72; Louzil 1961: 43, 150; Lunardoni & Leonardi 1889: 437; MacDougall 1921: 110, 1925: 37; Madan 1930: 99; Munro 1926: 49; Nordlinger 1856: 39; Nosek 1959a: 118, 1959b: 87; Nunberg 1929c: 117; Nusslin 1898: 278, 1906b: 16, 1913: 204, 1927: 292; Okolow 1970; Perris 1856a: 244; Peyerimhoff 1919: 250, 1926: 385; Pfeffer 1942a: 18, 1989a: 26; Postner 1974: 408; Prell 1930c: 642, 1931: 368; Rafes 1962; Ratzeburg 1837: 183, 1839: 223; Rhumbler 1922: 280, 1927: 292; Rimski-Korsakov et al. 1949: 304; Ritchie 1917: 224; Rupertsberger 1880: 227; Saalas 1913a: 69, 76, 1949: 340, 348; Scheidter 1916: 214–215; Schimitschek 1955a: 144–145; Schonherr 1955: 56–60; Schroder 1896: 357; Schwappach et al. 1929: 186; Schwerdtfeger 1944a: 173, 1957a: 181, 1981: 187; Sedlaczek 1935a: 162; Simmel 1924: 227; Spessivtsev 1913a: 52; Stark 1926a: 333, 1952: 160; Stefanov 1949a: 109; Tragardh 1914: 83; Wachtl 1901: 381; Weber, H. 1926: 577; Wolff & Krausse 1922: 74; Zvierezomb-Zubovsky 1918: 1–35. (**ds**) Acloque 1896; Andersch 1851; Androic 1966: 49; Audras & Schaefer 1957; Bain 1974: 15; Balazy & Michalski 1960; Bangsholt 1975: 95; Barthe 1896; Bartindale & Bartindale 1948: 138; Bau 1888; Beck 1817; Bedel 1888b; Beffa 1949; Beeson 1938: 288; Bejer-Petersen & Jorum 1977: 7; Benick 1921; Bielz 1851, 1887; Blanchere & Robert 1889; Boas 1923: 318; Bokowsky 1930; Borchert 1951; Brakman 1966b: 203; Brancsik 1871; Browne 1968: 343; Buck 1955b: 191; Bucking 1932; Butovitsch & Heqvist 1947; Calwer 1884, 1893; Carpentier & Delaby 1908; Cecconi 1897; Chapman 1868a, 1869d; Chapuis 1869: 30, 1873: 238; Chapuis & Candeze 1853; Crotch 1863; Debatisse 1945; Dejean 1837; Duftschmidt 1825; Eder 1934; Eggers 1904; Endrodi 1958b; Ericson & Sandin 1893; Escalera 1919; Escherich 1923b: 479, 503, 1932b; Everts 1900, 1922: 638, 1925; Fauvel 1885; Favre 1890; Forbes 1899; Forster 1849: 440; Fowler 1891; Fricken 1889: 280; Fuchs 1904a, 1905a, 1906b; Gabler 1949b; Gaubil 1849: 127; Gornostaev 1917; Gozis 1875: 79; Gredler 1868, 1886: 370; Grill 1895: 308; Grune 1979: 69; Gyllenhall 1827: 618; Hagedorn 1903a, 1910d: 15; Hansen, V. 1939, 1956, 1964: 457; Hellen 1947; Helliesen 1916: 83; Henschel 1895a: 147; Heyden 1876: 298; Heyden, Reitter, & Weise 1883: 181, 1891: 669, 1906: 709; Horion 1951; Jazentkovsky 1912: 287; Judeich & Nitsche 1895: 447, 476; Kadyrov 1989; Kaltenbach 1874: 428; Karpinski 1926: 82, 1931: 21, 1933b: 23; Karpinski & Strawinski 1948: 154; Kersten 1933: 72; Kestercanek 1881a: 12; Kiefer et al. 1942: 528; Klefbeck & Sjoberg 1960: 228-229; Kleine 1912a: 262–263, 267, 1912b: 170, 1913a: 34, 1932a: 296, 1934a: 128; Kloft & Hinks 1945: 217; Knotek 1892a: 34, 1894a: 553, 1898b: 322; Koca 1905: 191; Koltze 1901: 152; Koppen 1882: 247; Koschitsky 1900: 83; Kovacevic 1957: 67; Kraatz 1869: 59; Kurir 1947c: 22; Lacordaire 1866: 363; Langhoffer 1915c: 156; Leclercq 1971; LeComte 1951: 116; Lentz 1857: 138; Lindemann 1884b: 263; Lomnicki 1886a: 241, 1913b: 147; Lucht 1987: 276; Luigioni 1929: 992; Lunardoni & Leonardi 1889: 437; Lundberg 1988; Mahler 1987: 232; Marcu 1926c: 60; Matthews & Fowler 1883: 42; Mayne 1953: 310; Michalski 1957: 162; Moreau 1948: 47; Munster 1928: 288; Murray 1853: 60; Negru 1966b: 398, 1968a: 454, 1968c: 91; Nunberg 1928b: 87, 96, 1954: 36; Nusslin 1898: 278; Orest 1926c: 60; Palm 1959: 60, 214, 348; Perris 1876a: 254, 1877a: 414; Peyerimhoff 1919: 250, 1926: 385; Pfeffer 1928b: 2, 8, 1931b: 73, 1989a: 26; Pittioni 1943: 174; Pjatnitskii 1930a: 163; Postner 1974: 408; Prossen 1913: 82; Rapp 1934: 719; Ratzeburg 1837: 183, 1839: 223;

Redtenbacher 1858: 828, 1874: 371; Reitter 1869b: 153, 1894a: 51, 1916: 278; Rimski-Korsakov et al. 1949: 304; Rivers 1886: 66; Roubal 1941: 257; Saalas 1913a: 69, 76, 1913b: 118, 1931: 67; Sahlberg 1900: 104; Sainte-Claire 1914: 468; Sainte-Claire & Mequignon 1938: 443; Schaufuss 1915: 1219; Schaum 1859: 95, 1862: 100; Schedl 1960a: 79, 1961b: 187, 1971f: 146, 1980a: 5, 1981b: 58; Scheerpeltz & Winkler 1930: 255; Schilsky 1909: 187; Schiodte 1873: 100; Schwerdtfeger 1987: 187; Seidlitz 1872: 392, 1891a: 560, 1891b: 606; Sharp & Fowler 1893: 34; Sielike 1875: 282; Stark 1926a: 333, 1927b: 87, 1936a: 148, 1952: 160; Stein 1868: 113; Stein & Weise 1877: 163; Stephens 1829a: 146, 1830: 359, 1839: 207; Stierlin 1898: 434; Stierlin & Gautard 1871: 291; Strohmeyer 1912e: 250; Sturm 1843: 229; Thomson 1865: 350, 1868: 218; Tragardh 1914: 83; Tredl 1907: 8; Villa & Villa 1833: 26; Westhoff 1882: 237; Wichmann 1927a: 55–56; Winter, T. G. 1983: 42. (**tx**) Acloque 1896; Apel 1983; Arnoldi et al. 1955: 662; Bach 1854, 1864; Balachowsky 1949a: 86; Barbey 1901: 20, 60; Bechstein et al. 1805: 102; Bedel 1888b; Beffa 1949, 1961; Bertolini 1872; Boas 1923: 318; Brancsik 1871; Carpentier & Delaby 1908; Castelnau 1840; Chapuis 1869: 30, 1873: 238; Chapuis & Candeze 1853; Cieslar 1894; Csiki 1907; Doebner 1860; Dombrowski 1887; Duffy 1953; Duftschmidt 1825; Eggers 1911a: 73, 1920, 1929e: 42; Eichhoff 1864b: 30, 1881a: 38, 134, 1883a: 103, 125; Endrodi 1957b; Erichson 1836: 56; Escherich 1923b: 479, 503; Escherich & Escherich 1897; Everts 1903: 743, 1922: 638; Fabricius 1787: 37, 1792: 366, 1801: 390; Fairmaire 1864: 151; Fauvel 1885, 1889; Ferrant 1911; Fleischer 1927; Formanek 1907: 18; Fricken 1889: 280; Fuchs 1912a; Gabler 1949b, 1955; Gemminger & Harold 1872: 2674; Gillanders 1908; Girard 1873; Gmelin 1790: 1602; Grune 1979: 68–69; Gyllenhal 1813: 339, 1827: 68; Hagedorn 1910a: 48; Hansen, V. 1956, 1964: 457; Henschel 1876a: 208, 240, 1895a: 147; Herbst 1793: 112; Hopkins 1914: 123, 1915c:pls. 9, 11, fig. 9; Houlbert 1922a:pl. 1, 1922b: 251; Illiger 1907: 321; Jacquelin du Val & Fairmaire 1868: 102; Judeich & Nitsche 1895: 447, 476; Karpinski 1933b: 23; Karpinski & Strawinski 1948: 154; Knotek 1892a: 34; Kuhnt 1913: 1050; Lacordaire 1866: 363; Latrielle 1807: 279; Lepesme 1944: 273; Letzner 1891: 373; Leunis 1886: 179; Louzil 1961: 105; Lovendal 1889b: 41, 1898: 92; Lucas 1920: 342; Lucht 1987: 276; Luigioni 1929: 992; Lunardoni & Leonardi 1889: 437; Lundberg 1988; Negru 1966b: 398; Nordlinger 1856: 39; Nunberg 1928a: 140, 1929c: 117, 1954: 36; Nusslin 1911a: 255, 1912c: 282; Okolow 1970: 171–200; Olivier 1795b: 12; Panzer 1795a: 286; Paykull 1800: 150; Perris 1877a: 414; Pfeffer 1932b: 12, 1942a: 18, 1955a: 94, 1989:pl. 1; Portevin 1935: 316; Postner 1974: 408; Quaschik 1953: 35; Ratzeburg 1837: 183, 1839: 223; Redtenbacher 1849a: 362, 1849b: 27, 1858: 828, 1874: 371; Reitter 1894a: 51, 1913a: 41, 1916: 278; Rhumbler 1922: 280, 1927: 292; Ritchie 1917: 224; Rupertsberger 1880: 227; Saalas 1913a: 69, 76, 1949: 340, 348; Schedl 1934f: 1634, 1952f: 86, 1980a: 5, 1981b: 58; Schimitschek 1937c: 46, 1955c: 76; Seidlitz 1872: 392, 1891a: 560, 1891b: 606; Sokanovskii 1959a: 276; Spessivtsev 1913a: 52–53, 1922a: 464, 492, 1925a: 162, 1931: 31; Stark 1931c: 81, 1936a: 148–150, 1952: 160; Stephens 1829a: 146, 1829b: 12, 1830: 359, 1839: 207; Stierlin 1898: 434; Stresemann et al. 1989: 355; Thomson 1865: 350, 1868: 218; Westwood 1840: 39. (**ms**) Cieslar 1894; Escherich 1932b; Fuchs 1911b; Lucas 1920: 342.

***criddlei* (Swaine)** 1918a: 72 (*Leperisinus*). Holotype ♂; Aweme, Manitoba, Canada; CNCI, Ottawa.
Distribution: North America (Manitoba, Ontario, Quebec, Saskatchewan in Canada/ Colorado, Iowa, Kansas, Michigan, Minnesota, Montana, North Dakota, South Dakota in USA).
Hosts: *Fraxinus americana, F. pennsylvanica*.
References: (**ay**) Thomas, J. B. 1967. (**cn**) Doane et al. 1936; Ives & Wong 1988: 231; Stein, J. D. & Kennedy 1972: 119; Swaine 1918a: 71–72. (**hb**) Bright 1976d: 79; Chamberlin 1939: 186–187; Deyrup & Atkinson 1987a: 64; Doane et al. 1936; Stein, J. D. & Kennedy 1972: 119; Swaine 1918a: 71–72; Underhill 1951: 6; Wood, S. L. 1982b: 114. (**ds**) Beaulne 1956; Bright 1976d: 79; Chamberlin 1939: 186–187; Deyrup 1981b: 2; Deyrup & Atkinson 1987a: 64; Dodge 1938; Furniss, R. L. & Carolin 1977: 366; Gast et al. 1989: 382; Kleine 1934a: 130; Leng 1920: 338; Wood, S. L. 1957c: 399, 1982b: 114. (**tx**) Benoit 1985: 134; Bright 1967b: 676, 1976d: 79; Chamberlin 1939: 186–187; Dodge 1938: 20–21; Hoebeke 1978; de Ruette 1970: 104; Swaine 1918a: 71–72; Thomas, J. B. 1967; Titus, Meikle, & Harrison 1985: 81; Underhill 1951: 6; Wood, S. L. 1957c: 399, 1982b: 114.

***dolus* Schedl** 1975e: 453. Holotype ♀; 7 km E Coonoor, Nilgiri, Madras, India; MHNG, Geneve.
Distribution: Asia (Tamil Nadu in India).
References: (**tx**) Schedl 1975e: 453, 1979c: 83.

° ***dromiscens* Scudder** 1893:pl.1. Holotype, sex?; fossil in Colorado Miocene [USA]; not located.
Figures: Scudder 1893:pl. 1.
Distribution: North America (fossil in Colorado Miocene in USA).
References: (**ds**) Hagedorn 1910d: 16; Handlirsch 1908; Kleine 1912a: 163, 1912b: 170; Leng 1920: 363; Wickham 1920: 363. (**tx**) Hagedorn 1910a: 48; Keler 1928: 2; Scudder 1893:pl. 1.

***elatus* Niisima** 1913a: 2. Syntypes, sex?; Nishino (Hokkaido), Japan; Nobuchi Collection, Ibaraki.
Figures: Krivolutskaya 1968: 51.
Distribution: Asia (Japan).

Hosts: *Ulmus campestris, U. davidiana japonica.*
References: (**hb**) Krivolutskaya 1968: 50–53, 1973: 130. (**ds**) Kleine 1934a: 128; Krivolutskaya 1968: 50-53, 1973: 13; Nobuchi 1985b: 6; Stark 1936a: 148. (**tx**) Krivolutskaya 1968: 50–51; Murayama 1954b: 157, 1958: 931–932; Niisima 1913a: 2; Schedl 1934f: 1634; Stark 1936a: 148.

***elegans* Thomson** 1858: 145. Holotype, sex?; Gabun; not located, apparently lost.
Distribution: Africa (Gabun).
Notes: (1) A species 2.5 mm in length, resembling *H. fraxini* but without pronotal crenulations; it is obviously a member of another genus, possibly *Hylesinopsis*.
References: (**ds**) Hagedorn 1910d: 16; Kleine 1912b: 170. (**tx**) Hagedorn 1910a: 48; Thomson 1858: 145.

***eos* Spessivtsev** 1919: 248. Syntypes ♂?; Vladivostok and Manchuria; not located.
Figures: Stark 1952: 171 (declivity, galleries).
Distribution: Asia (Heilongjiang in China/ Ussuri, Siberia in E USSR).
Hosts: *Fraxinus excelsior, F. mandshurica, Juglans mandshurica.*
References: (**ec**) Kurenzov 1934a: 50, 1935c: 189, 1951d: 24. (**hb**) Kurenzov 1935a: 19, 26, 1935c: 189, 1948b: 126, 1951d: 24; Stark 1952: 170. (**ds**) Kleine 1934a: 130; Krivolutskaya 1983; Kurenzov 1934a: 50, 1935a: 19, 26, 1935c: 189, 1936b: 350; Nobuchi 1985: 6; Spessivtsev 1919: 248; Stark 1936a: 149, 1952: 170. (**tx**) Kurenzov 1941a: 108, 1948b: 126; Michalski 1969b: 565; Schedl 1934f: 1634, 1979c: 91; Spessivtsev 1919: 248; Stark 1936a: 149–151, 1952: 170.

° ***extractus* Scudder** 1893: 159. Holotype, sex?; Florissant, Colorado, Miocene [USA]; not located.
Figures: Scudder 1893:pl. 1, fig. 22.
Distribution: North America (fossil in Colorado Miocene in USA).
References: (**ds**) Hagedorn 1910d: 16; Handlirsch 1908; Hopkins 1900a: 66; Kleine 1912a: 163, 1912b: 170; Leng 1920: 363; Scudder 1893: 159; Wickham 1913: 5, 1920: 363. (**tx**) Wickham 1911b: 53, 69, 1913: 5. (**tx**) Keler 1928: 191; Scudder 1893: 159.

° ***facilis* Heer** 1856: 25. Holotype, sex?; Bernstein, Aix-en-Provence [France]; not located.
Figures: Heer 1856:pl. 1, fig. 8, Scudder 1885: 787 (adult).
Distribution: Europe (fossil in Oligocene Baltic amber in France).
References: (**ds**) Hagedorn 1910d: 16; Handlirsch 1908; Kleine 1912a: 163, 1912b: 170; Scudder 1885: 787, 1891: 540. (**tx**) Heer 1856: 25; Keler 1928: 6.

***fasciatus* LeConte** 1868: 170. Holotype ♂; York County, Pennsylvania [USA]; MCZ, Cambridge.
Distribution: North America (District of Columbia, Missouri, New Jersey, Pennsylvania, West Virginia in USA).
Hosts: *Fraxinus americana.*
References: (**ay**) Khalaf 1980: 339. (**cn**) Blackman 1950; Doane et al. 1936; MacAloney & Ewan 1964; Stein, J. D. & Kennedy 1972: 11. Swaine 1918a: 70–71. (**hb**) Blackman 1950; Bright 1976d: 79; Chamberlin 1939: 188; Deyrup & Atkinson 1987a: 64; Doane et al. 1936; MacAloney & Ewan 1964; Stein, J. D. & Kennedy 1972: 118; Swaine 1918a: 70–71; Underhill 1951: 6; Wood, S. L. 1982b: 115. (**ds**) Anonymous 1926c: 516; Blackman 1950; Blatchley & Leng 1916: 664; Bright 1976d: 79; Chamberlin 1939: 188; Deyrup 1981b: 4; Deyrup & Atkinson 1987a: 64; Hagedorn 1910d: 16; Henshaw 1882: 269, 1885: 149; Kleine 1912b: 170, 1914b: 398; Leng 1920: 338; Leonard 1928: 516; Morgan, Anne, Morgan, & Elias 1985: 1822; Smith, J. B. 1910: 404; Swaine 1909: 112; Wood, S. L. 1982b: 115. (**tx**) Blatchley & Leng 1916: 664; Bright 1976d: 79; Chamberlin 1939: 188; Gemminger & Harold 1872: 2674; Hagedorn 1910a: 48; LeConte 1868: 170, 1876: 380; Swaine 1909: 112, 1918a: 70–71; Underhill 1951: 6; Wood, S. L. 1956c: 248, 1966: 248, 1982b: 115.

***guatemalensis* (Wood)** 1967b: 89 (*Leperisinus*). Holotype ♀; Volcan Pacaya, Esquintla Prov., Guatemala; Wood Collection.
Distribution: North America (Guatemala).
Hosts: Three tree species, none resembling *Fraxinus*.
Notes: (1) Wood 1982b: 118 (to *Hylesinus*).
References: (**hb**) Wood, S. L. 1982b: 118. (**ds**) Wood, S. L. 1982b: 118. (**tx**) Wood, S. L. 1967b: 89–90, 1982b: 118.

° ***hydropicus* (Wickham)** 1916: 18 (*Apidocephalus*). Holotype, sex?; fossil in Miocene at Florissant, Colorado [USA]; not located.
Distribution: North America (fossil in Colorado Miocene in USA).
References: (**tx**) Wickham 1916: 18; Wood, S. L. 1992b: 80.

***irresolutus* Walker** 1859: 261. Holotype, sex?; Ceylon; BMNH, London, lost.
Distribution: Asia (Sri Lanka).
Notes: (1) Holotype lost, Blandford notes in BMNH, London, state that it was probably not a Scolytidae, but he did not indicate the correct family.
References: (**tx**) Gemminger & Harold 1872: 2674; Walker 1859: 261.

***laticollis* Blandford** 1894c: 65. Syntypes 3, sex?; Sapporo, Japan; BMNH, London.
Figures: Stark 1952: 164, 167 (adult), 165, 167 (galleries), Tsai & Li 1959: 80.
Distribution: Asia (Heilongjiang in China/ Japan/ Siberia, Ussuri in E USSR).
Hosts: *Fraxinus mandshurica japonica, F.*

lanuginosa serrata, F. rhynchophylla, F. spaethiana, Juglans sieboldiana.

References: (**cn**) Kurenzov 1935c: 188, 1951c: 78. (**ec**) Kurenzov 1934a: 57, 1951d: 24. (**hb**) Kurenzov 1935a: 19, 27, 1948b: 127, 1951d: 24; Stark 1952: 165. (**ds**) Blandford 1894c; Hagedorn 1910d: 17; Kleine 1912b: 171, 1934a: 129; Kurenzov 1934a: 57, 1935a: 19, 27, 1935c: 188, 1936a: 111, 1936b: 350, 1938a: 59; Nobuchi 1985: 6; Nunberg 1964a: 234; Stark 1936a: 149, 1952: 165. (**tx**) Blandford 1894c: 65; Eggers 1923a: 133, 1933f: 5; Hagedorn 1904d: 17, 1910a: 48; Kurenzov 1941a: 109, 1948b: 127, 1951: 24; Murayama 1954b: 158; Nüsima 1909: 127; Schedl 1934f: 1634; Sokanovskii 1954: 15; Stark 1936a: 149–150, 1952: 165; Tsai & Li 1959: 80.

striatus Eggers 1933b: 4. Lectotype ♂; Vladivostok, USSR; USNM, Washington, designated by Anderson & Anderson 1971: 31. Synonymy: Sokanovskii 1954: 15.

References: (**cn**) Kurenzov 1935c: 193, 1951c: 78. (**hb**) Kurenzov 1935a: 19, 26, 1948b: 128, 1951d: 24; Stark 1952: 165. (**ds**) Krivolutskaya 1983; Krivolutskaya & Kupyanskaya 1970; Kurenzov 1926, 1935a, 1935c: 193, 1936b: 350; Stark 1936a: 148–149, 1952: 165. (**tx**) Anderson, W. H. & Anderson 1971: 31; Eggers 1933b: 4; Kurenzov 1941a: 112, 1948b: 128; Michalski 1969b: 565; Nunberg 1964: 234; Schedl 1979c: 238; Sokanovskii 1954: 15; Stark 1936a: 148–149, 1952: 165.

° ***lineatus* Forster** 1891: 401. Holotype, sex?; Brunstatt im Elsass [France], Bernstein; not located.

Figures: Forster 1891:pl. 12, fig. 16.

Distribution: Europe (fossil in Oligocene Baltic amber in France).

References: (**ds**) Hagedorn 1910d: 17; Handlirsch 1908; Kleine 1912a: 163, 1912b: 171. (**tx**) Forster 1891: 401; Keler 1928: 18.

***lubarskii* Stark** 1936a: 153. Lectotype, sex?; Ussuriland, USSR; IZL, Leningrad, designated by Michalski 1969a: 889.

Figures: Stark 1952: 166 (galleries).

Distribution: Asia (Ussuri in E USSR).

Hosts: *Fraxinus mandshuricus*.

Notes: (3) Sokanovskii 1954: 166 (*pravdini* may be a synonym).

References: (**ec**) Kurenzov 1934a: 52. (**hb**) Kurenzov 1935a: 19, 26, 1948b: 128; Stark 1952: 165. (**ds**) Krivolutskaya 1983; Krivolutskaya & Kupyanskaya 1970; Kurenzov 1934a: 52, 1935a: 19, 26, 1936a: 109, 1938a: 59; Stark 1936a: 148, 153, 1952: 165. (**tx**) Kurenzov 1941a: 111, 113, 1948b: 128; Michalski 1969a: 889, 1969b: 565; Pfeffer 1944a: 131; Sokanovskii 1954: 166; Stark 1936a: 148, 153, 1952: 165.

***macmahoni* (Stebbing)** 1909b: 16 (*Sphaerotrypes*). Syntypes 2, sex?; Suliman Mountains, Baluchistan and Dera Ismail Khan (labeled: Zhob, Baluchistan); FRI, Dehra Dun.

Distribution: Asia (Jammu, Kashmir, Punjab in India/ Baluchistan in Pakistan).

Hosts: *Fraxinus excelsior hookeri, F. floribunda, Olea cuspidata.*

Notes: (3) Syntypes examined. Beeson 1941 (1961: 287) (*fraxinoides*, nomen nudum).

References: (**cn**) Kleine 1932a: 296; Stebbing 1914: 494. (**ec**) Beeson 1922c; Stebbing 1914: 494. (**hb**) Beeson 1922c; Kleine 1932a: 296; Stebbing 1914: 494. (**ds**) Beeson 1921a: 514–518, 1922c, 1941(1961: 287); Kleine 1932a: 296, 1934a: 129. (**tx**) Beeson 1921a: 514–518; Schedl 1959j: 172, 1959k: 39; Stebbing 1909: 4, 16, 1914: 494.

fraxinoides Schedl 1959k: 39 (*Leperisinus*). Holotype?, ♀?; Kashmir, Putshai, Lolab, India, lost?. Synonymy: Wood 1985: 268.

Notes: (3) Schedl 1959k: 39 cites a holotype that was never returned to the Forest Research Institute, nor is it in his collection; all specimens sent to him are accounted for; his female paratype appears to be the missing holotype.

References: (**ds**) Beeson 1922: 496, 1941 (1961: 287); Kleine 1934a: 129. (**tx**) Schedl 1959j: 172, 1959k: 39; Wood, S. L. 1985: 268.

alternans Schedl 1959j: 172. Holotype ♂; Rawalpindi, Punjab, India; Schedl Collection in NHMW, Wien. Synonymy: Wood 1985: 268.

References: (**tx**) Schedl 1959j: 172, 1979c: 17; Wood, S. L. 1985: 268.

***mandshuricus* Eggers** 1922c: 15. Lectotype, sex?; Mandschurei an Esche; USNM, Washington, designated by Anderson & Anderson 1971: 19.

Distribution: Asia (Manchuria [Heilongjiang?] in China/ E USSR).

Hosts: *Fraxinus* sp.

References: (**hb**) Stark 1952: 173. (**ds**) Kleine 1934a: 129; Murayama 1939: 137, 1942a: 54; Schedl 1934f: 1634; Stark 1952: 173. (**tx**) Anderson, W. H. & Anderson 1971: 19; Eggers 1922c: 15; Murayama 1939: 137; Schedl 1934f: 1634, 1979c: 148; Stark 1952: 173.

***mexicanus* (Wood)** 1956c: 249 (*Leperisinus*). Holotype ♂; Tecamachalco, Puebla, Mexico; SMUK, Lawrence.

Distribution: North America (Aguascalientes, Durango, Puebla in Mexico/ SW Texas in USA).

Hosts: Oleaceae (*Fraxinus anomala* or similar).

References: (**hb**) Wood, S. L. 1956c: 249, 1982b: 115. (**ds**) Wood, S. L. 1956c: 249, 1982b: 115. (**tx**) Wood, S. L. 1956c: 249, 1982b: 115.

***nanulus* Schedl** 1940c: 433. Holotype, sex?; Kokoda, 1200 ft., Papua, New Guinea; BMNH, London.

Distribution: New Guinea.

References: (**tx**) Schedl 1940c: 433–436, 1946c: 96, 1979c: 163.

***nilgirinus* Eggers** 1923a: 133. Holotype, sex?; Nilgiri Hills, Ostindien; Hamburg Museum, lost.
Distribution: Asia (Kerala in India/ Sri Lanka), New Guinea, Philippine Islands.
Hosts: *Drypetes sepiaria, Flindersia* sp.
References: (**tx**) Eggers 1923a: 133, 1927c: 70; Schedl 1959j: 172.

persimilis Eggers 1927c: 70. Lectotype ♂; Philippinen: Mindoro, Provinz Mindoro, Calapan; USNM, Washington, designated by Anderson & Anderson 1971: 24. Synonymy: Schedl 1959i: 172.
References: (**tx**) Anderson, W. H. & Anderson 1971: 24; Eggers 1927c: 70; Schedl 1959i: 172, 1979c: 191.

robustus Schedl 1975e: 453 (*Trogloditica*). Holotype ♀; India: Madras, Nilgiri, 7 km a l'est de Coonoor, 1350 m; MHNG, Geneve. Synonymy: Wood 1985: 268.
References: (**tx**) Schedl 1975e: 453; Wood, S. L. 1985: 268.

***nobilis* Blandford** 1894c: 64. Holotype, sex?; Sapporo, Japan; BMNH, London.
Distribution: Asia (Japan/ E USSR).
Hosts: *Fraxinus mandshurica*.
References: (**cn**) Kurenzov 1951c: 78. (**ec**) Kurenzov 1951d: 24. (**hb**) Kurenzov 1948b: 126, 1951d: 24; Stark 1952: 162. (**ds**) Blandford 1894c: 64; Hagedorn 1910d: 17; Kleine 1912b: 171, 1914b: 255, 1934a: 129; Nobuchi 1985b: 6; Stark 1936a: 149, 1952: 162. (**tx**) Blandford 1894c: 64; Hagedorn 1910a: 49; Kurenzov 1941a: 111, 114, 1951: 24, 1948b: 126; Niisima 1909: 126; Schedl 1934f: 163, 1954b: 198; Stark 1936a: 149, 1952: 16.

***oregonus* (Blackman)** 1943c: 396 (*Leperisinus*). Holotype ♀; Forest Grove, Oregon [USA]; USNM, Washington.
Figures: Furniss & Carolin 1977: 366.
Distribution: North America (California, Oregon in USA).
Hosts: *Fraxinus latifolia*.
References: (**bv**) Vernoff & Rudinsky 1980. (**cn**) Hopkins 1904a: 20. (**ec**) Furniss, R. L. & Carolin 1977: 366; Vernoff 1980. (**hb**) Chamberlin 1958: 97; Furniss, R. L. & Carolin 1977: 366; Hopkins 1904a: 20; Underhill 1951: 1; Vernoff 1980; Wood, S. L. 1982b: 114. (**ds**) Blackman 1943c: 396; Blackwelder & Blackwelder 1948; Chamberlin 1958: 97; Furniss, R. L. & Carolin 1977: 366. (**tx**) Blackman 1943c: 396; Chamberlin 1958: 97; Furniss, R. L. & Carolin 1977: 366; Underhill 1951: 1; Wood, S. L. 1982b: 114.

***orni* Fuchs** 1906a: 51. Syntypes, sex?; Karawanken, Austria; Fuchs Collection, not located.
Distribution: Europe (Austria/ Belgium/ Bulgaria/ Czechoslovakia/ England/ France/ Hungary/ Italy/ Norway/ Poland/ Romania/ W USSR).
Hosts: *Fraxinus ornus, F. excelsior*.
Notes: (3) See note (3) under *wachtli*.
References: (**ay**) Escherich 1923b: 479, 502; Fuchs 1912a; Marcu 1931c: 238; Negru 1968b: 807; Nunberg 1928a: 140; Nusslin 1912c: 282. (**bv**) Barr, B. A. 1969: 642; Prell 1930c: 64. (**cn**) Chorbadzhievo 1929; Escherich 1923b: 479, 502; Gabler 1955; Kleine 1932a: 296; Scheidter 1916: 214, 216; Schwerdtfeger 1944a: 174, 1957a: 181. (**ec**) Balazy & Michalski 1964a, 1964b; Gyorfi 1941b; Jamnicky 1957b: 20, 1957c; Karpinski 1932a: 101; Kielczewski & Seniczak 1972; Kleine 1908c: 180; Michalski & Seniczak 1972, 1974; Nosek 1959a: 118, 1959b: 85; Nunberg 1930: 204; Okolow 1963; Ruhm 1956b: 3; Schwerdtfeger 1944a: 174, 1957a: 181; Szczepanski 1960a: 406-408, 411, 413-415; Tudor 1969: 33. (**hb**) Beffa 1949, 1961; Chorbadzhievo 1929; Escherich 1923b: 479, 502; Fuchs 1906b; Gabler 1955; Hoffmann 1936: 45, 1937: 28; Karpinski 1933b: 23; Karpinski & Strawinski 1948: 154; Kleine 1932a: 296; Lengerken 1939: 44, 1954: 72; Nosek 1959a: 118, 1959b: 85; Pfeffer 1942a: 7; Prell 1930c: 643; Scheidter 1916: 214, 216; Schwerdtfeger 1944a: 174, 1957a: 181; Simmel 1914: 156, 1924: 225, 1928: 152; Stark 1952: 173; Tschorbadjiev 1929: 160; Underhill 1951: 5; Wagner 1914: 161–164. (**ds**) Allen, A. A. 1970; Audras & Schaefer 1957; Balachowsky 1943a; Beffa 1949; Bejer-Petersen & Jorum 1977: 9; Brakman 1966b: 203; Browne 1980b: 380, 1981a: 126; Buresh & Lazarov 1956; Chorbadzhievo 1929; Endrodi 1958b; Escherich 1923b: 479, 502, 1932b; Fuchs 1906a: 51, 1906b; Gyorfi 1941b; Hansen, V. 1964: 457; Heyden, Reitter, & Weise 1906: 709; Hoffmann 1936; Horion 1935, 1951; Karpinski 1931: 18, 1932a: 101, 1933b: 23, 1948b: 229; Karpinski & Strawinski 1948: 154; Kleine 1912a: 267, 1912b: 171, 1913a: 34, 85, 1932a: 296; Kolbe, W. 1916: 257; Kunnemann 1919: 50; Langhoffer 1915c: 156; Lazorko 1963; Leclercq 1971; Linder 1953: 71; Luigioni 1929: 992; Michalski 1957: 162; Nunberg 1928b: 87, 97, 1954: 37, 1960a: 155; Pfeffer 1931b: 73, 1935: 157, 1989a: 27; Pittioni 1943: 176; Prossen 1913: 82; Reitter 1916: 279, 349; Roubal 1941: 257; Ruskov 1928e: 61; Rydh 1977; Sainte-Claire & Mequignon 1938: 443; Schaufuss 1915: 1220; Schilsky 1909: 187; Stark 1936a: 149, 1952: 173; Strand 1963: 105–110; Tredl 1907: 8; Tschorbadjiev 1929: 160; Vrydagh 1955b: 36; Wichmann 1927a: 56, 1929: 56; Winter, T. G. 1983: 42. (**tx**) Allen, A. A. 1970: 247; Balachowsky 1949a: 90–93; Beffa 1949, 1961; Duffy 1953; Escherich 1923b: 479, 502; Fleischer 1927; Fuchs 1906a: 51, 1912a; Gabler 1955; Hansen, V. 1964: 457; Hoffman 1936, 1937; Kalina 1969; Karpinski & Strawinski 1948: 154; Lazorko 1963; Luigioni 1929: 992; Nunberg 1928a: 140, 1954: 37; Nusslin 1912c: 282; Pfeffer 1932b: 13, 1942a: 7, 1955a: 96; Quaschik 1953: 35; Reitter 1913a: 42, 1916:

279, 349; Schedl 1934f: 1634, 1958k: 141; Stark 1936a: 149, 1952: 173; Underhill 1951: 5; Wagner 1914: 161; Weber 1913: 51. (**ms**) Escherich 1932b; Weber 1913: 51.

***pravdini* Stark** 1936a: 151, 153. Lectotype, sex?; Ussuriland, USSR; IZL, Leningrad, designated by Michalski 1969a: 889.
Distribution: Asia (Ussuri in E USSR).
Hosts: *Fraxinus mandshurica*.
Notes: (3) Sokanovskii 1954: 166 (near *lubarskii*, validity doubtful).
References: (**cn**) Kurenzov 1951c: 78. (**ec**) Kurenzov 1951d: 24–27. (**hb**) Kurenzov 1935a: 27, 1948b: 127, 1951d: 24; Stark 1952: 166. (**ds**) Krivolutskaya 1983; Kurenzov 1935a: 27; Stark 1936a: 149, 153, 1952: 166. (**tx**) Michalski 1969a: 889, 1969b: 565; Pfeffer 1944a: 131; Kurenzov 1941a: 111, 1948b: 127; Sokanovskii 1954: 166; Stark 1936a: 149, 151, 153, 1952: 166. (**ms**) Pfeffer 1944a: 131.

***pruinosus* Eichhoff** 1868c: 149. Syntypes, sex?; Amer. Bor.; Hamburg Museum, lost.
Distribution: North America (Ontario in Canada/ Illinois, Indiana, Kentucky, Michigan, Missouri, New Hampshire, New York, North Carolina, North Dakota, Pennsylvania, Tennessee, Vermont in USA).
Hosts: *Fraxinus americana*.
References: (**hb**) Bright 1976d: 78; Chamberlin 1939: 188; Chapuis 1869: 32, 1873: 240; Deyrup 1981b: 4; Deyrup & Atkinson 1987a: 64; Dodge 1938; Leng 1920: 338; Swaine 1918a: 71–72; Underhill 1951: 6; Wood, S. L. 1982b: 112. (**ds**) Bright 1976d: 78; Chamberlin 1939: 188; Chapuis 1869: 32, 1873: 240; Deyrup 1981b: 4; Deyrup & Atkinson 1987a: 64; Dodge 1938: 30; Leng 1920: 338; Swaine 1909: 112; Wood, S. L. 1982b: 112. (**tx**) Bright 1976d: 78; Chamberlin 1939: 188; Chapuis 1869: 32, 1873: 240; Dodge 1938: 30; Eichhoff 1868c: 149, 1895: 607; Gemminger & Harold 1872: 2674; LeConte 1868: 177, 1876: 379; Schedl 1979c: 200; Swaine 1909: 112, 1918a: 71–72; Underhill 1951: 6; Wood, S. L. 1982b: 112.

***prutenskyi* Sokanovskii** 1959a: 276. Holotype, sex?; Russia: Kirghizie; Sokanovskii Collection.
Distribution: Asia (USSR in central Asia).
Hosts: *Fraxinus sogdiana*.
References: (**tx**) Sokanovskii 1959a: 276.

***regius* (Schedl)** 1942c: 166 (*Leperisinus*). Holotype ♂; Neu-Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1942c: 166.

***shabliovskyi* Kurenzov** 1941a: 113, 229. Syntypes, sex?; Ussuri, USSR; Mountainous-Taiga Station, Academy of Science, Vladivostok, USSR.
Distribution: Asia (Ussuri in E USSR).
Hosts: *Fraxinus mandshurica*.
References: (**hb**) Kurenzov 1951d: 24; Stark 1952: 159. (**ds**) Krivolutskaya 1983; Stark 1952: 159. (**tx**) Kurenzov 1941a: 113, 229; Stark 1952: 159.

***toranio* (Danthione)** 1788: 270 (*Byrrhus*). Syntypes, sex?; Europe; not located.
Figures: Balachowsky 1949a: 87, Grune 1979: 68, Postner 1974: 408, Stark 1952: 163, Tominic 1967: 80.
Distribution: Africa (Algeria/ Morocco), Asia (Israel/ introduced: Japan/ Turkey), Europe (Austria/ Belgium/ Bulgaria/ Czechoslovakia/ Denmark/ England/ France/ Germany/ Greece/ Hungary/ Italy/ Norway/ Poland/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia), South America (introduced: Argentina).
Hosts: *Fraxinus excelsior, F. ornus, Fagus* sp., *Olea europea, Syringa* spp.
References: (**cn**) Garcia-Tejero 1955: 230; Russo 1954: 6. (**ec**) Boucek 1957a, 1957b: 80, 1958; Chararas 1956b; Heqvist 1957b: 48; Ruhm 1956b: 3; Thompson, W. R. 1943: 53. (**hb**) Gyorfi 1957; Karpinski 1933b: 23; Lengerken 1939: 51; Peyerimhoff 1926: 385; Russo 1932: 87–101, 1939a: 4, 1954: 65. (**ds**) Escherich 1932b; Gyorfi 1940: 47; Horion 1935; Karpinski 1931: 18, 22, 38, 1933b: 23; Kortzas 1955: 177; Kozikowsky 1921: 180; Luigioni 1929: 992; Neresheimer & Wagner 1918: 134; Nunberg 1954: 36; Peyerimhoff 1926: 385; Pfeffer 1930b: 119, 1931b: 73, 76; Rapp 1934: 719; Reitter 1916: 349; Schilsky 1909: 187. (**tx**) Balachowsky 1936: 545, 1949a: 87; Danthione 1788: 270; Kuhnt 1913: 1050; Lesne 1908: 30; Luigioni 1929: 992; Nunberg 1954: 36; Pfeffer 1932b: 6; Portevin 1935: 316; Reitter 1916: 349; Schedl 1934f: 1634.

oleiperda Fabricius 1792: 366 (*Bostrichus*). Syntypes 2, sex?; Gallia meridionali; UZM, Copenhagen. Synonymy: Bedel 1888b: 410 (?), Lesne 1908: 30, Reitter 1916: 278, Balachowsky & Mesnil 1936: 545.
References: (**ay**) Bugnion 1887b; DelGuercio 1931, 1939; Escherich 1923b: 470, 506; Feytaud 1950a; Fuchs 1912a; Kleine 1921: 25; Nunberg 1928a: 140; Nusslin 1911a: 5, 51, 254, 1912c: 282; Nuzzaci 1972. (**bv**) Balachowsky 1963a: 1264; Balachowsky & Chararas 1964; Barr, B. A. 1969: 641; Grune 1979: 69; Rudinsky & Vallo 1979; Tominic 1967. (**cn**) Acatay 1943a: 60; Andres, F. de 1979; Ayoutantis, Kortzas, & Pelecassis 1951: 15–17; Bardia 1946; Berlese 1915; Boyer 1840; Browne 1968: 344; Chorbadzhievo 1924d; Costa 1857; DelGuercio 1913: 59–75, 1931; Eckstein 1926: 577; Escherich 1923b: 479, 506; Essig 1917: 62; Feytaud 1950a; Frohlich & Rodewald 1969: 191, 195, 198; Gabler 1955; Galvao 1939; Gentry, J. W. 1961, 1965: 110; Georgescu et al. 1957: 357, 414; Gokmen 1949; Gonzales de Andres 1939: 119–124; Goureau 1861: 114, 1865: 26; Graf 1977; Hofinger 1922; Iyriboz 1940b: 53;

Kholodkovskii 1912: 294; Kleine 1932a: 296; Millet 1960; Mokrzecki 1926b: 4; Mourikis & Vassilaina-Alexopoulou 1975: 142; Muller 1912: 184; Mussche et al. 1987; Navarro 1917: 554–563; Nusslin 1913: 238; Olalquiaga Faure 1955: 68; Pelekassis 1962; Picard 1921: 19; Rhumbler 1922: 280, 1927: 292; Riley, G. B. 1960; Scheidter 1916: 214–215, 1918: 87–114; Schimitschek 1937c: 46, 1938c: 2125, 1944: 163, 1955a: 144–145, 1955c: 76; Schwerdtfeger 1944a: 174, 1957a: 181; Solla 1892: 231; Souphieff & Scherbinovskaya 1937: 102; Talhouk 1954: 307; Tominic 1967; Topi 1911a: 54, 1911b: 138; Touzeau 1957: 27; Wachtl 1901: 381; Weber, H. 1926: 577; Wichmann 1927b: 353, 378; Wyniger 1962a: 90, 1962b: 297; Zvierezomb-Zubovsky 1918: 1–36. (**ec**) Apel 1983; Arambourg 1944: 15, 101, 1964: 115; Balachowsky 1963a: 1264; Balazy & Michalski 1964b; Boucek 1972b: 273; Chararas 1956b, 1957d; Elliot & Morley 1907; Graham 1969: 880; Haeselbarth 1967; Heqvist 1963; Jamnicky 1957b: 18, 20, 1957c; Karpinski 1932a: 101; Kleine 1908b: 202, 1908c: 180, 1909a: 43, 1944: 80; Lima & Costa 1962: 287; Novak, P. 1952: 412; Nusslin 1927: 292; Perris 1856a: 241; Pfeffer 1943b: 180; Rondani 1873: 149, 1876: 64; Russo 1926b: 75–84; Scheidter 1936: 234; Schimitschek 1955a: 144–145; Schwerdtfeger 1944a: 174, 1957a: 181; Sedlaczek 1935a: 162; Silvestri 1911: 392; Stefanov 1949a: 110; Talhouk 1961: 215; Thanassoulopoulos & Thanassoulopoulos 1984; Thompson, W. R. 1943: 53; Thompson, W. R. & Simmonds 1964: 69, 1965: 21; Tominic 1967, 1972; Touzeau 1958: 24; Tudor 1969: 32,33; Wichmann 1955a: 92; Yayla 1983. (**hb**) Acatay 1943a: 60; Apel 1983; Balachowsky 1963a: 1264; Balbi 1944; Barbey 1901: 20, 60; Beffa 1949, 1961; Bellevoye 1876: 171–180; Berlese 1915; Bodenheimer 1930; Bonnemaison 1953; Browne 1968: 344; Bugnion 1887a: 218–224, 1887b; Bukowsky 1930; Chorbadzhievo 1924d; Costa 1857; Damiano 1963: 458; Decaux 1890e, 1890f; Del-Guercio 1931: 41, 1939; Eckstein 1926: 577; Eichhoff 1881a: 38, 135, 1892b: 99; Escherich 1923b: 479, 506; Everts 1903: 744; Feytaud 1950a; Forbes 1899; Fuchs 1904a, 1907: 44; Gabler 1955; Galvao 1939; Gillanders 1908; Girard 1873; Graf 1977; Hagedorn 1903a; Hennings 1908b, 1908c: 214; Henschel 1888, 1895a: 149; Hickin 1963; Hill, D. S. 1987: 339; Iyriboz 1940b: 53; Karpinski & Strawinski 1948: 154; Kholodkovskii 1912: 294; Kleine 1932a: 296; Knoche 1908a: 44; Knotek 1897: 136, 145, 1898b: 322, 1907: 281; Lengerken 1954: 72; Lunardoni & Leonardi 1889: 438; Madan 1930: 99; Masutti 1964; Munro 1926: 49; Nusslin 1898: 274, 1906b: 10, 1913: 238, 1927: 292; Nuzzaci 1972: 61–81; Palm 1941: 205, 1954b: 28; Perris 1856a: 241; Pfeffer 1942a: 7, 1989a: 27; Postner 1974: 409; Rhumbler 1922: 280, 1927: 292; Rimski-Korsakov et al. 1949: 304; Rupertsberger 1880: 227; Scheidter 1916: 214–215, 1936: 234; Schimitschek 1944: 163, 1955a: 144–145; Schwerdtfeger 1944a: 174, 1957a: 181, 1981: 187; Sedlaczek 1935a: 162; Silvestri 1911: 392; Spessivtsev 1913a: 54; Stark 1952: 163; Stefanov 1949a: 110; Tominic 1967; Topi 1911a: 54, 1911b: 138; Touzeau 1957: 27; Tschorbadjiev 1929; Viana 1964: 128; Wachtl 1901: 381; Weber 1926: 577; Wichmann 1927b: 353, 378. (**ds**) Acloque 1896; Audras & Schaefer 1957; Bakke 1963b: 121; Balachowsky 1963a: 1264; Balbi 1944; Barthe 1896; Bedel 1888b: 393, 410; Beffa 1949; Bejer-Petersen & Jorum 1977: 7; Blanchere & Roberts 1889; Bodenheimer 1930; Borchert 1951; Brakman 1966a: 51, 1966b: 203; Browne 1968: 344; Buck 1955b: 191; Bukowsky 1930; Buresh & Lazarov 1956; Calwer 1884, 1893; Carpentier & Delaby 1908; Chapman 1869d; Chapuis 1869: 30, 1873: 238; Chapuis & Candeze 1853; Chorbadzhievo 1924d; Chrystal 1937; Crotch 1863; Debatisse 1945; Dejean 1837; Dzhambazishvili 1961a; Eggers 1899a, 1904, 1918; Endrodi 1958b; Escherich 1923b: 479, 503; Everts 1922: 638, 1925; Fagel & Guilleaume 1935: 545–546; Fauvel 1885; Favre 1890; Forbes 1899; Fowler 1882: 78, 1891; Fuchs 1904a, 1905a, 1907: 44; Gentry, J. W. 1961, 1965: 110; Gozis 1875: 79; Gredler 1866: 371; Grill 1895: 308; Grune 1979: 69; Hagedorn 1903a, 1904e, 1906, 1910d: 17; Hansen, V. 1939, 1956, 1964: 457; Hellen 1947; Henschel 1895a: 149; Heyden 1876: 298, 1879: 140; Heyden, Reitter, & Weise 1883: 181, 1891: 669, 1906: 709; Hickin 1963; Horion 1951; Jonescu 1950: 27; Kaltenback 1874: 436; Karpinski 1932a: 101; Karpinski & Strawinski 1948: 154; Kestercanek 1881a: 112; Klefbeck & Sjoberg 1960: 228-229; Kleine 1912a: 263, 267, 1912b: 171, 1913a: 34, 1932a: 296, 1934a: 129; Kloft & Hinks 1945: 217; Knotek 1898b: 322; Kobakhidze 1957: 178; Koltze 1901: 152; Kolubajiv 1934: 64; Kossman 1899: 188; Kraatz 1869: 59; Lacordaire 1866: 363; Langhoffer 1915c: 156; Leclercq 1971; Lomnicki 1913b: 147; Lucht 1987: 276; Lunardoni & Leonardi 1889: 438; Lundberg 1961: 68; Matthews & Fowler 1883: 42; Mourikis & Vassilaina-Alexopoulou 1975: 142; Munro 1921: 88; Negru 1957: 129, 1966b: 398, 1968a: 454, 1968c: 91; Negru & Rosca 1967: 141; Nordlinger 1868b: 186; Novak, P. 1952: 412, 1964; Nunberg 1928b: 88, 96, 1960a: 155; Nusslin 1898: 274; Olivier 1795b: 13; Palm 1941: 205, 1954b: 28, 1959: 19, 29, 130, 349, 1964: 193, 1965: 167; Pelekassis 1962; Peragallo 1881b: 71; Perris 1876a: 254, 1877a:

414; Pfeffer 1926a: 11, 1936: 90, 1989a: 27; Pittioni1943: 176;Pjatnitskii1930a: 163;Postner1974: 409;Prossen1913: 82;Ragusa1924: 114;Redtenbacher1858: 828,1874: 371;Reitter1894a: 51;Revy&Siroki1942: 82;Rimski-Korsakov et al. 1949: 304; Roubal 1941: 257; Ruffinelli Rey1976;Ruskov1928c: 61;Sainte-Claire & Mequignon 1938: 443; Schaufuss 1915: 1219; Schaum 1859: 95, 1862: 100; Schedl 1952f: 186, 1958f: 34, 1961b: 187, 1966f: 95, 1969g: 290, 1971b: 529, 1971d: 433,1979i: 290,1980a: 6,1981b: 58;Schilsky 1909: 187;Schiodte1873: 100;Schwerdtfeger 1981: 187; Seidlitz 1891a: 560, 1891b: 600; Sharp & Fowler 1893: 34; Souphieff & Scherbinovskaya1937: 102;Stark1926g: 154, 1927b: 87,1936a: 148,1952: 163;Stein1868: 113; Stein & Weise 1877: 163; Stierlin 1898: 425; Strauch 1861: 123; Talhouk 1954: 307, 1961: 215;Tredl1907: 8;Tschorbadjiev1929; Viana 1964: 128; Vrydagh 1955b: 36; West 1938: 184; Wichmann 1927a: 54–55, 1955a: 92; Winter, T. G. 1983: 42. (**tx**) Acloque 1896; Apel 1983; Balachowsky 1949a: 87, 1963a: 1264; Balachowsky & Mesnil 1935: 545–546; Barbey 1901: 20, 60; Bedel 1888b; Beffa 1949, 1961; Bertolini 1872; Carpentier & Delaby 1908; Castelnau 1840; Chapuis 1869: 30, 1873: 238; Chapuis & Candeze 1853; Chorbadzhievo 1924d; Csiki 1907; Danthione 1788: 270; Doebner 1860; Duffy 1953; Eggers 1922c: 15, 1929e: 43, 1934: 36; Eichhoff 1864b: 30, 1881a: 38, 135, 1883a: 103, 126; Endrodi 1957b; Erichson 1836: 56; Escherich 1923b: 479, 506; Everts 1903: 744, 1922: 638; Fabricius 1792: 366, 1801; Fairmaire 1864: 152; Fauvel 1885, 1889; Fuchs 1912a; Gabler 1955; Gemminger & Harold 1872: 2674; Gillanders 1908; Girard 1873; Grune 1979: 69; Hagedorn 1906, 1910a: 49; Hansen, V. 1956, 1964: 457; Henschel 1895a: 149; Herbst 1793: 119; Heyden 1875: 391; Iablokoff-Khnzorian 1961: 69; Illiger 1907: 321; Karpinski & Strawinski 1948: 154; Lacordaire 1866: 363; Lesne 1908: 30; Letzner 1891: 373; Lovendal 1889b: 41, 1898: 95; Lucht 1987: 276; Lunardoni & Leonardi 1889: 438; Negru 1966b: 398; Nunberg 1928a: 140; Nusslin 1911a: 5, 51, 254, 1912c: 282; Perris 1877a: 414; Pfeffer 1932b: 12, 1942a: 7, 1955a: 95, 1989a:pl. 1; Postner 1974: 409; Quaschik 1953: 35; Redtenbacher 1842: 21, 1858: 828, 1874: 371; Reitter 1894a: 51, 1913a: 41; Rey 1887: 231, 1892b: 30; Rhumbler 1922: 280, 1927: 292; Rupertsberger 1880: 227; Schedl 1934f: 1634, 1952f: 86, 1958f: 34, 1980a: 6, 1981b: 58; Schimitschek 1937c: 46, 1955c: 76; Seidlitz 1891a: 560, 1891b: 606; Spessivtsev 1913a: 54, 1922a: 464, 492, 1931: 31; Stark 1931c: 81, 1936a: 148, 1952: 163; Stierlin 1898: 435; Tominic 1967: 80.

scaber Marsham 1802: 56 (*Ips*). Syntypes, sex?; Horto Kensingtoniano, England; probably BMNH, London. Synonymy: Nordlinger 1868: 186, Schaum 1859: 95.

References: (**ds**) Murray 1853: 60; Schaum 1859: 95, 1862: 100; Schilsky 1909: 187; Stein 1868: 113; Stein & Weise 1877: 163; Stephens 1829a: 146, 1830: 360, 419, 1839: 208. (**tx**) Hagedorn 1910d: 17; Marsham 1802: 56; Nordlinger 1868: 186; Schaum 1859: 95; Stephens 1829a: 146, 1829b: 12, 1830: 360, 419, 1839: 20.

suturalis Redtenbacher 1842: 21. Syntypes, sex?; Europe; not located. Synonymy: Schaum 1859: 95, Nordlinger 1868b: 186.

References: (**ds**) Hagedorn 1910d: 17; Nordlinger 1868b: 186; Schaum 1859: 95, 1862: 100; Stein 1868: 113; Stein & Weise 1877: 16. (**tx**) Balachowsky 1949a: 87; Nordlinger 1868b: 186; Redtenbacher 1842: 21; Schaum 1859: 95.

esau Gredler 1866: 370. Syntypes, sex?; Tirol, Austria; not located. Synonymy: Reitter 1916: 278, Balachowsky 1949a: 87.

References: (**ds**) Blanchere & Roberts 1889; Calwer 1884, 1893; Gredler 1866: 371; Hagedorn 1910d: 17; Kraatz 1869: 59; Schilsky 1909: 187; Stein & Weise 1877: 163. (**tx**) Balachowsky 1949a: 87; Bertolini 1872; Gemminger & Harold 1872: 267; Gredler 1886: 370; Reitter 1916: 278.

***tupolevi* Stark** 1936a: 151. Lectotype, sex?; Kirghiz, Jelal-a ad, USSR; IZL, Leningrad, designated by Michalski 1969a: 889.

Figures: Greckin 1956: 1482, Stark 1952: 169.

Distribution: Asia (Yunnan in China/ Kirghig, Tadzhikistan, Turkistan in central Asia in USSR).

Hosts: *Fraxinus* spp.

References: (**cn**) Greckin 1956: 1482. (**hb**) Greckin 1956: 1482; Stark 1952: 168. (**ds**) Kadyrov 1988: 43, 45, 1989; Stark 1952: 168. (**tx**) Greckin 1956: 1482; Michalski 1969a: 889; Pfeffer 1944a: 131; Schedl 1936a: 151, 1951: 29, 1952k: 158; Sokanovskii 1958: 38; Stark 1936a: 151, 1952: 168.

tupolevi Eggers 1942c: 28 (*Leperisinus*). Lectotype, sex?; Turkestan, USSR; USNM, Washington, designated by Anderson & Anderson 1971: 35. Synonymy: Pfeffer 1944a: 131, Stark 1951: 229.

References: (**ds**) Stark 1936a: 148, 151. (**tx**) Anderson, W. H. & Anderson 1971: 35; Eggers 1942c: 28; Pfeffer 1944a: 131; Schedl 1952k: 158; Stark 1936a: 148, 151, 1951: 229. (**ms**) Pfeffer 1944a: 131.

tupolevi denticulosus Sokanovskii 1956: 44. Syntypes, sex?; Tadzhikistan, USSR; Sokanovskii Collection, not located.

References: (**tx**) Sokanovskii 1956: 44, 1958: 38.

***varius* (Fabricius)** 1775: 60 (*Bostrichus*). Holotype, sex?; Hafniae; UZMC, Copenhagen.

Figures: Bevan 1987: 114, Brandt 1960:pl. 28,

Grune 1979: 70, Hasek 1961: 5, Louzil 1961: 105, Pfeffer 1989a:pl. 1, Stark 1952: 172.
Distribution: Africa (Algeria/ Morocco/ Tunisia), Asia (Turkey), Europe (Austria/ Belgium/ Bulgaria/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Hungary/ Italy/ Luxemburg/ Norway/ Poland/ Romania/ Sardinia/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia).
Hosts: *Fraxinus* spp., rare or accidental in *Olea* sp., *Juglans* sp., *Quercus* sp., *Robinia* sp.
Notes: (3) Stephens 1829a: 146 (*Ips griseus* Marsham, nomen nudum, synonymy).
References: (**ay**) Lesne 1911a: 627; Sherb 1971. (**bv**) Grune 1979: 71. (**cn**) Anonymous 1979p; Archer 1866; Berwig 1950; Browne 1968: 385; Picard 1921: 19. (**ec**) Apel 1983; Hintze-Podufal & Druschke 1988; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978; Kohnle & Vite 1984a; Pedrosa-Macedo 1979; Perris 1856a: 244. (**hb**) Apel 1983; Browne 1968: 385; Decaux 1890e; Guerin-Meneville 1856; Hoffmann 1937; Pedrosa-Macedo 1979; Perris 1856a: 244; Postner 1974: 410; Schwerdtfeger 1981: 187. (**ds**) Anonymous 1979p; Bedel 1888b: 393, 410; Browne 1968: 385; Chapuis & Candeze 1853; Dejean 1821, 1825, 1837; Duftschmidt 1825; Gaubil 1849: 127; Grune 1979: 70–71; Herger 1985a: 79; Hoffmann 1936; Lucht 1987: 276; Murray 1853: 60; Pittioni 1943: 174; Postner 1974: 410; Reitter 1869b: 153; Sahlberg 1903c: 79; Schaum 1859: 95, 1862: 100; Schedl 1960a: 79, 1961b: 187, 1980a: 6, 1981b: 58; Schilsky 1890: 189, 1909: 187; Schwerdtfeger 1981: 187; Stein 1868: 113; Stein & Weise 1877: 163; Stephens 1829a: 146; Sturm 1826: 156; Villa & Villa 1835: 26; Winter, T. G. 1983: 15. (**tx**) Apel 1983; Bedel 1888b: 393, 410; Castelnau 1840; Chapuis & Candeze 1853; Dejean 1821, 1825; Doebner 1860; Duftschmidt 1825; Eggers 1929e: 43, 1933g: 18; Eichhoff 1864b: 31; Fabricius 1775: 60, 1801: 391; Gmelin 1790: 1603; Grune 1979: 70–71; Hoffmann 1936, 1937: 25–28; Letzner 1891: 373; Lucht 1987: 276; Marsham 1802: 54; Olivier 1795b: 12; Postner 1974: 410; Schedl 1942: 156, 1952f: 86, 1958k: 141, 1959k: 141, 1965g: 25, 1980a: 6, 1981b: 58; Scherb 1971; Schimdt, G. 1980: 16; Stephens 1829a: 146.

melanocephalus Fabricius 1792: 368 (*Bostrichus*). Syntypes 2, sex?; Daniae ligno Dom. Lund.; UZMC, Copenhagen. Synonymy: Ratzeburg 1837: 183, Eggers 1933g: 17.
Notes: (3) Stephens 1929a: 146 (*Bostrichus minutus* Panzer, nomen nudum, synonymy).
References: (**ds**) Hagedorn 1910d: 16; Holdhaus & Deubel 1910: 145; Kestercanek 1881a: 11; Stein 1868: 114; Stein & Weise 1877: 165; Swaine 1909: 149. (**tx**) Eggers 1931c: 17, 1933g: 17; Fabricius 1792: 368; Herbst 1793: 115; Kestercanek 1881b: 254; Panzer 1795a: 289; Ratzeburg 1837: 183; Swaine 1909: 149.

pubescens Fabricius 1798: 161 (*Anthribus*). Holotype, sex?; Europe; UZMC, Copenhagen. Synonymy: Ratzeburg 1837: 183, Eggers 1933g: 18.
References: (**tx**) Eggers 1929e, 1933g: 18; Fabricius 1792: 368, 1798: 161; Herbst 1793: 121; Ratzeburg 1837: 183.

fraxini Panzer 1799: 15 (*Bostrichus*). Syntypes, sex?; Germania; not located. Synonymy: Ratzeburg 1837: 183, Letzner 1891: 373, Eggers 1929e: 43.
Notes: (3) Endrodi 1957a: 308 (named abberation *uniformis*, no status).
References: (**ay**) Chararas 1956a; Escherich 1923b: 433, 479, 499; Feytaud 1950a; Fuchs 1912a; Hadorn 1933; Hopf 1937, 1938; Imhoff 1856: 228; Kaston 1936: 629; Kleine 1921: 23; Leisewitz 1906: 76; Marcu 1931c: 2; Nunberg 1928a: 140; Nusslin 1911a: 89, 156, 337, 1912c: 271, 282; Ritchie 1917: 224; Robertson 1961; Schwerdtfeger 1926: 90, 1929: 361; Sedlaczek 1902b: 244, 1907: 82; Verhoeff 1896: 111; Wichmann 1912a: 9–10. (**bv**) Bakke 1973; Barr, B. A. 1969: 642; Chararas 1960a; Jacobson 1972; Meixner 1937: 1214; Nuorteva 1956c: 58; Prell 1926: 68; Rudinsky & Vallo 1979; Schonherr 1955: 56–60, 1970a: 305–307; Schneider-Orelli 1947c: 94; Spaic 1964b; Wichmann 1912a: 9, 1967. (**cn**) Acatay 1943a: 58; Aerts 1921; Andres, F. de. 1979; Androic 1966: 49; Archer 1866; Barbey 1925: 621; Berlese 1915; Borodin 1915; Breny et al. 1952; Chorbadzhievo 1926, 1929; Colbeau 1871: 18; Collinge 1915: 789–791; Dzhambazishvili 1961: 751–757; Eckstein 1898a, 1926: 574; Escherich 1923b: 433, 479, 499, 1929, 1932a; Esterberg 1959; Feytaud 1950a; Fisher 1943: 1; Fr. 1931: 71; Frickhinger 1931; Gabler 1955; Garcia-Tejero 1955: 230; Gentry, J. W. 1965: 110; Georgescu et al. 1957: 357, 413; Gois 1944; Gradojevic 1940; Grandi 1951; Guse 1885; Hasek 1961: 5; Hess 1900: 43, 1907: 273; Hess & Beck 1914: 246, 1927: 300; Hierholzer 1954a: 341; Jacentkovsky 1933: 271; Judeich & Nitsche 1895: 447, 476; Kamuishnuii 1925: 53–55; Kauschinger 1893: 192; Keller 1885a: 25, 1903b: 37; Kevan 1944: 278; Kholodkovskii 1912: 278, 294; Khratova 1964; Kleine 1932a: 296; Kock 1932: 155; Konig, E. 1957: 101; Koppen 1882: 236, 248; Korolkova 1954: 93, 1960: 7–58; Kovacevic 1957: 67; Lohrenz 1907: 43; Loos 1919: 283–288; Luitjes et al. 1954: 126; MacDougall 1921, 1925; Macedo 1938; Marcu 1926: 60; McLaine 1936: 768, 1937: 6; Mokrzecki 1926b: 4; Monro 1936: 64; Mostauskis 1923: 219–240; Mostovsky 1923: 287–288; Muller 1912: 184; Nosek 1951: 106, 1952b: 98; Novak, V., Hrozinka, & Stary 1976: 106; Nusslin 1898: 278, 1913: 206; Ormerod 1883: 4; Osservatorio 1914, 1917, 1918; P. 1890: 280; Pelekassis 1962; Poeteren

1925; Pomocnicze 1876: 165; Ratzeburg 1871c: 80; Reh 1927; Rhumbler 1927: 306; Russo 1954: 65; Saalas 1949: 340, 348; Scheidter 1916: 214–215; Schevyrew 1905b: 1100; Schimitschek 1936b: 74, 1937b: 9, 1937c: 46, 1944: 162, 1955a: 142–143, 1955c: 76; Schindler, K. 1860: 21, 1861: 18; Schmidt 1881: 89; Schwappach et al. 1929: 186; Schwarz 1936: 16; Schwerdtfeger 1944a: 171, 173, 1956a: 19; Sitowski 1933: 383–388; Souphieff & Scherbinovskaya 1937: 102; Spaic 1955: 448; Spassky 1916: 219–226; Stock 1929: 1219; Tschorbadzhiev 1925: 57–61; Thales 1898: 391; Topi 1911a: 54, 1911b: 138; Tubeuf 1935: 73, 1936: 501; Vajda 1952: 121; Vassiliev 1916: 20–23; Villasenor 1966; Voute & de Vries Broekman 1965; Vrydagh 1955b: 36; Wachtl 1901: 375, 381; Warburton 1920: 247–253; Weber 1926: 574; Wichmann 1927b: 352; Wolff & Krausse 1922: 76; Zakharov & Lerkovich 1951: 299; Zieger 1950b: 38; Zivojinovic 1963: 450, 1966; Zolk 1935: 614–640; Zvierezomb-Zubovsky 1918: 1–36. (**ec**) Arambourg 1944: 119, 1964: 115; Askew 1965: 142; Balazy 1963, 1965a; Balazy & Michalski 1964a, 1964b; Balazy et al. 1977; Bernhard 1963: 158; Boucek 1958; Brammanis 1940; Chararas 1956b, 1957c, 1957d, 1959c, 1960a; Cooreman 1963: 46; Elliot & Morley 1907; Escherich 1925a; Fuchs 1914b; Gabler 1947b; Galoux 1947b; Gaulle 1906: 236; Gauss 1954: 423; Giraud & Laboulbene 1877: 414, 425, 427–428; Graham 1969: 876; Gusteleva 1980a: 78, 1983: 6; Gyorfi 1941b; Heqvist 1957b: 48, 1963; Hierholzer 1954a: 341; Hirschmann 1960, 1971b: 41; Hirschmann & Wisniewski 1982, 1983; Hirschmann & Zirngiebl-Nicol 1961; Jamnicky 1957b: 24, 1957c, 1959b: 814, 1962; Kielczewski 1976; Kielczewski & Seniczak 1972; Kielczewski & Wisniewski 1980a, 1983; Kleine 1908c: 180, 1909a: 43, 1910: 346, 1944: 78; Kneiff 1923: 246; Knoche 1907b: 476, 1908b: 200; Kokueva 1900: 569; Korolkova 1954: 93, 1960: 18; Kostenko 1929; Krezal 1959: 574; Lovendal 1890a: 131; Meyer 1934: 615; Michalski & Ratajczak 1989; Michalski & Seniczak 1972, 1974; Nikitsky 1978; Nosek 1951: 106, 1952b: 98, 1959a: 118, 1959b: 85; Novak 1952: 411; Nunberg 1930: 204; Nunberg & Wiackowski 1958: 130; Nuorteva 1957b: 52; Nusslin 1927: 293; Okolow 1963; Pettersen 1976b; Pfeffer 1923a: 330, 1928b: 2, 8, 1935: 157, 1943b: 179; Pfeffer & Prihoda 1950: 1; Poinar 1975: 164; Prell 1926: 68; Purrini & Ormieres 1981; Ratzeburg 1869a: 176; Rondani 1871: 233, 1873: 149; Ruhm 1956b: 3; Rummukainen 1954: 27; Ruschka 1921: 241; Saalas 1930: 118, 1949: 340, 348; Schaarschmidt 1959: 803; Schedl 1958d: 185; Schimitschek 1930a: 281, 1941a: 317, 1955a: 142–143; Schwerdtfeger 1929: 361, 1944a: 171, 173; Sedlaczek 1935a: 157; Silvestri 1911: 392; Simmel 1924: 225–228; Sitowski 1930: 3–5; Sokanovskii 1936: 74; Stammer 1933: 152; Stefanov 1949a: 109; Szczepanski 1960a: 407-409, 413, 415; Thompson, W. R. 1943: 52, 69; Tudor 1969: 32,33; Uvarov 1913; Vistinghoft 1924: 336; Vitzthum 1923: 101, 1926: 408; Westerboer 1963: 254; Wichmann 1957c: 66, 1958: 233, 1967; Wisniewski 1979b; Zinovjev 1957: 348. (**hb**) Acatay 1943a: 58; Adeli 1972: 14; Adelung 1905; Aerts 1921; Altum 1881c: 275, 1881e, 1883a, 1889c; Anonymous 1920: 126; Bach 1864; Badoux 1898; Barbey 1901: 20, 61, 1905, 1913, 1925: 621; Bargmann 1906; Bates 1844; Baudys 1929; Beffa 1949, 1961; Bellevoye 1876; Berlese 1915; Blankwaardt 1956: 141–150; Boas 1923: 314; Borodajewsky 1930c; Brandt 1948, 1960: 136,137; Braun 1941c; Buddenberg 1884: 83–93; Budge 1949; Bugnion 1887a; Bukowsky 1930; Cecconi 1906, 1924; Chapman 1959, 1868a, 1868b, 1869a; Chararas 1957c: 145–155, 1958a, 1960b: 3872-3874; Chorbadzhievo 1929; Dallimore & Munro 1922: 189–193; Decaux 1890f; DelGuercio 1931: 51–62; Eckstein 1889, 1897, 1926: 574, 1936, 1939b; Eggers 1899b; Eichhoff 1881a: 38, 135 1882b, 1882e: 322, 1883e: 50, 1889: 151, 1892b: 99; Escherich 1917: 97–115, 1923b: 433, 479, 499; Everts 1900, 1903: 744; Feytaud 1950a; Forbes 1899; Frankenberg 1941; Frauenfeld 1860; Fuchs 1904a, 1904b, 1906b, 1907: 12; Furst 1888: 109; Gabler 1955; Geyr 1924; Gillanders 1908; Girard 1873; Gornostaev 1916: 309; Gozis 1944; Graber 1879: 130; Grandi 1951; Grieb 1899; Gyorfi 1957; Hadorn 1933; Hagedorn 1903a; Hennings 1907a: 326, 1907c: 603, 1908b, 1908d; Henschel 1876a: 209, 240, 1880a, 1882b, 1886, 1888, 1895a: 148; Herbert 1920: 363; Hess 1895b, 1900: 43, 1907: 273; Hess & Beck 1914: 246, 1927: 300; Hickin 1963; Holmgren 1867: 121; Hopf 1937, 1938; Hufnagl & Puzyr 1951: 106; Jacobi 1906: 145; Jamnicky 1961a, 1962; Jemmett 1913; Judeich & Nitsche 1895: 447, 476; Kamp 1953a: 18; Karpinski 1933b: 23; Karpinski & Strawinski 1948: 154; Karsch 1883: 143; Kauschinger 1893: 192; Keller 1907a: 179, 1907b: 361, 1913: 242; Kholodkovskii 1889: 278, 1912: 278, 294; Kleine 1932a: 296; Knoche 1900: 387, 1904: 15, 1905: 354, 1906: 266, 1907b: 476, 1907d: 285, 1908a: 44; Knotek 1894a: 553, 1897: 145, 1898b: 322, 1907: 281; Konig 1957: 101; Lekander 1959a: 84; Lengerken 1939: 36, 1954: 72; Lohrenz 1907: 43; Louzil 1960: 40,149; Lovendal 1890a: 131; Lunardoni & Leonardi 1889: 436; MacDougall 1921: 106; Madon 1930: 99; Marcu 1941: 402; Munro 1926: 48; Nordlinger 1856: 40, 1870a: 188; Nosek 1959a: 118, 1959b: 85; Novak, B.

1976; Novak, V., Hrozinka, & Stary 1976: 106; Nunberg 1929a: 95, 1929c: 117; Nuorteva 1956c: 58; Nusslin 1905a: 83, 1906a: 56, 1906b: 10, 1907: 613, 1913: 206, 1927: 293; Orest 1927: 59; Ormerod 1877: 183; Pachmeyer 1891b: 239; Peyerimhoff 1919: 250; Pfeffer 1942a: 7, 1989a: 27; Ratzeburg 1837: 132, 183, 1839: 159, 224, 1871c: 80; Rey 1892a: 18; Rhumbler 1927: 306; Rimski-Korsakov et al. 1949: 272; Ritchie 1917: 224; Rupertsberger 1879: 231, 1880: 227; Russo 1926, 1932: 87–113, 1954: 65; Saalas 1913a: 69, 76, 1949: 340, 348; Sahlberg 1903a: 14; Scheidter 1916: 214–215; Schevyrew 1905b: 1100; Schimitschek 1930a: 281, 1939c: 274, 1944: 162, 1955a: 142–143; Schindler, K. 1860: 21, 1861: 18; Schmidt 1881: 89; Schneider-Orelli 1947b: 156, 1947c: 94; Schroder 1896: 357; Schwappach et al. 1929: 186; Schwerdtfeger 1929: 361, 1944a: 171, 173; Sedlaczek 1935a: 157; Silvestri 1911: 392; Simmel 1924: 225; Spessivtsev 1913a: 52; Stark 1926a: 333, 1952: 171; Stefanov 1949a: 109; Strohmeyer 1916: 116; Taschenberg 1880: 216; Topi 1911a: 54, 1911b: 138; Tragardh 1914: 83, 1930c: 477, 1931: 55, 1939b: 157, 167; Tschorbadjiev 1929: 160; Underhill 1951: 5; Voute & de Vries Broekman 1965; Wachtl 1901: 375, 381; Weber 1926: 574; Wichmann 1910b: 209, 1927b: 352; Wolff & Krausse 1922: 76; Zinovjev 1957: 348. (**ds**) Aaronsohn 1914: 590–594; Acatay 1943: 58–60; Acloque 1896; Adeli 1972: 14; Ammann & Knabl 1913, 1923; Andersch 1851; Androic 1966: 49; Audras & Schaefer 1957; Bain 1974: 15; Balachowsky 1949a; Barbey 1905; Barthe 1896; Bau 1888; Beck 1817; Beffa 1949; Bejer-Petersen & Jorum 1977: 9; Bielz 1851, 1887; Blackwelder 1947; Blanchere & Roberts 1889; Boas 1923: 314; Borchert 1951; Brakman 1966b: 203; Brancsik 1871, 1906; Buck 1955b: 191; Bukowsky 1930; Buresh & Lazarov 1956; Calwer 1893; Carpentier & Delaby 1908; Cecconi 1906; Chadwick & Nikitin 1968; Chaigneau 1959; Chapman, R. F. 1959; Chapman, T. P. 1868a, 1869d: 26–31, 1872: 106; Chapuis 1869: 32, 1873: 240; Chapuis & Candeze 1853; Chararas 1958a: 199; Chorbadzhievo 1924d, 1929; Chrystal 1937; Colbeau 1871; Crotch 1863; Dallimore & Munro 1922; Debitasse 1945; Dejean 1821, 1825, 1837; Duftschmidt 1825; Eder 1934; Eggers 1904, 1912f: 29; Endrodi 1958a, 1958b, 1981: 185, 1986: 217; Ericson & Sandin 1893; Escalera 1919; Escherich 1923b: 423, 479, 499, 1929, 1932b; Esterberg 1928, 1959; Everts 1900, 1922: 638, 1925; Eyquem 1891; Fauvel 1885; Favre 1890; Forbes 1899; Forster 1849: 440; Fowler 1891; Fr. 1931: 71; Fricken 1889: 279; Fuchs 1904a, 1905a, 1906b, 1907: 12; Gabler 1949b; Ganglbauer 1904; Gaubil 1849: 127; Gentry, J. W. 1965: 110; Gerhardt 1898a; Gobang 1855: 745; Gornstaev 1917; Gozis 1875: 79; Gredler 1866: 370; Grill 1895: 308; Gyllenhal 1827: 619; Gyrofi 1941b; Hagedorn 1903a, 1910d: 16; Hansen, V. 1939, 1956, 1964: 457; Heinemann 1908a; Hellen 1947; Henschel 1895a: 148; Heyden 1876: 298; Heyden, Reitter, & Weise 1883: 181, 1891: 669, 1906: 709; Holmgren 1867: 121; Horion 1951; Hubault 1923b; Ihssen 1939: 336; Illiger 1805: 130; Jazentkovsky 1912: 287, 1933: 271; Johnson, W. F. & Halbert 1902: 818; Joly 1960; Judeich & Nitsche 1895: 447, 476; Kaltenbach 1874: 546; Kamp 1953a: 18, 1961; Karpinski 1925: 216, 1931: 22, 1933b: 23, 1948b: 229; Karpinski & Strawinski 1948: 154; Keler 1922b: 210; Kersten 1933: 72; Kestercanek 1881a: 12; Kiefer et al. 1942: 528; Klefbeck & Sjoberg 1960: 228–229; Kleine 1912a: 262–263, 267, 1912b: 170, 1913a: 34, 1914a: 16, 1932a: 296, 1934a: 128; Kloft & Hinks 1945: 217; Knotek 1892a: 34, 1894a: 553, 1898b: 322; Koca 1905: 191; Kocher 1953: 133; Koltze 1901: 152; Koppen 1882: 236, 243; Kortzas 1955: 177; Koschitzky 1900: 83; Kostenko 1929; Kovacevic 1957: 67; Kraatz 1869: 59; Kuchlein 1955: 372; Kurir 1947c: 22; Lacordaire 1866: 363; Langhoffer 1915c: 156; Leclercq 1971; Leng 1918: 211; Liegel 1886: 43; Lindemann 1884b: 263; Lokaj 1868: 63; Lomnicki 1886a: 241, 1913b: 147; Luigioni 1929: 992; Luitjes et al. 1954: 126; Lunardoni & Leonardi 1889: 436; Lundberg 1956a: 186; Lundblad 1950b: 72; Marcu 1926c: 60; Matthews & Fowler 1883: 42; Michalski 1957: 162; Moragues 1889: 32; Munro 1921: 88, 1936: 63–66; Munster 1928: 288; Murayama 1940a: 232, 1942a: 51; Negru 1957: 129, 1966: 398, 1968a: 454, 1968c: 91; Negru & Rosca 1967: 141; Nilsson 1954: 64; Normand 1937: 268; Novak, P. 1952: 411, 1964; Nunberg 1928b: 87, 96, 1954: 37; Nusslin 1898: 278; Oliveira 1887: 327; Orest 1926c: 60; Pacher 1853: 49, 1865: 151; Palm 1959: 57, 214; Pelekassis 1962; Peragallo 1881b: 71; Perris 1876a: 254, 1877a: 414; Peyerimhoff 1919: 250; Pfeffer 1924b: 471, 1928b: 2, 8, 1931b: 73, 1950b: 76, 1989a: 27; Prell 1926: 62–76; Prossen 1913: 82; Ragusa 1924: 115; Rammyk 1956: 425; Rapp 1934: 720; Ratzeburg 1837: 132, 183, 1839: 159, 224, 1871: 80–87; Redtenbacher 1858: 828, 1874: 371; Reitter 1869b: 153, 1894a: 51, 1916: 279; Revy & Siroki 1942: 82; Rimski-Korsakov et al. 1949: 272; Roubal 1928: 454, 1935b: 72, 1941: 257; Ruskov 1928c: 61; Saalas 1913a: 69, 76, 1931: 67; Sahlberg 1900: 105; Sainte-Claire 1914: 469; Sainte-Claire & Mequignon 1938: 443; Schaschl 1854: 133; Schaufuss 1915: 1220; Schaum 1859: 95, 1862: 100; Schilsky 1909: 187; Schiodte 1873: 101; Schwarz 1886: 55; Seidlitz 1872: 392,

1891a: 560, 1891b: 606; Sharp & Fowler 1893: 34; Siebke 1875: 282; Simmel 1914: 156; Sokanovskii 1936: 74; Souphieff & Scherbinovskaya 1937: 102; Stark 1926a: 333, 1926j: 124, 1927b: 87, 1936a: 148, 1952: 171; Stein 1868: 113; Stein & Weise 1877: 163; Stephens 1829a: 146, 1830: 360, 1839: 208; Stierlin 1898: 435; Stierlin & Gautard 1871: 292; Sturm 1826: 156, 1843: 229; Thomson 1859: 146, 1865: 351, 1868: 215; Tragardh 1914: 83, 1939b: 157, 167; Tredl 1907: 8; Tressens 1952: 90; Tschorbadjiev 1929: 160; Underhill 1951: 5; Verdcourt 1952: 80; Villa & Villa 1833: 26; Villasenor 1966; Wachtl 1870: 259; Welch, R. C. 1968b: 19; Wessel 1877: 391; Westhoff 1882: 237; Wichmann 1910b: 209, 1924: 15, 1927a: 56; Wiepken 1883: 89; Winter, T. G. 1983: 15; Zoufal 1920: 20. (**tx**) Acloque 1896; Allen, A. A. 1970: 247; Bach 1854, 1864; Badoux 1898; Balachowsky 1949a: 90; Barbey 1901: 20, 61; Bechstein 1818: 76, 216; Bechstein et al. 1805: 107; Beffa 1949, 1961; Bertolini 1872; Blankenwaardt 1956; Boas 1923: 314; Brancsik 1871; Brandt 1960:pl. 28; Calwer 1858; Carpentier & Delaby 1908; Ceballos 1945; Chapuis 1869: 32, 1873: 240; Chapuis & Candeze 1853; Chorbadzhievo 1924d; Cieslar 1894; Csiki 1907; Dejean 1821, 1825; Doebner 1860; Duffy 1953; Duftschmidt 1825; Eggers 1912f, 1929e: 43, 1931a: 17, 1939b: 4; Eichhoff 1864b: 30, 1881a: 38, 135, 1883a: 103, 126, 1896: 607; Endrodi 1957a: 308, 1957b; Erichson 1836: 56; Escherich 1923b: 433, 479, 499; Escherich & Escherich 1897; Everts 1903: 744, 1922: 638; Fabricius 1801: 390; Fauvel 1885, 1887, 1889; Ferrant 1911; Fleischer 1905, 1927; Formanek 1907: 18; Fricken 1889: 279; Fuchs 1906, 1912a; Gabler 1949b, 1955; Gemminger & Harold 1872: 2674; Gillanders 1908; Girard 1873; Gyllenhal 1813: 345, 1827: 619; Hagedorn 1910a: 48; Hansen, V. 1956, 1964: 457; Hasek 1961: 5; Henry 1892: 15; Henschel 1876a: 209, 240, 1895a: 148; Illiger 1907: 321; Jacobi 1906: 145; Judeich & Nitsche 1895: 447, 476; Kalina 1970: 129; Karpinski & Strawinski 1948: 154; Knotek 1892a: 34, 1892b: 235, 1894b: 87; Kuhnt 1913: 1050; Kunnemann 1919: 50; Lacordaire 1866: 363; Lepesme 1944: 273; Letzner 1891: 373; Leunis 1886: 179; Lindemann 1875c: 156; Louzil 1961: 105; Lovendal 1889b: 42, 1898: 96; Luigioni 1929: 992; Lunardoni & Leonardi 1889: 436; Meixner 1937: 1214; Murayama 1940a: 232; Negru 1966b: 318; Nordlinger 1848: 252, 1856: 40, 1870a: 188; Novak, V., Hrozinka, & Stary 1976: 106; Nunberg 1928a: 140, 1929c: 117, 1930: 200–208, 1954: 37; Nusslin 1911a: 89, 156, 337, 1912c: 271, 282; Panzer 1799: 15; Perris 1877a: 414; Pfeffer 1932b: 12, 1942a: 7, 1955a: 95, 1989a:pl. 1; Portevin 1935: 316; Quaschik 1953: 35; Ratzeburg 1837: 132, 183, 1839: 159, 224; Redtenbacher 1849a: 362, 1849b: 27, 1858: 828, 1874: 371; Reitter 1887b: 193, 1894a: 51, 1913a: 42, 1916: 279; Rey 1887: 231; Rhumbler 1927: 306; Ritchie 1917: 224; Rupertsberger 1879: 231, 1880: 227; Saalas 1913a: 69, 76, 1913b: 304–306, 1949: 340, 348; Sahlberg 1903a: 14; Schedl 1934f: 1634, 1958k: 141; Schlechtendal & Wunsche 1879: 124; Schimitschek 1937c: 46, 1955c: 76; Schmidt, G. 1980: 16; Schwarz 1886: 55; Seidlitz 1872: 392, 1891a: 560, 1891b: 606; Spessivtsev 1913a: 52, 1919: 249, 1921a: 315, 1922a: 463, 1925a: 162, 1932: 29–30; Stark 1936a: 148–153, 1952: 171; Stephens 1829a: 146, 1829b: 12, 1830: 360, 1839: 208; Stierlin 1898: 435; Strand 1963: 105–110; Stresemann et al. 1989: 355; Swaine 1918a: 70; Taschenberg 1880: 216; Thomson 1858: 145, 1859: 146, 1865: 351, 1868: 215; Verhoeff 1896: 111; Wagner 1914: 161; Zimmermann 1868: 148; Zivojinovic 1963: 448. (**ms**) Brandt, H. 1960: 136–137; Chararas 1971a: 853; Cieslar 1894; Escherich 1932b; Gusteleva 1983: 6; Heinemann 1908a; Knoche 1907d: 2851; Knotek 1894b: 87; Lekander 1959a: 84; Lovendal 1890a: 131; Macedo 1938: 4; Ritter 1929: 554; Schwappach 1924: 56; Sedlaczek 1907: 82.

haemorrhoidalis Marsham 1802: 56 (*Ips*). Syntypes, sex?; England; presumably BMNH, London. Synonymy: Hagedorn 1910d: 16.
References: (**ds**) Hagedorn 1910d: 16; Stephens 1829a: 146, 1830: 359, 1839: 208. (**tx**) Hagedorn 1910d: 16; Marsham 1802: 55–56; Stephens 1829a: 146, 1829b: 12, 1830: 359, 1839: 208.

picipennis Stephens 1830: 359. Syntypes, sex?; near London and in Lancashire, England, BMNH, London. Synonymy: Hagedorn: 1910d: 16.
References: (**ds**) Hagedorn 1910d: 16; Stephens 1829a: 146, 1830: 359, 1839: 208. (**tx**) Hagedorn 1910d: 16; Stephens 1829a: 146, 1829b: 12, 1830: 359, 1839: 208.

henscheli Knotek 1892b: 234. Syntypes ♀?; Herzegovina, Prisma walde bei Nevesinje [Yugoslavia]; not located. Synonymy: Hagedorn 1910d: 16.
References: (**hb**) Knotek 1894a: 553. (**ds**) Hagedorn 1910d: 16; Knotek 1892a: 34, 1894a: 553; Reitter 1894a: 5; Schilsky 1909: 187. (**tx**) Hagedorn 1910d: 16; Knotek 1892a: 34, 1892b: 234–235, 1894b: 87; Reitter 1894a: 51, 1913a: 42; Schedl 1934f: 1634.

***wachtli* Reitter** 1887b: 193. Syntypes, sex?; S. France; NHMB, Budapest.
Distribution: Europe (S France/ Greece/ Italy/ Romania/ Spain/ Switzerland).
Hosts: *Fraxinus* sp.

Notes: (1) Balachowsky 1949a: 91 (treated as a subspecies of *orni* Fuchs). (3) If Balachowsky is correct, then *orni* must take this name. Schedl 1958k: 149 (incorrectly treated as a synonym of *varius*).

References: (**ec**) Kleine 1908c: 180. (**hb**) Underhill 1951: 5. (**ds**) Barthe 1896; Calwer 1893; Chararas 1958d: 200; Hagedorn 1910d: 19; Heyden, Reitter, & Weise 1891: 669, 1906: 709; Kleine 1912b: 171, 1913a: 87; Reitter 1894a: 52; Sainte-Claire & Mequignon 1938: 443; Schaufuss 1915: 1220; Stark 1936a: 148; Tredl 1907: 8. (**tx**) Balachowsky 1949a: 93; Fauvel 1887, 1889; Fuchs 1906; Hagedorn 1910a: 49; Portevin 1935: 316; Reitter 1887b: 193, 1894a: 52, 1913a: 42; Schedl 1934f: 1634, 1958k: 141, 1979c: 269; Stark 1936a: 148; Underhill 1951: 5.

Genus *Ficicis* Lea

FICICIS LEA 1910: 147. Type-species: *Ficicis varians* Lea, subsequent designation by Hopkins 1914: 122.

Ficiphagus Murayama 1958: 930. Type-species: *Phloeosinus goliathoides* Murayama =*Hylesinus despectus* Walker, original designation. Synonymy: Schedl 1962q: 486.

References: (**tx**) Murayama 1958: 930; Schedl 1962q: 486.

References: (**hb**) Wood, S. L. 1986a: 39. (**ds**) Wood, S. L. 1986a: 39. (**tx**) Hopkins 1914: 122; Lea 1910: 147; Lucas 1920: 295; Murayama 1958: 930; Schedl 1936g: 521; Wood, S. L. 1986a: 39.

***bakeri* (Sampson)** 1921: 27 (*Hylesinus*). Holotype ♂?; B. N. Borneo; BMNH, London.

Distribution: Indonesia (Borneo, Sumatra), Philippine Islands (Luzon/ Samar).

References: (**ds**) Browne 1970: 545; Sampson 1921: 27. (**tx**) Sampson 1921: 27.

sumatranus Eggers 1923a: 134 (*Hylesinus*). Holotype ♂; Tandjong Morawa (Sumatra); RNH, Leiden. Synonymy: Browne 1970: 545.

References: (**ds**) Schedl 1966b: 9. (**tx**) Beaver 1976b: 533; Browne 1970: 545; Eggers 1923a: 134, 1927b: 406; Michalski 1969b: 570; Nobuchi 1983: 299; Schedl 1958b: 498, 1979c: 246.

***brevipilosus* (Schedl)** 1942c: 167 (*Hylesinus*). Holotype ♀; Neu-Guinea; Schedl Collection in NHMW, Wien.

Distribution: New Guinea, New Hebrides.

Hosts: Liana.

References: (**tx**) Schedl 1942c: 167, 1955b: 283.

***despectus* (Walker)** 1859: 261 (*Hylesinus*). Holotype, sex?; Ceylon; BMNH, London.

Figures: Nobuchi 1967:pl. 1, Schedl 1951k: 142.

Distribution: Asia (Burma/ Andaman Islands, Assam, Karnataka, Kerala, Maharashtra, Nicobar Islands, Tamil Nadu, Uttar Pradesh in India/ Japan/ Sri Lanka/ Tonkin Island in Vietnam), Australia (Queensland), Fiji, Indonesia (Java, Sumatra), New Guinea, Philippine Islands (Luzon), Samoan Islands.

Hosts: *Ficus* spp., *Artocarpus* spp., rare in *Anogeissus* sp., *Buchanania sessilifolia, Mangifera indica, Santalum* sp., *Sterculia macrophylla*.

Notes: (3) Schedl 1951i: 41 (cites *latior* Eggers, nomen nudum, synonymy).

References: (**hb**) Beeson 1922c: 495; Browne 1961c: 64–65; Kalshoven 1958b: 162; Kleine 1932a: 296. (**ds**) Beaver & Browne 1975: 290; Beeson 1922c: 495; Browne 1961c: 64, 1966: 242–243, 1981b: 599; Hagedorn 1910d: 16; Kleine 1912b, 1914b: 273, 1932a: 296, 1934a: 129; Lacordaire 1866: 363; Miwa 1931: 268; Ohno et al. 1988a: 91, 1989: 59; Sampson 1921: 26; Schedl 1959a: 471, 1962b: 186, 1965g: 23, 1966b: 6, 1971a: 275, 1975a: 452, 1975e: 446. (**tx**) Eggers 1923a: 135, 1925: 160; Gemminger & Harold 1872: 2674; Hagedorn 1910a: 48; Lacordaire 1866: 363; Motschulsky 1863: 516; Nobuchi 1983: 299; Sampson 1921: 26; Schedl 1951i: 41, 1951k: 142, 1959a: 471, 1959j: 171; Walker 1859: 261.

granulifer Motschulsky 1863: 516 (*Hylesinus*). Syntypes 2 ♂; Des Montagnes de Nura-Ellia, Ceylon; IZM, Moscow. Synonymy: Sampson 1921: 27, Schedl 1958j: 171, Wood 1969c: 118.

Notes: Wood 1969c: 118 (syntypes examined).

References: (**tx**) Eggers 1923a: 135; Gemminger & Harold 1872: 2674; Motschulsky 1863: 516; Sampson 1921: 27; Schedl 1958j: 171; Wood, S. L. 1969c: 118.

scobipennis Chapuis 1869: 30 (*Hylesinus*). Holotype, sex?; Ceylon; presumably in IRSNB, Brussels. Synonymy: Sampson 1921: 27, Schedl 1954a: 138.

References: (**ds**) Chapuis 1869: 30, 1873: 238. (**tx**) Chapuis 1869: 30, 1873: 238; Eggers 1923a: 135; Gemminger & Harold 1872: 2675; Sampson 1921: 27; Schedl 1954a: 131, 1979c: 222.

porcatus Chapuis 1869: 31 (*Hylesinus*). Syntypes, sex?; Nouvelle-Hollande; IRSNB, Brussels. Synonymy: Nunberg 1956d: 211.

References: (**cn**) Anonymous 1941c: 97. (**ec**) Roberts 1976: 374. (**hb**) Anonymous 1941c: 97; Froggatt 1899: 268; Morstatt 1924: 23; Roberts 1976: 374; Wylie & Shanahan 1975. (**ds**) Beaver 1976b: 533, 1987b: 9; Browne 1966: 243, 1968c: 111, 1970: 540, 1974a: 64, 1980a: 372, 1980c: 484, 1981a: 125, 1986b: 334; Hagedorn 1910d: 17; Kleine 1912b, 1914b: 298; Nobuchi 1967: 18, 1985: 6; Ohno et al. 1988a: 91, 1989: 59; Roberts 1976: 374; Schedl 1962b: 186, 1962i: 72,75, 1964c: 305, 1965g: 23, 1966b: 8, 1971f: 146, 1972a: 143, 1972b: 267, 1975i: 345. (**tx**) Chapuis 1869: 31, 1873: 239; Gemminger & Harold 1872: 2675; Hagedorn 1910a: 49; Nobuchi 1983: 299; Nunberg 1956d: 211; Schedl 1939e: 327, 1962q: 486, 1970i: 222.

koebelei Lea 1910: 148. Syntypes 2, sex?; Australia: Queensland, Barron Falls; NMV, Melbourne. Synonymy: Schedl 1970i: 222.
References: (**ds**) Brimblecombe 1953: 8; Schedl 1936g: 521. (**tx**) Lea 1910: 148; Lucas 1920: 295; Schedl 1936g: 521, 1955b: 279, 1970i: 222.

similis Eggers 1923a: 136 (*Hylesinus*). Holotype, sex?; Sumatra; Eggers Collection, in NHMW, Wien. Synonymy: Schedl 1959j: 171.
References: (**tx**) Eggers 1923a: 136; Schedl 1954a: 139, 1959j: 171, 1979c: 229.

subcostatus Eggers 1923a: 137 (*Hylesinus*). Holotype, sex?; Sumatra; USNM, Washington. Synonymy: Nunberg 1956d: 210.
References: (**ds**) Schedl 1962i: 75; Wood, S. L. 1960a: 14–15. (**tx**) Anderson, W. H. & Anderson 1971: 32; Beeson 1929: 221; Eggers 1923a: 137, 1927b: 406; Nunberg 1956d: 210; Schedl 1951k: 132, 142, 1954a: 137, 1955b: 279, 284, 287, 1979c: 240; Wood, S. L. 1960a: 14–15.

crassus Beeson 1929: 220 (*Hylesinus*). Holotype ♂; Upolu: Vailima (Samoa); BMNH, London. Synonymy: Schedl 1951k: 132, 1954a: 137.
References: (**ds**) Beeson 1938b: 288. (**tx**) Beeson 1929: 220; Nunberg 1956: 210; Schedl 1951k: 132, 1954a: 137; Wood, S. L. 1960: 14.

subopacus Eggers 1930c: 10 (*Hylesinus*). Holotype, sex?; Fiji: Fitchi Inseln near Viti Levu, Suva; BMNH, London. Synonymy: Schedl 1939e: 327, Nunberg 1956: 210.
References: (**ds**) Beeson 1938b: 288. (**tx**) Eggers 1930c: 10; Nunberg 1956: 210; Schedl 1939e: 327, 1950f: 35–36, 1951k: 132, 1979c: 243.

insularum Beeson 1940: 192 (*Hylesinus*). Holotype ♀; Tuamotu Islands: Makatea (Mangareva Expedition); BPBM, Honolulu. Synonymy: Beaver 1991:(in press).
References: (**tx**) Beaver 1991:(in press); Beeson 1940: 192.

samoanus Schedl 1951k: 142 (*Hylesinus*). Syntypes ♂; Samoa: Upolu, Tapatapao; BPBM, Honolulu, and Schedl Collection in NHMW, Wien. Synonymy: Wood 1992b: 82–83.
Notes: (1) Schedl 1979c: 218 (citation of holotype invalid).
References: (**hb**) Beaver 1976b: 533. (**ds**) Beaver 1976b: 533; Browne 1966: 243. (**tx**) Schedl 1951k: 132, 142, 1979c: 218; Wood, S. L. 1992b: 82–83.

goliathoides Murayama 1955: 94 (*Phloeosinus*). Syntypes 4, sex?; Koyama, Kogoshima pref., Japan; USNM, Washington. Synonymy: Schedl 1962q: 486.
References: (**ds**) Murayama 1955: 94; Nobuchi 1967: 20, 1985: 6. (**tx**) Murayama 1955: 94, 1958: 970; Nobuchi 1967:pl. 1; Schedl 1962q: 486.

***elongatus* (Schedl)** 1942c: 167 (*Hylesinus*). Syntypes 2, sex?; Australien, Cairns, Queensland; Schedl Collection in NHMW, Wien.
Distribution: Australia (Queensland).
Notes: (1) Schedl 1979c: 89 (citation of holotype invalid).
References: (**tx**) Schedl 1942c: 167, 1979c: 89.

***javanus* (Eggers)** 1923a: 135 (*Hylesinus*). Lectotype ♂; Buitenzorg auf Java; USNM, Washington, designated by Anderson & Anderson 1971: 16.
Distribution: Asia (India/ Malaya), Indonesia (Borneo, Java), Philippine Islands (Luzon, Mindoro).
Hosts: *Ficus* spp., rare in *Acanthocephalus cadamba*, *Shorea leprosula*.
References: (**ay**) Gardner 1934b: 1–17. (**cn**) Mathur & Singh 1961a: 70; Yunus & Hua 1980: 228, 259. (**hb**) Beeson 1933: 10. (**ds**) Beeson 1933: 10; Eggers 1926a; Kleine 1934a: 129; Mathur & Singh 1961a: 70; Nunberg & Chujo 1961: 358; Schedl 1936d: 1, 1936j: 19; Yunus & Hua 1980: 228,259. (**tx**) Anderson, W. H. & Anderson 1971: 16; Beeson 1929: 221, 1933: 10; Eggers 1923a: 135, 1926a: 299, 1927b: 406; Gardner 1934b: 1–17; Schedl 1936j: 19, 1937e: 543, 1939e: 328, 1942a: 169, 1942d: 1, 1951i: 50, 1954a: 138, 1958g: 171, 1959a: 472, 1979c: 129.

***maculipennis* (Schedl)** 1975g: 217 (*Hylesinus*). Holotype ♀?; Papua, Porotop, Luth. Miss. Sawmill [New Guinea]; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
Hosts: *Ficus* sp.
References: (**tx**) Schedl 1975g: 217.

***pacificus* (Beeson)** 1929: 221 (*Hylesinus*). Holotype, sex?; Samoa: Savaii: Salailua; BPBM, Honolulu.
Distribution: Samoan Islands.
References: (**ds**) Beaver 1976b: 533; Beeson 1938b: 288. (**tx**) Beeson 1929: 221–223; Eggers 1930: 10; Schedl 1951k: 132.

pellitus (Schedl) 1955b: 288 (*Hylesinus*). Holotype ♀; Opulo, Samoa; Schedl Collection in NHMW, Wien. Synonymy: Beaver 1991: 91.
References: (**tx**) Beaver 1976b: 533, 1991: 91; Schedl 1955b: 288, 1979c: 187.

***pertinax* (Schedl)** 1975g: 217 (*Hylesinus*). Holotype ♀?; W New Guinea, Vogelkop; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1975g: 217, 1979c: 191.

***philippinensis* (Eggers)** 1923a: 137 (*Hylesinus*). Lectotype ♂; Los Banos auf Luzon (Philippine Islands); USNM, Washington, designated by Anderson & Anderson 1971: 24.
Distribution: Asia (Tonkin Island in Vietnam), New Guinea, Philippine Islands (Luzon), Samoan Islands.
Hosts: *Ficus* spp.

References: (**hb**) Beeson 1929: 221; Kalshoven 1956: 162. (**ds**) Beeson 1929: 221, 1938b: 288; Eggers 1926a: 299; Kleine 1934a: 129; Schedl 1979c: 192. (**tx**) Anderson, W. H. & Anderson 1971: 24; Beeson 1929: 221; Eggers 1923a: 137–138, 1926a: 299, 1927b: 406, 1930c: 10, 1939c: 114; Nunberg 1956d: 211; Schedl 1942a: 169, 1942c: 163, 1951k: 131, 142, 1954a: 138.

***robustus* (Eggers)** 1939d: 223 (*Hylesinus*). Holotype ♀; Fiji Ins. (Taveuni); BMNH, London.
Distribution: Australia (Queensland), Fiji Islands.
Notes: (3) Schedl 1950f: 42 (described male).
References: (**ds**) Browne 1974a: 64; Schedl 1962i: 75. (**tx**) Eggers 1939d: 223; Schedl 1950f: 36, 42, 1955b: 278, 284, 1979c: 212.

***sulcinodis* (Schedl)** 1974d: 458 (*Hylesinus*). Holotype, sex?; Panganda Logging Area, Watut Valley, Morobe Distr., New Guinea; CSIRO, Canberra.
Distribution: New Guinea.
References: (**tx**) Schedl 1974d: 458, 1979c: 246.

***varians* Lea** 1910: 147. Syntypes, sex?; Australia: N. S. Wales, Gosford: Sydney; presumably NMV, Melbourne.
Distribution: Australia (Queensland, New South Wales).
Hosts: *Ficus aspersa, F. europea, F. stenocarpa, Melicope neuroccoca, Morus alba, Pseudomorus brunoniana*, etc.
References: (**bv**) Gray, B. 1974c. (**hb**) Gray, B. 1974c; Hintze-Podufal & Druschke 1988. (**ds**) Schedl 1936g: 521, 1962i: 73, 1964f, 1965g: 25, 1971d: 428, 1971f: 147, 1972a: 143. (**tx**) Hopkins 1914: 122; Lea 1910: 147; Lucas 1920: 295; Schedl 1936g: 521, 1942c: 163, 1948g: 25, 1958i: 214.

***wallacei* (Blandford)** 1896b: 197 (*Hylesinus*). Holotype ♂; Mysol (Malay Archipelago); BMNH, London.
Distribution: Asia (Singapore), Indonesia (Mysol Island), New Guinea.
Hosts: *Ficus* sp., *Dracontomelum mangiferum*.
References: (**ds**) Hagedorn 1910d: 19; Kleine 1912b: 17; Schedl 1936g: 521, 1979f: 103. (**tx**) Blandford 1896b: 197; Hagedorn 1910a: 49; Schedl 1979c: 269.

Genus *Hylesinopsis* Eggers

HYLESINOPSIS EGGERS 1920: 40. Type-species: *Hylesinopsis dubius* Eggers, monobasic.

Pseudohylesinus Eggers 1919: 234. Type-species: *Pseudohylesinus togonus* Eggers, monobasic, preoccupied by Swaine 1917: 11.
References: (**tx**) Eggers 1919: 234, 1922b: 165.

Metahylesinus Eggers 1922b: 165. Type-species: *Pseudohylesinus togonus* Eggers, automatic, replacement name for *Pseudohylesinus* Eggers 1919: 234. Synonymy: Wood 1984b: 225.
References: (**tx**) Eggers 1919: 234, 1922b: 165; Schedl 1950d: 2, 1951g: 1104, 1957d: 9, 188, 1957e: 865–883, 1958d: 188, 1959n: 75–83, 1960g: 75; Wood, S. L. 1984b: 225.

Pseudophloeotribus Eggers 1933e: 18. Type-species: *Pseudophloeotribus africanus* Eggers, monobasic. Synonymy: Schedl 1957d: 9, Wood 1984b: 225.
References: (**tx**) Eggers 1933e: 18; Schedl 1951g: 1104, 1957d: 9, 1960g: 75; Wood, S. L. 1984b: 225.

Trypographus Schedl 1950e: 213. Type-species: *Trypographus joveri* Schedl, monobasic. Synonymy: Wood 1983a: 648.
References: (**tx**) Schedl 1950e: 213, 1957e: 865–883, 1959n: 123–124; Wood, S. L. 1983a: 648.

Chilodendron Schedl 1953d: 74. Type-species: *Chilodendron planicolle* Schedl, monobasic. Synonymy: Wood 1983a: 648.
References: (**tx**) Schedl 1953d: 74; Wood, S. L. 1983a: 648.

Glochicopterus Schedl 1954e: 75. Type-species: *Glochicopterus baphiae* Schedl, monobasic. Synonymy: Wood 1983a: 648, 1984b: 225.
References: (**tx**) Schedl 1954e: 75, 1959n: 403–404, 1961k: 403; Wood, S. L. 1983a: 648, 1984b: 225.

Hapalophloeus Schedl 1965e: 363. Type-species: *Metahylesinus brinckei* Schedl, original designation. Synonymy: Wood 1984b: 225.
References: (**tx**) Schedl 1965e: 363; Wood, S. L. 1984b: 225.

Hemihylesinus Schedl 1967e: 224. Type-species: *Hemihylesinus endroedyi* Schedl, monobasic. Synonymy: Wood 1984b: 226.
References: (**tx**) Schedl 1967e: 224; Wood, S. L. 1984b: 226.

Aridiamerus Schedl 1982: 284. Type-species: *Aridiamerus angolensis* Schedl, monobasic. Synonymy: Wood 1988b: 188.
References: (**tx**) Schedl 1982: 284; Wood, S. L. 1988b: 188.

Keys: Lepesme 1942a: 203.
References: (**ay**) Nobuchi 1969a: 53. (**tx**) Eggers 1920: 40; Lepesme 1942a: 203; Schedl 1950e: 210–211, 213, 1959n: 127–130, 1960g: 127; Wood, S. L. 1986a: 39, 1988b: 188–189.

***acacicolens* Wood** 1987: 547. Holotype, sex?; Kenya: Riff Valley; NHMW, Wien, automatic.
Distribution: Africa (Kenya/ Zaire).
Hosts: *Acacia* sp.
References: (**tx**) Wood, S. L. 1987: 547.

africanus Schedl 1963h: 259 (*Alniphagus*). Holotype, ♂; Kenya: Riff Valley; NHMW, Wien, preoccupied by Eggers 1933e: 19.
References: (**tx**) Schedl 1963h: 259, 1979c: 14; Wood, S. L. 1987: 547.

***africanus* (Eggers)** 1933e: 19 (*Pseudophloeotribus*). Holotype, sex?; N. Rhodesia: Livingstone, Zambesi R.; BMNH, London.
Distribution: Africa (Zambia/ Zimbabwe).

Notes: (1) Schedl 1957d: 9 (to *Metahylesinus*, =*Hylesinopsis*).
References: (**ds**) Beaver & Loyttyniemi 1985a: 65. (**tx**) Eggers 1933e: 19; Schedl 1957d: 9, 1960g: 76.

***alluaudi* (Lepesme)** 1942a: 207 (*Kissophagus*). Holotype, sex?; Kenya: Molo, Nau Escarpment, Afrique orientale anglaise, Station 19, 2,420 m; MNHN, Paris.
Distribution: Africa (Kenya).
Notes: (1) Schedl 1962j: 188 (to *Chilodendron*, =*Hylesinopsis*).
References: (**tx**) Lepesme 1942a: 207; Schedl 1959n: 413, 1962j: 188.

***angolanus* Wood** 1988a: 32. Holotype ♂; Angola; Schedl Collection in NHMW, Wien, automatic.
Distribution: Africa (Angola).
References: (**tx**) Schedl 1982: 284; Wood, S. L. 1988a: 32, 1988b: 188.

angolensis Schedl 1982: 284 (*Aridiamerus*). Holotype ♂; Angola; Schedl Collection in NHMW, Wien, preoccupied by Schedl 1959p: 24.
Notes: (1) Wood 1988b: 188 (to *Hylesinopsis*).
References: (**ds**) Ferreira 1965: 1111. (**tx**) Schedl 1959p: 24, 1982: 284; Wood, S. L. 1988b: 188.

***angolensis* Schedl** 1959p: 24. Holotype, sex?; Riv. Tchimboma, affl. dr. Cuango-Muque pres des sources de celui-ci, litiere, Alto Chicapa, Angola; IRSNB, Brussels.
Distribution: Africa (Angola).
References: (**ds**) Schedl 1959p: 16, 24. (**tx**) Schedl 1959p: 16, 24.

***arabiae* Schedl** 1975h: 353. Holotype, sex?; Jemen, Wadi Zabid; NHMB, Budapest.
Distribution: Asia (Yemen in Arabian Peninsula).
References: (**tx**) Schedl 1975h: 353.

***atakorae* (Schedl)** 1951g: 1105 (*Rhopalopselion*). Syntypes 2, sex?; Togo, Klouto, Monts Togo, 500–800 m. Dahomey: Koussoukoingou, Atokoka, 600–700 m; A. Villiers Collection, and Schedl Collection in NHMW, Wien.
Distribution: Africa (Dahomey/ Togo).
Notes: (1) Schedl 1979c: 29 (citation of holotype invalid).
References: (**tx**) Nunberg 1956b: 200, 203; Schedl 1951g: 1103, 1105–1106, 1957d: 9, 1960g: 77, 1979c: 29.

***ater* (Nunberg)** 1967b: 315 (*Trypographus*). Holotype, sex?; Congo: Kivu, Kavimvira (Uvira); MRCB, Tervuren.
Figures: Nunberg 1967b: 335.
Distribution: Africa (Zaire).
References: (**tx**) Nunberg 1967b: 315, 335.

***baphiae* (Schedl)** 1954e: 75 (*Glochicopterus*). Syntypes, sex?; Gold Coast: Mpraeso and Sunyani; BMNH, London.
Figures: Schedl 1954e: 76 (antenna), Nunberg 1967b: 335.
Distribution: Africa (Ghana).
Hosts: *Baphia pubescens, Anthocleista nobilis*.
References: (**ds**) Browne 1973a: 279; Schedl 1961k: 404; Thompson, G. H. 1963: 45. (**tx**) Nunberg 1967b: 313, 335; Schedl 1954e: 49, 75–76, 1961k: 404, 1979c: 34.

***brincki* (Schedl)** 1957c: 323 (*Metahylesinus*). Syntypes, sex?; SW Africa: Kaokoveld, Sanitatas about 85 miles WSW Ohopoho. Koakoveld, Anabib (Orupembe) 100 miles W Ohopoho. Kaokoveld, Ohopoho. Transvaal: Kruger National Park, Letaba Camp; ZIDSU, Lund, Sweden.
Distribution: Africa (Namibia/ South Africa).
References: (**ds**) Schedl 1960g: 77, 1965e: 350, 1982: 278. (**tx**) Schedl 1957c: 323, 1960g: 77, 1963h: 262, 1965e: 350, 363.

***confusus* (Eggers)** 1935c: 300 (*Kissophagus*). Holotype, sex?; Uganda (Gura R., 7500 ft.); BMNH, London.
Figures: Schedl 1959n: 44 (adult, galleries).
Distribution: Africa (Cameroon/ Kenya/ Uganda/ Zaire).
Hosts: *Bosqueia angolensis, Ficus* cf *capensis, Rhus* sp.
References: (**hb**) Gardner 1957a: 31; Schedl 1959n: 44. (**ds**) Gardner 1957a: 31; Lepesme 1942a: 207; Mayne & Donis 1962: 304; Schedl 1961d: 177, 1965e: 350, 1972k: 295. (**tx**) Browne 1973a: 285; Eggers 1935c: 300; Lepesme 1942a: 207; Schedl 1948c: 664, 1954: 878, 1955f: 257, 1959n: 41.

***decellei* (Nunberg)** 1969a: 394 (*Trypographus*). Holotype, sex?; Ivory Coast: Bingerville; MRCB, Tervuren.
Distribution: Africa (Ivory Coast).
References: (**tx**) Nunberg 1969a: 394.

***dimorphus* (Schedl)** 1937f: 16, reprint p. 2 (*Metahylesinus*). Syntypes ♀; Kati (presumably West Africa); NHML, Luxemburg and Schedl Collection in NHMW, Wien.
Distribution: Africa (West Africa).
Notes: (1) Schedl 1979c: 81 (citation of holotype invalid).
References: (**tx**) Schedl 1937f: 16, 1960g: 77, 1979c: 81.

***dubius* Eggers** 1920: 40. Syntypes 2, sex?; Kinchana (Kongostaat); 1 in Hamburg Museum, lost, 1 in Schedl Collection in NHMW, Wien.
Figures: Schedl 1960g: 127.
Distribution: Africa (Angola/ Cameroon/ Ghana/ Liberia/ Uganda/ Zaire).
Hosts: *Bosqueia angolensis, Morus lactea, M. mesozygia, Treculia africana*.
Notes: (1) Schedl 1979c: 85 (citation of holotype invalid).
References: (**hb**) Browne 1963a: 231; Schedl 1960g: 127. (**ds**) Browne 1963a: 231; Ferreira 1965: 1111; Schedl 1959p: 16, 1960g: 127, 1965e: 351, 1966c: 223, 1972e: 279, 1972k: 295, 1977d:

277. (**tx**) Eggers 1920: 40; Schedl 1954e: 49, 1960g: 127, 1979c: 85.

***emarginatus* (Nunberg)** 1973: 6 (*Trypographus*). Holotype ♂?; Zaire: Massif Ruwenzori, P.N.A., riv. Mukandwe, affl. Talya, 1,580 m; MRCB, Tervuren.
Distribution: Africa (Zaire).
References: (**tx**) Nunberg 1973: 6.

***endroedyi* (Schedl)** 1967e: 224 (*Hemihylesinus*). Holotype, sex?; Brazzaville, Filou brook; Kindamba, Meyoi settlement (Congo); NHMB, Budapest.
Distribution: Africa (Zaire).
References: (**tx**) Schedl 1967e: 224, 1979c: 90.

***ericius* (Schaufuss)** 1897a: 217 (*Diamerus*). Holotype, sex?; Natal; Hamburg Museum, lost.
Distribution: Africa (Natal in South Africa).
References: (**tx**) Eggers 1922b: 165; Schaufuss 1897a: 217.

***fasciatus* (Hagedorn)** 1909a: 737 (*Kissophagus*). Holotype, sex?; Ostafrika, Amani; MNB, Berlin.
Distribution: Africa (Cameroon/ Nigeria/ Tanzania/ Zaire).
Hosts: *Ficus* spp., *Pygeum africanum*.
Notes: (1) Schedl 1962j: 188 (to *Chilodendron*, =*Hylesinopsis*).
References: (**hb**) Gardner 1957a: 31; Kleine 1932a: 296. (**ds**) Gardner 1957a: 31; Hagedorn 1909a: 737, 1910a: 25; Lee, R. F. 1971: 31; Lepesme 1942a: 204; Kleine 1912b: 182, 1914b: 321, 1932a: 296. (**tx**) Eggers 1932c: 28; Hagedorn 1909a: 737, 1910a: 58; Lepesme 1942a: 20; Powell, W. 1980: 29; Schedl 1959n: 417, 1962j: 188.

***ficus* (Schedl)** 1954d: 878 (*Kissophagus*). Syntypes, sex?; Cote d'Ivoire, Adiopodoume; MNHN, Paris, and Schedl Collection in NHMW, Wien.
Distribution: Africa (Ivory Coast).
Hosts: *Ficus polita*.
Notes: (1) Schedl 1979c: 96 (citation of holotype invalid).
References: (**tx**) Schedl 1954d: 878, 1959n: 418, 1962j: 188, 1979c: 96.

***fuscipennis* (Chapuis)** 1869: 44 (*Phloeotribus*). Syntypes, sex?; Caffria [South Africa]; IRSNB, Brussels? (or Hamburg Museum, lost?).
Distribution: Africa (South Africa/ Zimbabwe).
References: (**cn**) Anonymous 1970c: 13. (**hb**) Schedl 1961k: 397–398. (**ds**) Anonymous 1970c: 13; Browne 1984a: 151; Hagedorn 1910d: 30–31; Kleine 1914b: 318; Schedl 1961k: 397, 1975k: 276. (**tx**) Chapuis 1869: 44, 1873: 252; Eggers 1927a: 196, 1932c: 23, 1933e: 23; Hagedorn 1910a: 40; Hopkins 1914: 122; Kleine 1934: 128; Schedl 1941d: 382, 1950c: 206, 1961k: 397.
globosus Hagedorn 1912c: 352 (*Hapalogenius*). Syntypes, sex?; PondoLand, im Ecoswald; MNB, Berlin. Synonymy: Eggers 1927a: 196. References: (**ds**) Kleine 1912b: 169, 1914b: 318, 1934a: 128. (**tx**) Eggers 1927a: 196; Hagedorn 1912c: 352; Hopkins 1914: 122.

***granulatus* (Lepesme)** 1942a: 206 (*Kissophagus*). Holotype, sex?; Mont Cameroun, versant Sud-Ouest, 1,800–2,000 m; MNHN, Paris.
Figures: Lepesme 1942: 206 (adult), Schedl 1959n: 419 (galleries).
Distribution: Africa (Cameroon/ Zaire).
Hosts: *Ficus* cf *capensis*.
Notes: (1) Schedl 1962j: 188 (to *Chilodendron*, =*Hylesinopsis*).
References: (**ec**) Schedl 1958d: 190–191. (**tx**) Lepesme 1942a: 206; Schedl 1959n: 418; 1960b: 162, 1962j: 188.

***hirsutus* (Schedl)** 1957e: 869 (*Trypographus*). Holotype, sex?; Tanganyika, Shume; BMNH, London.
Distribution: Africa (Tanzania).
Hosts: *Ficus* sp.
Notes: (3) Browne 1973a: 285 (a synonym of *confusus* Eggers).
References: (**ds**) Gardner 1957a: 32; Schedl 1960g: 123. (**tx**) Browne 1973a: 285; Schedl 1957e: 869, 1960g: 123.

***hispidus* (Eggers)** 1935c: 299 (*Metahylesinus*). Holotype, sex?; Congostaat (Leverville); MRCB, Tervuren.
Distribution: Africa (Zaire).
References: (**tx**) Eggers 1935c: 299; Schedl 1960g: 78.

***horridus* (Eggers)** 1924: 99 (*Hylesinus*). Holotype, sex?; Tshela (Congostaat); MRCB, Tervuren.
Distribution: Africa (Zaire).
Hosts: *Pentaclethra eetveldeana*.
References: (**hb**) Schedl 1958d: 194, 1960g: 78. (**ds**) Schedl 1960g: 78. (**tx**) Eggers 1924: 99–100, 1927a: 172; Schedl 1957d: 9, 1957e: 865–866, 1960g: 78.

***joveri* (Schedl)** 1950e: 213 (*Trypographus*). Syntypes, sex?; Cote d'Ivoire Adiopodoume; MNHN, Paris.
Figures: Schedl 1960g: 124.
Distribution: Africa (Ivory Coast).
Hosts: *Ficus polita*.
References: (**hb**) Cachan 1957: 15. (**ds**) Schedl 1964f: 617, 1971g: 192. (**tx**) Schedl 1950e: 213, 1954: 870, 1957e: 869, 1960g: 124.

***niger* (Schedl)** 1952j: 7 (*Hapalogenius*). Syntypes 2, sex?; Uganda; Schedl Collection in NHMW, Wien.
Distribution: Africa (Uganda).
Hosts: "Nudarira."
Notes: (1) Schedl 1979c: 166 (citation of holotype invalid).
References: (**ds**) Schedl 1960g: 79. (**tx**) Schedl 1952j: 7, 1960g: 79, 1979c: 166.

***oblongus* (Eggers)** 1935c: 299 (*Pseudophloeotribus*). Holotype, sex?; Uganda (Gura R. 7500 ft.); BMNH, London.
Distribution: Africa (Kenya/ Uganda).
References: (**ds**) Gardner 1957a. (**tx**) Eggers 1935c: 299; Powell, W. 1980: 29; Schedl 1960g: 79–80.

***orientalis* (Eggers)** 1943e: 72 (*Metahylesinus*). Holotype, sex?; Mozambique: environ d'Andrade, Vallee du Revoue; MNHN, Paris.
Distribution: Africa (Mozambique/ Tanzania).
References: (**ds**) Schedl 1960g: 80. (**tx**) Eggers 1943e: 72; Schedl 1960g: 80.

***pauliani* (Lepesme)** 1942a: 204 (*Kissophagus*). Holotype, sex?; Mont Cameroun, versant Sud-Ouest, 1,800–2,000 m; MNHN, Paris.
Distribution: Africa (Cameroon).
Notes: (1) Schedl 1962b: 188 (to *Chilodendron*, =*Hylesinopsis*).
References: (**tx**) Lepesme 1942a: 204; Schedl 1959n: 420, 1962b: 188.

***punctatus* (Eggers)** 1932c: 28 (*Kissophagus*). Holotype, sex?; Congo Belge; USNM, Washington.
Distribution: Africa (Ethiopia/ Zaire).
Notes: (1) Schedl 1962b: 188 (to *Chilodendron*, =*Hylesinopsis*).
References: (**ds**) Lepesme 1942a: 207. (**tx**) Anderson, W. H. & Anderson 1971: 26; Eggers 1932c: 28, 1943c: 64; Lepesme 1942a: 207; Schedl 1959n: 420, 1962b: 188.

***quadrituberculatus* (Schedl)** 1957d: 24 (*Metahylesinus*). Holotype ♂; Congo Belge, Yangambi; MRCB, Tervuren.
Distribution: Africa (Zaire).
Hosts: *Baphia pubescens*, *B. soldheidii*.
References: (**ds**) Schedl 1960g: 80. (**tx**) Schedl 1957d: 24, 1960g: 80, 1963h: 262.

***rhodesianus* (Eggers)** 1933e: 19 (*Pseudophloeotribus*). Holotype, sex?; N Rhodesia: Mazabuka; BMNH, London.
Distribution: Africa (Zambia).
Hosts: *Lonchocarpus* sp.
Notes: (1) Schedl 1957d: 9 (to *Metahylesinus*, =*Hylesinopsis*).
References: (**ds**) Beaver & Loyttyniemi 1985a: 65. (**tx**) Eggers 1933e: 19–20; Schedl 1951g: 1105, 1957d: 9, 1960g: 81.

***saudiarabiae* (Schedl)** 1971d: 434 (*Chilodendron*). Holotype ♀; Arabie-Seoudite, Abha; MHNG, Geneve.
Distribution: Asia (Saudi Arabia).
Hosts: *Ficus* sp.
References: (**tx**) Schedl 1971d: 434, 1979c: 220.

***secutus* Wood** 1987: 547. Holotype ♀; Uganda, Mpanga; BMNH, London, automatic.
Distribution: Africa (Uganda).
References: (**tx**) Schedl 1965f: 4; Wood, S. L. 1987: 547.

africanus Schedl 1965f: 4 (*Hylesinus*). Holotype ♀; Uganda, Mpanga; BMNH, London, preoccupied by Eggers 1933a: 19.
References: (**tx**) Schedl 1965f: 4; Wood, S. L. 1987: 547.

***senegambiensis* (Schedl)** 1941d: 382 (*Hapalogenius*). Holotype, sex?; Senegambien; Schedl Collection in NHMW, Wien.
Distribution: Africa (Senegal).
References: (**tx**) Schedl 1941d: 382, 1960g: 81.

***seriatus* (Eggers)** 1940c: 228 (*Pseudophloeotribus*). Holotype, sex?; Congostaat: Rutshuru; MRCB, Tervuren.
Distribution: Africa (Kenya/ Zaire).
Hosts: *Albizzia gummifera*, *A.* sp., *Cinchona ledgeriana*.
Notes: (1) Schedl 1957d: 9 (to *Metahylesinus*, =*Hylesinopsis*).
References: (**tx**) Eggers 1940c: 228; Schedl 1957d: 9.

cinchonae Schedl 1952j: 8 (*Hapalogenius*). Holotype, sex?; Congo Belge, Kivu: Mulunga; MRCB, Tervuren. Synonymy: Wood 1992b:(in press).
References: (**ds**) Gardner 1957a: 31. (**tx**) Eggers 1940c: 228–229; Schedl 1952j: 8, 1957d: 18, 1961k: 401; Wood, S. L. 1992b:(in press).

***squamosus* (Eggers)** 1936b: 28 (*Pseudophloeotribus*). Holotype, sex?; Abyssinia: Mulu, above Muger Valley, circa 8,000 ft.; BMNH, London.
Distribution: Africa (Ethiopia).
Notes: (1) Schedl 1957d: 9 (to *Metahylesinus*, =*Hylesinopsis*).
References: (**tx**) Eggers 1936b: 28–29; Schedl 1957d: 9, 1960g: 82.

***striatus* (Schedl)** 1957e: 865 (*Metahylesinus*). Holotype, sex?; Tanganyika, Arusha; BMNH, London.
Distribution: Africa (Tanzania).
Hosts: *Acacia* sp.
References: (**ds**) Browne 1970: 539; Gardner 1957a: 31. (**tx**) Schedl 1957e: 865, 1960g: 82.

***sulcatus* (Eggers)** 1944b: 93 (*Metahylesinus*). Holotype, sex?; Belgisch-Congo: Libenge; MRCB, Tervuren.
Distribution: Africa (Zaire).
Notes: (3) Nunberg 1969a: 396 (described female).
References: (**ds**) Beaver & Loyttyniemi 1989. (**tx**) Beaver & Loyttyniemi 1989; Eggers 1944b: 93; Nunberg 1969a: 396; Schedl 1960g: 82.

***togonus* (Eggers)** 1919: 234 (*Pseudohylesinus*). Syntypes 2 ♂, 1 ♀; Misahohe and Bismarckburg in Togo; MNB, Berlin and Eggers Collection (USNM, Washington or NHMW, Wien?).
Figures: Schedl 1960g: 76.
Distribution: Africa (French Guinea/ Ghana/ Nigeria/ Senegal/ Sudan/ Togo).

References: (**ds**) Schedl 1960g: 82, 1961d: 177, 1962h: 57, 1962k: 1063, 1965e: 350, 1965g: 19, 1966a: 275, 1968b: 144, 1971e: 1, 1972e: 279, 1975h: 350, 1975k: 276, 1977d: 277. (**tx**) Eggers 1919: 234, 1935a: 299, 1943e: 72, 1944b: 93; Schedl 1950d: 21–22, 1954e: 47, 1955d: 268, 1960g: 76, 82–83, 1962k: 1063.

***variegatus* (Eggers)** 1936b: 29 (*Pseudophloeotribus*). Holotype, sex?; Abyssinia: Jem-Jem Forest, circa 8,000 ft.; BMNH, London.
Distribution: Africa (Ethiopia).
Notes: (1) Schedl 1957d: 9 (to *Metahylesinus*, =*Hylesinopsis*).
References: (**tx**) Eggers 1936b: 29–30, 1940c: 228; Schedl 1957d: 9, 1960g: 83.

Genus *Rhopalopselion* Hagedorn

RHOPALOPSELION HAGEDORN 1909a: 740. Type-species: *Rhopalopselion bituberculatum* Hagedorn, monobasic.
Hapalogenius Hagedorn 1912c: 352. Type-species: *Hapalogenius globosus* Hagedorn, monobasic. Synonymy: Schedl 1951g: 1104.
References: (**tx**) Hagedorn 1912c: 352; Hopkins 1914: 122, 1915c: 227; Nunberg 1956: 195; Schedl 1951g: 1104, 1957d, 1957e: 865–883, 1958d: 188, 1959n: 392–403, 1965f: 6.
References: (**ay**) Nobuchi 1969a: 48. (**hb**) Wood, S. L. 1986a: 39. (**ds**) Schedl 1960g: 141, 1961k: 392; Wood, S. L. 1986a: 39. (**tx**) Hagedorn 1909a: 740, 1910a: 29, 32–33, 1910d: 6; Hopkins 1914: 129, 1915c: 227; Lucas 1920: 572; Nunberg 1956: 203; Schedl 1951g: 1104–1105, 1957d, 1958d: 188, 1959n: 114–123, 1960g: 141, 1961k: 392–403, 1965f: 3–15; Wood, S. L. 1986a: 39.

***acaciae* (Schedl)** 1957d: 18 (*Hapalogenius*). Holotype ♀; Congo Belge: Kivu, Hembe Bitale; MRCB, Tervuren.
Distribution: Africa (Zaire).
Hosts: *Acacia pennata*.
References: (**hb**) Schedl 1961k: 393. (**ds**) Schedl 1961k: 393. (**tx**) Schedl 1957d: 18, 25, 1961k: 393, 395, 1979c: 9.

***atrum* Eggers** 1935c: 295. Holotype, sex?; Congostaate. (Equateur: Flandria); MRCB, Tervuren.
Distribution: Africa (Zaire).
Hosts: *Cola diversifolia*.
References: (**hb**) Ghesquire 1933a: 30–36; Mayne & Donis 1951: 333. (**ds**) Ghesquire 1933a: 30–36, 1933b: 780; Kleine 1934a: 125; Nunberg 1961a: 328. (**tx**) Eggers 1935c: 285, 295; Nunberg 1956b: 200, 203; Schedl 1960g: 116, 1962k: 1064.

***bimaculatus* (Eggers)** 1933e: 22 (*Hapalogenius*). Holotype, sex?; Natal: (Weenen); BMNH, London.
Distribution: Africa (Natal in South Africa).
References: (**ds**) Schedl 1961k: 393. (**tx**) Eggers 1933e: 22–23; Schedl 1957c: 323, 1961k: 393.

***bituberculatum* Hagedorn** 1909a: 740. Holotype, sex?; Kamerun; MNB, Berlin.
Distribution: Africa (Cameroon).
References: (**ds**) Hagedorn 1910d: 6; Kleine 1912b: 161, 1914b: 309. (**tx**) Eggers 1935c: 296; Hagedorn 1909a: 740, 1910a: 33; Hopkins 1914: 129; Lucas 1920: 572; Nunberg 1956b: 203; Schedl 1957d: 27, 1960g: 116.

***confusum* Eggers** 1944b: 93. Holotype, sex?; Belgisch-Congo, Mayumbe; MRCB, Tervuren.
Distribution: Africa (Ghana/ Zaire).
Hosts: *Bosqueia angolensis, Baphia* sp.
References: (**cn**) Thompson, G. H. 1960. (**ds**) Schedl 1960g: 117; Thompson, G. H. 1960, 1963: 6. (**tx**) Eggers 1944b: 93; Nunberg 1956b: 200, 203; Schedl 1954e: 49, 1960g: 117.

***congonum* (Schedl)** 1950c: 206 (*Hapalogenius*). Syntypes, sex?; Congo Belge, Mulungu, Kivu; IRSNB, Brussels, and Schedl Collection in NHMW, Wien, restricted by Schedl 1979c: 63 to IRSNB specimens.
Figures: Schedl 1961k: 394.
Distribution: Africa (Zaire).
Hosts: *Albizzia grandibracteata, Berkheya spekeana, Cinchona ledgeriana, Kigelia lanceolata, Milletia hylobia, Pycnostachya coerulea, Syzyguum* cf *guineensis*.
References: (**ec**) Mayne & Donis 1951: 331; Schedl 1958d: 190–191. (**hb**) Schedl 1950c: 206, 1952j: 1, 1961k: 394–396. (**ds**) Mayne & Donis 1962: 306; Schedl 1952j: 1, 1957c: 206, 1957e: 866, 1961k: 394. (**tx**) Schedl 1950c: 206, 1961k: 394, 1979c: 63.

***conjungens* Schedl** 1965f: 5. Holotype, sex?; Kenya, Kakamege; BMNH, London.
Distribution: Africa (Kenya).
Hosts: *Craibia elliotti, Celtis zenkeri*.
References: (**tx**) Schedl 1965f: 5.

***dentatum* Nunberg** 1956b: 200. Holotype, sex?; Belgian Congo; IZW, Warsaw.
Distribution: Africa (Zaire).
References: (**tx**) Nunberg 1956b: 200.

***grande* Schedl** 1957d: 25. Holotype ♂; Congo Belge: Yangambi; MRCB, Tervuren.
Figures: Schedl 1960g: 115.
Distribution: Africa (Zaire).
Hosts: *Baphia pubescens, B. soldheidii*.
References: (**ec**) Schedl 1958d: 185, 194. (**hb**) Schedl 1958d: 185, 1960g: 117–118. (**ds**) Schedl 1960g: 117. (**tx**) Schedl 1957d: 25, 1960g: 115, 117.

***immaturus* (Schedl)** 1957e: 867 (*Hapalogenius*). Holotype, sex?; Uganda, Bodongo; BMNH, London.
Distribution: Africa (Kenya/ Tanzania/ Uganda).
Hosts: *Khaya anthotheca, Dombeya mastersi, Rauvolfia inebrians*.
References: (**ds**) Gardner 1957a: 31; Schedl

1961k: 398. (**tx**) Schedl 1957e: 867, 1961k: 398, 1979c: 121.

***immune* Eggers** 1943e: 71. Holotype, sex?; Mozambique (Haut Sangadze, Canxixe); "typen in Paris Museum"; however, it is in the Schedl Collection in NHMW, Wien (apparently taken on loan by Schedl 1979c: 122 after Eggers' death before Eggers returned it to MNHN, Paris).
Distribution: Africa (Mozambique/ Zaire).
References: (**ds**) Nunberg 1952: 19, 1965b: 19. (**tx**) Eggers 1943e: 71, 1944b: 93; Nunberg 1952: 19, 1956b: 200, 1965b: 19; Schedl 1954e: 74, 1960g: 119, 1979c: 122.

***intermedium* Schedl** 1957d: 26. Holotype ♂; Congo Belge: Yangambi; MRCB, Tervuren.
Distribution: Africa (Zaire).
Hosts: *Baphia pubescens, B. soldheidii*.
References: (**hb**) Schedl 1958d: 185, 188, 1960g: 119–120. (**ds**) Schedl 1960g: 119–120. (**tx**) Schedl 1957d: 26, 1960g: 119–120.

***lesnei* (Eggers)** 1943e: 73 (*Hapalogenius*). Syntypes, sex?; Portugiesisch Ostafrika (Zambeze), Nova Choupanga 1928; Chemba 1928; Mozambique: Haut Sagadze, Chanxixe 1928); MNHN, Paris.
Distribution: Africa (Mozambique).
References: (**ds**) Schedl 1961k: 399. (**tx**) Eggers 1943e: 73; Schedl 1957e: 866, 1961k: 399, 1979c: 138.

***lonchocarpae* (Schedl)** 1959q: 707 (*Hapalogenius*). Holotype ♀?; Kenya, Coast; BMNH, London.
Distribution: Africa (Kenya).
Hosts: *Lonchocarpus* sp. pods.
References: (**ds**) Schedl 1959q: 705, 1961k: 399. (**tx**) Schedl 1959q: 707, 1961k: 399, 1979c: 140.

***maculatum* (Schedl)** 1957d: 19 (*Hapalogenius*). Holotype ♂; Congo Belge, Kivu, Rutschuru; MRCB, Tervuren.
Distribution: Africa (Zaire).
Hosts: *Acacia sieberiana*.
References: (**hb**) Schedl 1961k: 400. (**ds**) Schedl 1961k: 400. (**tx**) Schedl 1957d: 19, 1961k: 400, 1979c: 143.

***nitidum* Schedl** 1957d: 27. Holotype ♂; Congo Belge: Yangambi; MRCB, Tervuren.
Distribution: Africa (Zaire).
Hosts: *Baphia pubescens, B. soldheidii*.
References: (**ds**) Schedl 1960g: 122. (**tx**) Schedl 1957b: 153, 1957d: 27, 1960g: 122.

***occidentalis* (Schedl)** 1967e: 225 (*Hapalogenius*). Holotype ♂; Brazzaville, Orstom Park, Congo; NHMB, Budapest.
Distribution: Africa (Zaire).
References: (**tx**) Schedl 1967e: 225, 1979c: 178.

***orientale* Schedl** 1957b: 153. Syntypes, sex?; Tanganyika, Arusha; BMNH, London, restricted by Schedl 1979c: 180 to BMNH, London specimens.
Distribution: Africa (Tanzania).
References: (**hb**) Schedl 1960g: 122. (**ds**) Gardner 1957a: 32. (**tx**) Schedl 1957b: 150, 153, 1960g: 122, 1965f: 5, 1979c: 180.

***primus* (Schedl)** 1971e: 6. (*Hapalogenius*). Holotype, sex?; Angola, Tscha-Muchito; Schedl Collection in NHMW, Wien.
Distribution: Africa (Angola).
References: (**tx**) Schedl 1971e: 6–7, 1979c: 199.

***pusillus* (Gerstacker)** 1855: 639 (*Hylesinus*). Holotype, sex?; Mozambique; MNB, Berlin.
Distribution: Africa (Mozambique).
Notes: (1) Eggers 1927a: 196 (to *Hapalogenius, =Rhopalopselion*).
References: (**ds**) Hagedorn 1910d: 17; Kleine 1912b: 171, 1914b: 321; Lacordaire 1866: 36; Schedl 1961k: 400. (**tx**) Chapuis 1869: 8, 1873: 216; Eggers 1927a: 196, 1932c: 23, 1933e: 23; Gemminger & Harold 1872: 2675; Gerstaecker 1855: 639; Hagedorn 1910a: 49; Lacordaire 1866: 363; Schedl 1941d: 382, 1961k: 400.

***rufus* (Schedl)** 1957e: 866 (*Hapalogenius*). Holotype ♀; Tanganyika, Magamba; BMNH, London.
Distribution: Africa (Tanzania).
Hosts: *Albizzia* sp.
References: (**ds**) Schedl 1961k: 401. (**tx**) Schedl 1957e: 866, 1961k: 401, 1979c: 215.

***subseriatus* (Schedl)** 1957e: 866 (*Hapalogenius*). Holotype, sex?; Uganda, Budongo; BMNH, London.
Distribution: Africa (Uganda).
Hosts: *Cynometra alexandrii*.
References: (**ds**) Schedl 1961k: 403, 1963a: 29, 1965f: 4. (**tx**) Schedl 1957e: 866, 1961k: 403, 1963a: 29, 1979c: 243.

***suturalis* (Schedl)** 1965f: 6 (*Hapalogenius*). Holotype ♀; Kenya, Kitale; BMNH, London.
Distribution: Africa (Kenya).
Hosts: *Albizzia gummifera*.
References: (**tx**) Schedl 1965f: 6, 1979c: 247.

***thompsoni* Schedl** 1954e: 74. Syntypes ♂; Koforidua, Mpraeso and Sunyani, Gold Coast; BMNH, London.
Distribution: Africa (Ghana).
Hosts: *Cola carioifolia, Baphia pubescens, Distemonanthus benthamianus*.
References: (**hb**) Browne 1963a: 229; Thompson, G. H. 1963: 6. (**ds**) Browne 1963a: 229; Schedl 1960g: 122, 1964j: 40, 1965e: 350; Thompson, G. H. 1963: 6. (**tx**) Schedl 1954e: 49, 74, 1957d: 27, 1960g: 122.

Genus *Phloeoborus* Erichson

PHLOEOBORUS ERICHSON 1836: 54. Type-species: *Phloeoborus rudis* Erichson, subsequent designation by Hopkins 1914: 126.
Phloeotrupes Erichson 1836: 53. Type-species: *Phloeotrupes grandis* Erichson, subsequent

designation by Hopkins 1914: 127. Synonymy: Wood 1977c: 383.

References: (**tx**) Blanchard 1845; Erichson 1836: 53; Hagedorn 1910a: 28, 1910d: 6; Hopkins 1914: 127; Kleine 1932: 9–11; Lacordaire 1866: 371; Lucas 1920: 504; Wood, S. L. 1977c: 383.

Keys: Blandford 1897a: 150, Eggers 1942b: 267, Wood 1982b: 122.

References: (**ay**) Nunberg 1951: 263; Schonherr 1970b. (**bv**) Barr, B. A. 1969: 642; Schonherr 1970b. (**hb**) Wood, S. L. 1982b: 121, 1986a: 39. (**ds**) Hagedorn 1910d: 5; Wood, S. L. 1982b: 121, 1986a: 39. (**tx**) Blandford 1897a: 148; Eggers 1942: 267–269; Erichson 1836: 54; Hagedorn 1910a: 27, 1910d: 5; Kleine 1932: 9–11; Lacordaire 1866: 372; Lucas 1920: 503; Nunberg 1951: 26; Schedl 1940c: 203–208; Strohmeyer 1909: 248–251; Wood, S. L. 1977c: 383, 1982b: 121–128, 1986a: 39.

***asper* Erichson** 1836: 55. Holotype ♂; Brasilien; MNB, Berlin.

Figures: Blandford 1897a: 14.

Distribution: Antilles Islands (Trinidad), North America (Chiapas, Veracruz in Mexico/ Nicaragua), South America (Brazil/ Cayenne/ Ecuador/ Guyana/ Venezuela).

References: (**hb**) Atkinson & Equihua 1986a: 419; Wood, S. L. 1982b: 123. (**ds**) Atkinson & Equihua 1986a: 419; Blackwelder 1947: 786; Blandford 1897a: 150; Chapuis 1869: 15, 1873: 223; Hagedorn 1910d: 5; Kleine 1912b: 158, 1914b: 335; Lacordaire 1866: 371; Schedl 1973d: 151, 1976a: 50; Wood, S. L. 1982b: 123. (**tx**) Blandford 1897a: 150; Chapuis 1869: 15, 1873: 223; Eggers 1933b: 2, 1942b: 267, 273, 1943d: 241, 243; Erichson 1836: 55; Gemminger & Harold 1872: 2679; Hagedorn 1910a: 28; Lacordaire 1866: 371; Strohmeyer 1909: 251; Wood, S. L. 1973c: 180, 1982b: 123.

imbricornis Eichhoff 1868b: 148. Holotype ♂; Mexico; Hamburg Museum, lost. Synonymy: Chapuis 1869: 8, Strohmeyer 1909: 251.

References: (**ds**) Blackwelder 1947; Blandford 1897a: 150, 153; Ferrer 1942; Hagedorn 1910d: 5; Kleine 1912b: 158, 1914b: 347. (**tx**) Blandford 1897a: 150, 154; Chapuis 1869: 8, 1873: 216; Eggers 1942b: 266; Eichhoff 1868b: 148; Gemminger & Harold 1872: 2679; Hagedorn 1910a: 28; Schedl 1940a: 338; Strohmeyer 1909: 251.

ovatus Chapuis 1869: 15. Lectotype ♂; Cayenne; IRSNB, Brussels, designated by Wood 1982b: 123. Synonymy: Blandford 1897a: 150, Strohmeyer 1909: 251, Wood 1973c: 180.

References: (**ds**) Blackwelder 1947; Gemminger & Harold 1872: 2679; Hagedorn 1910d: 5; Kleine 1912b: 158, 1914b: 338. (**tx**) Blandford 1897a: 150; Chapuis 1869: 15, 1873: 223; Eggers 1942b: 267, 269; Hagedorn 1910a: 28; Strohmeyer 1909: 251; Wood, S. L. 1973c: 180.

rugatus Blandford 1897a: 153. Lectotype ♀; Chontales, Nicaragua; BMNH, London, designated by Wood 1982b: 123. Synonymy: Wood 1973c: 180.

Notes: (3) Strohmeyer 1909: 249 (described male).

References: (**hb**) Swabey 1935: 6. (**ds**) Blackwelder 1947; Hagedorn 1903b: 546, 1910d: 5; Kleine 1912b: 158, 1914b: 338, 357; Swabey 1935: 6. (**tx**) Blandford 1897a: 150, 153; Eggers 1933b: 2, 1942b: 267, 269, 1943d: 241; Hagedorn 1903b: 546, 1910a: 28; Schedl 1952h: 64, 69; Strohmeyer 1909: 249, 251; Wood, S. L. 1973c: 180.

***aspericollis* Strohmeyer** 1909: 248. Holotype ♂; Llanos, Ecuador; Strohmeyer Collection.

Distribution: South America (Ecuador).

References: (**ds**) Blackwelder 1947: 786; Kleine 1912b: 158, 1914b: 343. (**tx**) Eggers 1942b: 267, 1943d: 241; Hagedorn 1910a: 28; Strohmeyer 1909: 248.

***belti* Blandford** 1897a: 151. Holotype ♀; Chontales, Nicaragua; BMNH, London.

Distribution: North America (Nicaragua).

References: (**ds**) Blackwelder 1947; Hagedorn 1910d: 5; Kleine 1912b: 158, 1914b: 357; Wood, S. L. 1982b: 12. (**tx**) Blandford 1897a: 150–151; Eggers 1942b: 267; Hagedorn 1910a: 28; Strohmeyer 1909: 251.

***bodei* Eggers** 1930a: 164. Lectotype ♂; Bolivia; USNM, Washington, designated by Anderson & Anderson 1971: 6.

Distribution: North America (El Salvador), South America (Argentina/ Bolivia/ Brazil/ Peru/ Venezuela).

Notes: Eggers 1942b: 273 (aberration named as var. *pupillatus*).

References: (**ds**) Blackwelder 1947; Schedl 1960a: 79, 1973d: 151, 1976a: 50. (**tx**) Anderson, W. H. & Anderson 1971: 6; Eggers 1930a: 164–165, 1942b: 267, 273, 1943d: 241.

***cristatus* Chapuis** 1869: 13. Holotype, sex?; Bogota [Colombia]; IRSNB, Brussels.

Distribution: South America (Colombia/ Ecuador/ Peru/ Venezuela).

References: (**ds**) Blackwelder 1947; Blandford 1897a: 150; Hagedorn 1910d: 5; Kleine 1912b: 158, 1914b: 341; Schedl 1973d: 152. (**tx**) Blandford 1897a: 150; Chapuis 1869: 13, 1873: 221; Eggers 1929e: 53, 1942: 267, 1943d: 241; Hagedorn 1910a: 28; Schedl 1952h: 68.

radulosus Blandford 1897a: 153. Syntypes, sex?; Ecuador; BMNH, London, Fry Collection (now in NHMBS, Basel), and Schaufuss Collection. Synonymy: Eggers 1929e: 53.

References: (**ds**) Blandford 1897a: 150, 153; Hagedorn 1910d: 5; Kleine 1912b: 158,

1914b: 34. (**tx**) Blandford 1897a: 150, 153; Eggers 1929e: 53, 1942b: 267; Hagedorn 1910a: 28; Schedl 1952h: 68; Strohmeyer 1909: 251.

***ellipticus* Chapuis** 1869: 15. Holotype, sex?; Bresil; IRSNB, Brussels.
Distribution: South America (Brazil).
References: (**ds**) Blackwelder 1947; Blandford 1897a: 150; Hagedorn 1910d: 5; Kleine 1912b: 158, 1914b: 335. (**tx**) Blandford 1897a: 150; Chapuis 1869: 15, 1873: 225; Eggers 1942b: 267; Gemminger & Harold 1872: 2679; Hagedorn 1910a: 28; Strohmeyer 1909: 251.

***freyi* Schedl** 1955d: 274. Holotype ♂; Rio de Janeiro, Brasilien; Frey Museum, Tutzing (now at NHMBS, Basel).
Distribution: South America (Brazil).
References: (**ds**) Schedl 1973d: 152. (**tx**) Schedl 1955d: 274.

***gaujonii* Fairmaire** 1887: 16. Holotype, sex?; Equateur; MNHN, Paris.
Distribution: South America (Ecuador).
References: (**ds**) Blackwelder 1947; Hagedorn 1910d: 5; Kleine 1912b: 158. (**tx**) Eggers 1942a: 266; Fairmaire 1887: 16; Hagedorn 1910a: 28.

***grandis* (Erichson)** 1836: 54 (*Phloeotrupes*). Syntypes, sex?; Brazil, Nova Fribourg; MNB, Berlin.
Distribution: South America (Brazil).
Notes: (1) Wood 1977c: 383 (to *Phloeoborus*).
References: (**ay**) Imhoff 1856: 227. (**ds**) Blackwelder 1947; Chapuis 1869: 11, 1873: 219; Hagedorn 1910d: 6; Kleine 1912a: 159, 1914b: 335; Lacordaire 1830: 127, 1866: 371; Sturm 1826: 156, 1843: 229. (**tx**) Chapuis 1869: 11, 1873: 219; Erichson 1836: 54; Gemminger & Harold 1872: 2678; Hagedorn 1910a: 29; Hopkins 1914: 127; Lacordaire 1866: 371; Lucas 1920: 504; Strohmeyer 1909: 250; Wood, S. L. 1977c: 383.

***granosus* Eichhoff** 1868b: 148. Holotype, sex?; Brasilia; Hamburg Museum, lost.
Distribution: South America (Brazil).
References: (**ds**) Blackwelder 1947; Hagedorn 1910d: 5; Kleine 1912b: 15. (**tx**) Eggers 1942b: 266–267; Eichhoff 1868b: 148; Gemminger & Harold 1872: 2679; Hagedorn 1910a: 2.

***granulatus* Eggers** 1943d: 243. Holotype ♂; Franz. Guyana (Maroni); Strohmeyer Collection.
Distribution: South America (Cayenne).
References: (**tx**) Eggers 1943d: 241, 243.

***grossus* Chapuis** 1869: 13. Holotype ♂?; Colombie; IRSNB, Brussels.
Distribution: South America (Colombia/ Peru).
References: (**ds**) Blackwelder 1947; Blandford 1897a: 150; Hagedorn 1910d: 5; Kleine 1912b: 158, 1914b: 341; Schedl 1960a: 77. (**tx**) Blandford 1897a: 150; Chapuis 1869: 13, 1873: 221; Eggers 1942b: 267–268; Gemminger & Harold 1872: 2679; Hagedorn 1910a: 28; Strohmeyer 1909: 250.

***guayanensis* Eggers** 1942b: 268. Holotype ♂; Franz. Guayana; Eggers Collection, in NHMW, Wien.
Distribution: South America (Cayenne).
References: (**tx**) Eggers 1942b: 267–270.

***intermedius* Eggers** 1930a: 165. Holotype ♂; Brit. Guyana; Eggers Collection, in NHMW, Wien.
Distribution: South America (Guyana).
References: (**ds**) Blackwelder 1947. (**tx**) Eggers 1930a: 165, 1942b: 267–268.

***irregularis* Eggers** 1942b: 270. Holotype ♂; Peru; BMNH, London.
Distribution: South America (Peru).
References: (**tx**) Eggers 1942b: 267–271.

***lunulatus* Eggers** 1943d: 242. Lectotype ♀; Brasil; USNM, Washington, designated by Anderson & Anderson 1971: 18.
Distribution: South America (Brazil).
References: (**tx**) Anderson, W. H. & Anderson 1971: 18; Eggers 1943d: 241–242.

***mamillatus* Chapuis** 1869: 14. Holotype ♂?; Brezil, Nova-Fribourg; IRSNB, Brussels.
Distribution: South America (Brazil).
References: (**ds**) Blackwelder 1947; Blandford 1897a: 151; Hagedorn 1910d: 5; Kleine 1912b: 158, 1914b: 33. (**tx**) Blandford 1897a: 151; Chapuis 1869: 14, 1873: 222; Eggers 1942b: 267–269; Gemminger & Harold 1872: 2679; Hagedorn 1910a: 28; Strohmeyer 1919: 251.

***procerus* (Erichson)** 1836: 54 (*Phloeotrupes*). Holotype, sex?; Brazil; MNB, Berlin.
Distribution: South America (Brazil).
Notes: (1) Wood 1977c: 383 (to *Phloeoburus*).
References: (**ds**) Blackwelder 1947; Hagedorn 1910d: 6; Kleine 1912b: 159, 1914b: 335; Lacordaire 1866: 37; Schedl 1973d: 152. (**tx**) Eggers 1933g: 17, 1942b: 266; Erichson 1836: 54; Gemminger & Harold 1872: 2678; Hagedorn 1910a: 29; Lacordaire 1866: 371; Lucas 1920: 50; Wood, S. L. 1977c: 383.

sipolisii Fairmaire 1887: 16. Holotype, sex?; Minas-Geraes, Brazil; MNHN, Paris. Synonymy: Eggers 1933g: 17, 1942b: 266.
References: (**ds**) Hagedorn 1910d: 5; Kleine 1912b: 158, 1914b: 335. (**tx**) Eggers 1931c: 17, 1933g: 17, 1942b: 266; Fairmaire 1887: 16; Hagedorn 1910a: 2.

***punctatorugosus* Chapuis** 1869: 14. Holotype ♂; Nouvelle-Grenade [Colombia]; IRSNB, Brussels.
Figures: Blandford 1897a:pl. 6, fig. 15.
Distribution: North America (Costa Rica/ Mexico/ Nicaragua), South America (Brazil/ Cayenne/ Colombia).
Hosts: *Coffea arabica, Inga* sp., *Lecythis costaricensis, Psidium guajava*.
References: (**hb**) Wood, S. L. 1982b: 124. (**ds**) Blackwelder 1947; Blandford 1897a: 151, 154; Ferrer 1942; Hagedorn 1910d: 5; Kleine 1912b:

158, 1914b: 341, 347, 357; Schedl 1960a: 77, 79, 1973d: 152; Wood, S. L. 1982b: 124. (**tx**) Blandford 1897a: 151, 154; Chapuis 1869: 14, 1873: 222; Eggers 1942b: 267, 1943d: 241; Gemminger & Harold 1872: 2679; Hagedorn 1910a: 28; Schedl 1940a: 338, 1940c: 205; Strohmeyer 1909: 251; Wood, S. L. 1977c: 208, 1982b: 124.

breviusculus Chapuis 1969: 14. Holotype ♂; Cayenne; IRSNB, Brussels. Synonymy: Wood 1977b: 209.

References: (**ds**) Blackwelder 1947; Blandford 1897a: 151; Hagedorn 1910d: 5; Kleine 1912b: 158, 1914b: 338. (**tx**) Blandford 1897a: 151; Chapuis 1869: 14, 1873: 222; Eggers 1942b; Gemminger & Harold 1872: 2679; Hagedorn 1910a: 28; Strohmeyer 1909: 251; Wood, S. L. 1977b: 209.

nitidicollis Chapuis 1869: 14. Lectotype ♀; Nova Fribourg, Rio de Janeiro [Brasil]; IRSNB, Brussels, designated by Wood 1982b: 124. Synonymy: Eggers 1942b: 267.

Notes: Strohmeyer 1909: 251 (synonymy ?), Wood 1982b: 124 (synonymy ?).

References: (**ds**) Blackwelder 1947; Blandford 1897a: 150; Hagedorn 1910d: 5; Kleine 1912b: 158, 1914b: 335, 357. (**tx**) Blandford 1897a: 150; Chapuis 1869: 14, 1873: 222; Eggers 1942b: 267; Gemminger & Harold 1872: 2679; Hagedorn 1910a: 28; Strohmeyer 1909: 251; Wood, S. L. 1982b: 124.

***punctatus* (Schedl)** 1976a: 64 (*Phloeotrupes*). Holotype ♀; Santo Leopoldina, Espirito Santa, Brasil; Schedl Collection in NHMW, Wien.

Distribution: South America (Brazil).

References: (**tx**) Schedl 1976a: 64.

***rudis* Erichson** 1836: 55. Lectotype ♀; Brazil; MNB, Berlin, designated by Wood 1982b: 127.

Figures: Blandford 1897a:pl.6, fig. 13.

Distribution: North America (Belize/ Costa Rica/ El Salvador/ Guatemala/ Nicaragua/ Panama), South America (Argentina/ Brazil/ Cayenne/ Guyana/ Peru/ Venezuela).

References: (**hb**) Wood, S. L. 1982b: 127. (**ds**) Atkinson 1989a: 59; Blackwelder 1947; Blandford 1897a: 151; Bruch 1914a; Chapuis 1869: 13, 1873: 220; Hagedorn 1903b: 546, 1910d: 5; Kleine 1912b: 158, 1914b: 335, 338, 357; Lacordaire 1866: 371; Schedl 1966f: 80, 1970e: 91, 1972g: 41, 1973d: 152, 1976a: 50, 1978c: 291; Wood, S. L. 1982b: 127. (**tx**) Blandford 1897a: 150–151; Castelnau 1840; Chapuis 1869: 13, 1873: 220; Eggers 1930: 165–166, 1942b: 267–268, 1943d: 241; Erichson 1836: 55; Gemminger & Harold 1872: 2679; Hagedorn 1903b: 546, 1910a: 28; Hopkins 1914: 126, 1915:pl. 9, fig. 10, pl. 11, fig. 10; Lacordaire 1866: 371; Lucas 1920: 503; Nunberg 1956a: 144; Strohmeyer 1909: 250; Wood, S. L. 1973c: 180, 1982b: 127.

elongatus Chapuis 1869: 13. Holotype ♂; Bresil; IRSNB, Brussels. Synonymy: Strohmeyer 1909: 250, Wood 1973c: 180.

References: (**ds**) Blackwelder 1947; Blandford 1897a: 150; Hagedorn 1903b: 546, 1910d: 5; Kleine 1912b: 158, 1914b: 335. (**tx**) Blandford 1897a: 150; Chapuis 1869: 13, 1873: 221; Eggers 1942b: 267; Gemminger & Harold 1872: 2679; Hagedorn 1903b: 546, 1910a: 28; Strohmeyer 1909: 250; Wood, S. L. 1973c: 180.

rugipennis Eggers 1942b: 271. Holotype ♀; San Salvator, Costa Rica; USNM, Washington. Synonymy: Wood 1973c: 180.

References: (**hb**) Viana 1964: 128. (**ds**) Schedl 1970e: 89, 1972g: 38, 1973d: 152; Viana 1964: 128. (**tx**) Anderson, W. H. & Anderson 1971: 28; Eggers 1942b: 267, 271; Schedl 1948d: 36, 1955d: 274, 1958f: 34; Wood, S. L. 1973c: 180.

***scaber* Erichson** 1836: 55. Lectotype ♀; Bahia, Brazil; MNB, Berlin, designated by Wood 1982b: 126.

Distribution: Antilles Islands (Jamaica/ Trinidad), North America (Belize/ Costa Rica/ Guatemala/ Veracruz in Mexico/ Nicaragua/ Panama), South America (Bolivia/ Brazil/ Cayenne/ Colombia/ Guyana/ Peru/ Venezuela).

Hosts: *Brosimum* sp., *Ficus* sp.

References: (**hb**) Atkinson & Equihua 1986a: 419; Bondar 1950: 479; Vitzthum 1926: 489; Wood, S. L. 1982b: 126. (**ds**) Atkinson & Equihua 1986a: 419; Blackwelder 1947; Blandford 1897a: 152–153; Bright 1972d: 32, 1985c: 170; Chapuis 1869: 13, 1873: 221; Ferrer 1942; Gowdey 1926: 27; Hagedorn 1910d: 5; Kleine 1912b: 158, 1914b: 335, 338, 341, 347, 357, 358; Lacordaire 1866: 371; Schedl 1960a: 75, 1966f: 78, 1972g: 38, 1973d: 152; Wood, S. L. 1982b: 126. (**tx**) Blandford 1897a: 149, 152–153; Bright 1972d: 32, 1985c: 170; Chapuis 1869: 13, 1873: 221; Eggers 1933b: 2, 1933g: 17, 1942b: 267–268, 1943d: 241; Erichson 1836: 55; Gemminger & Harold 1872: 2679; Hagedorn 1910a: 28; Lacordaire 1866: 371; Lucas 1920: 503; Nunberg 1956a: 144; Schedl 1940a: 338, 1952h: 64, 69, 1958c: 2, 1960a: 75; Strohmeyer 1909: 251; Wood, S. L. 1974d: 285, 1982b: 126. (**ms**) Lucas 1920: 503.

caelatus Blanchard 1846: 204 (*Phloeotrupes*). Syntypes, sex?; Bolivia; MNHN, Paris. Synonymy: Eggers 1933g: 17.

References: (**ds**) Hagedorn 1910d: 6; Kleine 1912b: 159, 1914b: 344. (**tx**) Blanchard 1846: 204; Eggers 1933g: 17, 1942b: 267; Gemminger & Harold 1872: 2678; Hagedorn 1910a: 29; Schedl 1952h: 64, 69.

sericeus Chapuis 1869: 13. Lectotype ♂; Cayenne; IRSNB, Brussels, designated by Wood 1982b: 126. Synonymy: Strohmeyer 1909: 251, Eggers 1942b: 267.

References: (**tx**) Chapuis 1869: 13, 1873: 221; Eggers 1942b: 267–268; Gemminger &

Harold 1872: 2679; Schedl 1940a: 338, 1952h: 64, 69; Strohmeyer 1909: 251; Wood, S. L. 1982b: 126.

opacithorax Schedl 1940c: 205. Syntypes ♀; Panzos, Guatemala; Instit. Pflanzenschutzforschung Kleinmachnow. Synonymy: Wood 1974d: 285.

Notes: (3) Schedl 1972q: 255 (described male).

References: (**tx**) Eggers 1942b: 266–267; Schedl 1940c: 205–206, 1972q: 255; Wood, S. L. 1974d: 285.

***signatus* Strohmeyer** 1909: 248. Holotype ♀; Jatahy (Brasilia); Strohmeyer Collection.

Distribution: South America (Bolivia/ Brazil/ Paraguay).

References: (**ds**) Blackwelder 1947: 786; Kleine 1912b: 158; Schedl 1972g: 41. (**tx**) Eggers 1942b: 267, 1943d: 241; Hagedorn 1910a: 28; Schedl 1951d: 16; Strohmeyer 1909: 248, 251.

similis Eggers 1942b: 272. Lectotype ♀; Brazilien: Goyaz; USNM, Washington, designated by Anderson & Anderson 1971: 30. Synonymy: Eggers 1943d: 241.

Notes: (3) Schedl 1979c: 229 (citation of holotype invalid).

References: (**tx**) Anderson, W. H. & Anderson 1971: 30; Eggers 1942b: 267, 272–273, 1943d: 241.

***sulcifrons* Eichhoff** 1868b: 148. Holotype, sex?; Brasilia; Hamburg Museum, lost.

Distribution: South America (Brazil).

References: (**ds**) Blackwelder 1947; Hagedorn 1910d: 5; Kleine 1912b: 158, 1914b: 335. (**tx**) Eggers 1942b: 266–267; Eichhoff 1868b: 148; Gemminger & Harold 1872: 2679; Hagedorn 1910a: 28.

Genus *Dactylipalpus* Chapuis

DACTYLIPALPUS CHAPUIS 1869: 12. Type-species: *Dactylipalpus transversus* Chapuis, subsequent designation by Hopkins 1914: 120.

Dactylopselaphus Gemminger & Harold 1872: 2678. Type-species: *Dactylipalpus transversus* Chapuis, automatic, unneeded replacement name for *Dactylipalpus* Chapuis 1869: 12.

References: (**tx**) Gemminger & Harold 1872: 2678.

Ethadopselaphus Blandford 1896d: 321. Type-species: *Ethadopselaphus cicatricosus* Blandford, original designation. Synonymy: Hagedorn 1910d: 5.

References: (**tx**) Blandford 1896d: 321; Hagedorn 1910d: 5; Lucas 1920: 276; Rohrl 1914: 189.

Keys: Eggers 1933c: 200.

References: (**ay**) Schonherr 1970b. (**bv**) Schonherr 1970b. (**hb**) Wood, S. L. 1986a: 39. (**ds**) Beeson 1941 (1961: 372); Browne 1961c: 66; Wood, S. L. 1986a: 39. (**tx**) Beeson 1941 (1961: 372); Blandford 1896d: 321; Chapuis 1869: 12, 1873: 220; Eggers 1933c: 200–202; Hagedorn 1908: 369–370, 1909: 162, 1910a: 25–26, 1910d: 5; Hopkins 1914: 120–121, 1915: 227; Kleine 1932: 7–11; Nunberg 1951: 262; Schedl 1959n: 368; Strohmeyer 1911: 18; Wood, S. L. 1986a: 39.

***africanus* Eggers** 1919: 229. Holotype ♂; Ostafrika: Ukami; Hamburg Museum, lost.

Distribution: Africa (Cameroon/ Tanzania).

References: (**tx**) Anderson, W. H. & Anderson 1971: 3; Eggers 1919: 229, 1922b: 164, 1933c: 201; Hagedorn 1908, 1910a: 6; Schedl 1959n: 370, 1979c: 14.

***biseriatus* Browne** 1973a: 282. Holotype ♂; Zaire: Kivu, Bitale; MRCB, Tervuren.

Distribution: Africa (Zaire).

References: (**tx**) Browne 1973a: 282.

***camerunus* Hagedorn** 1908: 371. Holotype ♂; Kamerun; MNB, Berlin.

Figures: Schedl 1959n: 372 (female).

Distribution: Africa (Cameroon/ Congo/ Ghana/ Kenya/ Togo/ Uganda/ Zaire/ Zambia).

Hosts: *Celtis soyauxii, Chrysophyllum lacourtianum, Scorodophloeus zenkeri, Trichilia* sp.

Notes: (3) Eggers 1922b: 164 (described female).

References: (**hb**) Beaver & Loyttyniemi 1985a: 64; Browne 1963a: 231. (**ds**) Beaver & Loyttyniemi 1985a: 64; Browne 1963a: 231; Gardner 1957a: 30; Hagedorn 1910d: 5; Kleine 1912b: 156, 1914b: 309; Mayne & Donis 1960: 102–103; Schedl 1964f: 617, 1966c: 222, 1967e: 209, 1971g: 190, 1982: 278; Strohmeyer 1909: 250; Thompson, G. H. 1963: 37. (**tx**) Eggers 1920: 230, 1922b: 164, 1927a: 197, 1933c: 200, 1933e: 17; Hagedorn 1908: 371, 1910a: 26; Roberts 1969: 124; Schedl 1941d: 379, 1953g: 241, 1954: 47, 1955f: 257, 1959n: 370–371, 1979c: 50; Strohmeyer 1909: 249–250.

***cicatricosus* (Blandford)** 1896d: 321 (*Ethadopselaphus*). Syntypes, sex?; Natal [South Africa]; BMNH, London.

Distribution: Africa (Angola/ Natal in South Africa/ Tanzania/ Zaire/ Zambia).

References: (**hb**) Loyttyniemi, Beaver, & Loyttyniemi 1984. (**ds**) Ferreira 1965: 1110; Hagedorn 1910d: 5; Kleine 1912b: 156, 1914b: 319; Schedl 1959p: 15. (**tx**) Blandford 1896d: 321; Eggers 1927a, 1933c: 201; Hagedorn 1910a: 26; Hopkins 1914: 121; Roberts 1969: 124; Schedl 1941d: 379, 1950d: 6, 1959n: 373, 1959p: 15; Wood, S. L. 1961b: 8.

marmoratus Strohmeyer 1914d: 73. Syntypes ♂♀; Kolassini (Deutsch-Ostafrika), and Natal; Strohmeyer Collection. Synonymy: Eggers 1927a: 197.

References: (**ds**) Kleine 1914b: 321. (**tx**) Blandford 1896d: 321; Eggers 1924: 110, 1927: 197, 1933: 201; Schedl 1950: 6; Strohmeyer 1914d: 73.

***floccosus* Hagedorn** 1912c: 351. Holotype, sex?; Nord-Kamerun; MNB, Berlin.
Distribution: Africa (Cameroon).
References: (**ds**) Kleine 1912b: 156, 1914b: 309. (**tx**) Eggers 1933c: 201–202; Hagedorn 1910a: 26, 1912c: 351; Schedl 1959n: 374.

***grouvellei* (Blandford)** 1896d: 322 (*Ethadopselaphus*). Holotype, sex?; Begoro in Ashanti [Ghana]; BMNH, London.
Figures: Mayne & Donis 1962: 304.
Distribution: Africa (Cameroon/ French Guinea/ Ghana/ South Africa/ Togo/ Uganda/ Zaire/ Zambia).
Hosts: *Bosqueia* sp., *Chrysophyllum* sp., *Drypetes* sp., *Rinorea* sp., *Strombosia scheffleri, Symphonia globulifera*.
References: (**ds**) Beaver & Loyttyniemi 1985a: 65; Hagedorn 1910d: 5; Kleine 1912b: 156, 1914b: 308; Schedl 1972e: 279. (**tx**) Blandford 1896d: 322; Eggers 1924: 110, 1927a: 197, 1933c: 201; Gardner 1957: 31; Hagedorn 1910a: 26; Mayne & Donis 1962: 304; Schedl 1941: 379, 1950d: 6, 1954e: 47, 1955d: 268, 1959n: 374; Strohmeyer 1909: 249.

similis Hagedorn 1908: 370. Holotype ♀; Buea, Kamerun; MNB, Berlin. Synonymy: Eggers 1927a: 197, Schedl 1959n: 374.
References: (**ds**) Gardner 1957a; Hagedorn 1910d: 5; Kleine 1912b: 156, 1914b: 308; Mayne & Donis 1962: 303; Schedl 1971g: 190, 1977d: 280. (**tx**) Eggers 1924: 110, 1927a: 197, 1933c: 201; Hagedorn 1908: 370, 1910a: 26; Schedl 1941d: 379, 1954e: 47, 1959n: 374; Strohmeyer 1909: 249.

***imitans* Eggers** 1922b: 164. Holotype ♀; Ebolowa in Kamerun; USNM, Washington.
Distribution: Africa (Cameroon).
References: (**tx**) Anderson, W. H. & Anderson 1971: 15; Eggers 1922b: 164, 1933c: 200, 1933e: 17; Schedl 1959n: 376.

***niger* Schedl** 1961f: 87. Holotype ♂; Luzon, Laguna, Mt. Makiling (Philippines); Schedl Collection in NHMW, Wien.
Distribution: Philippine Islands (Luzon).
References: (**ds**) Schedl 1966b: 4. (**tx**) Nobuchi 1983: 299; Schedl 1961f: 87, 1979c: 166.

unctus Wood 1961b: 8. Holotype ♀; Mt. Makiling, Laguna, Philippine Islands; BMNH, London. Synonymy: Wood 1988a: 33.
References: (**tx**) Nobuchi 1983: 299; Wood, S. L. 1961b: 8, 1988a: 33.

***orientalis* Eggers** 1933e: 16. Lectotype ♂; Uganda: Mpanga Forest, Toro; USNM, Washington, designated by Anderson & Anderson 1971: 23.
Distribution: Africa (Uganda/ Zaire/ Zambia).
References: (**hb**) Loyttyniemi, Beaver, & Loyttyniemi 1984. (**ds**) Beaver & Loyttyniemi 1985a: 65. (**tx**) Anderson, W. H. & Anderson 1971: 23; Eggers 1933c: 200, 1933e: 16; Schedl 1953g: 241, 1959n: 376.

***parricida* Eggers** 1919: 230. Holotype, sex?; Condue, belgisch Congo; Hamburg Museum, lost, Eggers cotype in NHMW, Wien.
Figures: Schedl 1959n: 369 (male)
Distribution: Africa (Gabun/ Zaire).
Hosts: *Garcinia polyantha*.
References: (**ds**) Schedl 1972e: 279. (**tx**) Eggers 1919: 230, 1933c: 201; Schedl 1959n: 377, 1962k: 1062, 1979c: 186; Wood, S. L. 1961b: 8.

***transversus* Chapuis** 1869: 12. Syntypes ♀; Malacca, Celebes; IRSNB, Brussels.
Distribution: Asia (Andaman Islands, Assam, Nicobar Islands in India/ Malaya/ Taiwan/ Thailand/ Tonkin Island and Vietnam), Australia (Queensland/ New South Wales), Indonesia (Aru, Celebes, Java, Mollucas, Sumatra, Ternate), New Guinea, Philippine Islands (Luzon/ Mindoro).
Hosts: *Anthocephalus cadamba, Ficus religiosa, Manuglieta insignis, Mesua ferrea, Myristica philippinensis*.
References: (**cn**) Yunus & Hua 1980: 228. (**hb**) Beeson 1922c: 495; Browne 1961c: 66; Kalshoven 1958b: 161; Kleine 1932a: 295. (**ds**) Beeson 1922c: 495, 1941 (1961: 287); Browne 1961c: 66, 1968c: 111, 1980c: 482; Eggers 1926a; Hagedorn 1910d: 5; Hagen 1890; Kalshoven 1932: 242; Kleine 1912b: 156, 1914b: 284, 289, 295, 1932a: 295, 1934a: 125; Mesa 1935: 93; Miwa 1931: 268; Ohno, Yoneyama, & Nakazawa 1982a: 3, 1987: 93; Ohno et al. 1988a: 91, 1989: 59; Schedl 1936g: 520, 1937f: 15, 1938g: 424, 1961c: 69, 1962b: 186, 1966b: 5, 1971c: 368, 1974c: 262, 1975a: 454; Yunus & Hua 1980: 228. (**tx**) Chapuis 1869: 12, 1873: 220; Eggers 1926a: 299, 1927b: 391, 1933: 200; Gemminger & Harold 1872: 2678; Hagedorn 1908, 1909a, 1910a: 26; Hopkins 1914: 120; Nobuchi 1983: 299; Schedl 1936g: 520, 1937f: 15–17, 1938g: 424, 1940b: 434, 1959j: 171, 1959n: 369, 1961f: 87; Strohmeyer 1909: 250, 1911b: 18; Wood, S. L. 1961b: 8.

quadratocollis Chapuis 1869: 12. Syntypes 2 ♂; Ternate; IRSNB, Brussels. Synonymy: Strohmeyer 1909: 251, Hagedorn 1910d: 5.
References: (**tx**) Chapuis 1869: 12, 1873: 220; Gemminger & Harold 1872: 2678; Hagedorn 1908, 1910d: 5; Strohmeyer 1909: 250.

Tribe Tomicini Thomson

Tomicidae (Based on the erroneous concept that *Tomicus* = *Ips*)
Notes: Through an unfortunate error in identification, Latreille associated the genus *Ips* with the name *Dermestes piniperda* Linnaeus and this error was perpetuated for more than a century. However, he clearly designated *piniperda* Linnaeus as the type-species of his genus *Tomicus*. When a family-group name is based on *Tomicus*, that name is automatically linked to the type-species of *Tomicus* even though the author of the family-group name had made an error in identification.
References: Thomson 1859: 145, 1865: 345.

Tomicides (Based on *Tomicus* = *Ips*)
References: Ferrari 1867a: 3; Lacordaire 1866: 357, 372.

Tomicini (Based on *Tomicus* = *Ips*)
References: Barbey 1901: 21; Eichhoff 1878b: 7, 71, 1881a: 34, 42, 1883a: 106; LeConte & Horn 1883: 112; Lovendal 1889b: 6.

Tomicinae (Based on *Tomicus* = *Ips*)
References: Hagedorn 1908: 375.

Tomicini (Based on *Tomicus* = *Blastophagus*)
References: Wood, S. L. 1978a: 111, 1982b: 129, 1986: 40.

Hylurgidae
References: Zimmermann 1868: 141.

Hylurgini
References: LeConte 1876: 373; LeConte & Horn 1883: 515; Murayama 1963b: 34; Nobuchi 1985: 5; Reitter 1894: 39, 1913a: 27; Yin, Huang, & Li 1984: 52.

Hylurgides
References: Nusslin 1912: 273.

Hylurgina
References: Balachowsky 1949a: 137; Nunberg 1954: 15.

Xylechinides
References: Barbey 1901: 19; Nusslin 1912: 273.

Dendroctonides
References: Nusslin 1912: 273.

Genus *Chaetoptelius* Fuchs

CHAETOPTELIUS FUCHS 1913: 43. Type-species: *Hylesinus vestitus* Mulsant & Rey, automatic.

Homarus Broun 1881: 740. Type-species: *Homarus mundulus* Broun, monobasic, preoccupied by Weber 1795.
References: (**tx**) Broun 1881: 740, 1882: 409; Hagedorn 1910d: 33.

Acrantus Broun 1882: 409. Type-species: *Homarus mundulus* Broun, automatic, replacement name for *Homarus* Broun; preoccupied by Wagler 1830. Synonymy: Wood 1980c: 90.
References: (**tx**) Broun 1882: 409; Hagedorn 1910a: 58–59, 1910d: 33; Hutton 1904: 219; Schedl 1958a: 557–560, 1959r: 41, 1963h: 262; Winkler 1932: 1634; Wood, S. L. 1962: 77, 1966b: 29, 1980c: 90.

Chaetophorus Fuchs 1912a: 46. Type-species: *Hylesinus vestitus* Mulsant & Rey, monobasic; preoccupied by Kirby & Spence 1828: 255. Synonymy: Balachowsky 1949a: 96, Wood 1980c: 90.
References: (**tx**) Balachowsky 1949a: 96; Fuchs 1912a: 46; Reitter 1913a: 43; Wood, S. L. 1980c: 90.

References: (**cn**) Hedden, R. L. 1983. (**hb**) Wood, S. L. 1986a: 42. (**ds**) Wood, S. L. 1986a: 42. (**tx**) Balachowsky 1949a: 85, 96; Browne 1970: 546; Fuchs 1913: 43; Pfeffer 1955: 92; Reitter 1913a: 43; Spessivtsev 1931: 85; Stark 1952: 176–177; Wood, S. L. 1986a: 42.

***bimaculatus* (Schedl)** 1936g: 520 (*Leperisinus*). Syntypes, sex?; Australia: Queensland, Blackall Ranges; SAM, Adelaide.
Distribution: Australia (New South Wales/Queensland).
Hosts: Liana.
References: (**ds**) Schedl 1936g: 520. (**tx**) Schedl 1936g: 520, 1938f: 34, 1958i: 214.

***impar* (Schedl)** 1975g: 216 (*Hylesinus*). Holotype, ♀; New Guinea: Papua, Porotop, Luth. Miss. Sawmill; Schedl Collection at NHMW, Wien.
Distribution: New Guinea.
Hosts: *Araucaria hunsteinii*.
References: (**tx**) Schedl 1975g: 216.

***mundulus* (Broun)** 1881: 740 (*Homarus*). Syntypes 3, sex?; New Zealand: Whangarei Harbour; BMNH, London.
Distribution: New Zealand.
References: (**ds**) Hagedorn 1910d: 33; Hutton 1904: 219; Kleine 1912b: 190. (**tx**) Broun 1881: 740, 1882: 409; Hopkins 1914: 116, 122; Lucas 1920: 71; Schedl 1959r: 41; Wood, S. L. 1962: 77, 1966b: 29. (**ms**) Lucas 1920: 71.

opacus Broun 1895: 417 (*Acrantus*). Holotype, sex?; New Zealand: Mount Te Aroha; BMNH, London. Synonymy: Wood 1966b: 29.
References: (**tx**) Broun 1895: 417; Schedl 1959r: 41; Wood, S. L. 1962: 77, 1966b: 29.

***opimus* Wood** 1985: 270 (*Acrantus*). Holotype ♂; Pak Pak on S coast Bombarai, Vogelkop, Dutch New Guinea; Wood Collection.
Distribution: New Guinea.
References: (**tx**) Wood, S. L. 1985: 270.

***tricolor* (Schedl)** 1938f: 34 (*Leperisinus*). Holotype ♂; Australia; Schedl Collection at NHMW, Wien.
Figures: Schedl 1938f: 35 (tibia).
Distribution: Australia (Queensland).
Hosts: *Baloghia lucida*.
References: (**tx**) Schedl 1938f: 34, 1948g: 25, 1958i: 214.

***versicolor* Wood** 1988a: 31. Holotype, sex?; New Zealand: Nelson; BMNH, London, automatic.

Distribution: New Zealand.

References: (**tx**) Wood, S. L. 1988a: 31.

tricolor Schedl 1958c: 560 (*Acrantus*). Holotype, sex?; New Zealand: Nelson; BMNH, London, preoccupied by Schedl 1938.

References: (**tx**) Schedl 1938f: 34, 1948g: 25, 1958c: 560.

***vestitus* (Mulsant & Rey)** 1860: 340, 1861a: 87 (*Hylesinus*). Syntypes, sex?; France: Environs d'Hyeres; MNHN, Paris.

Figures: Acatay 1969: 25–26, Balachowsky 1949a: 23, 97, 114, Grune 1979: 78, Postner 1974: 414 (adult, antenna).

Distribution: Africa (Algeria/ Canary Islands/ Morocco/ Tunisia), Asia (Punjab, Uttar Pradesh in India/ Iran/ Israel/ Syria/ Turkey), Europe (Bulgaria/ Corsica/ France/ Greece/ Hungary/ Italy/ Sardinia/ Sicily/ Spain/ Crimea in W USSR/ Yugoslavia).

Hosts: *Pistacia atlantica, P. integerrima, P. lentiscus, P. terebenthus, P. vera,* apparently rare in *Cotynus cogyria, Olea europea, Smilar aspersa.*

Notes: (3) Stark 1952: 177 (named aberration *eldaricus*, no status).

References: (**ay**) Fuchs 1912a: 46; Kaston 1936: 645; Lekander 1959b: 23; Lesne 1911a: 627; Marcu 1933a: 34; Russo 1926a: 103–260; Schedl 1931a: 75; Wichmann 1912a: 9–10. (**bv**) Balachowsky & Chararas 1964; Barr, B. A. 1969: 640; Grune 1979: 79; Wichmann 1912a: 9. (**cn**) Acatay 1969; Anagnostopoulos 1938: 497–544; Balachowsky 1963a: 1272; Berlese 1915; Constantino 1937; Davatchi 1958: 1–166; Gentry, J. W. 1965: 134; Kiriukhin 1946: 5, 8–24, 1947: 58–66; Mourikis & Vassilaina-Alexopoulou 1975: 145; Pelekassis 1962; Pelekassis et al. 1960: 45; Schimitschek 1944: 163; Schneider 1958: 65–68. (**ec**) Chararas 1956b, 1957d; Fry 1989: 15; Gautier & Russo 1925; Halperin & Holzschuh 1984: 24; Hinton 1945: 230; Jamnicky 1957b: 26; Kleine 1944: 79; Mendel 1986d: 130; Novak, P. 1952: 412; Rizk & Abdalla 1981; Rizk & Ardini 1981b, 1981c; Russo 1926a: 103–260, 1926b: 84, 1936b: 93; Schvester 1957b: 93; Teocchi 1965: 4; Thompson, W. R. 1943: 29, 53; Thompson, W. R. & Simmonds 1964: 11; Tudor 1969: 34. (**hb**) Acatay 1969; Adeli 1972: 13; Alkan 1956: 220; Balachowsky 1963a: 1272; Barbey 1901: 21, 63; Beffa 1949, 1961; Berlese 1915; Cecconi 1906; Davatchi 1958: 74; Eichhoff 1881a: 39, 144; Gautier & Russo 1925: 150–158; Gobeil 1935; Halperin & Holzschuh 1984: 24; Keller 1913: 242; Knotek 1897: 136, 148, 1898b: 324, 1907: 281; Lekander 1959a: 83, 1959b: 23; Nusslin 1898: 274; Peyerimhoff 1919: 250; Postner 1974: 414; Rizk & Abdalla 1981; Rizk & Ardini 1981a, 1981b; Russo 1925a: 286–291, 1926a: 103–260, 1939a: 4; Schimitschek 1944: 163; Schneider 1958: 65; Schvester 1957b: 93; Spessivtsev 1922b: 75; Stark 1952: 176. (**ds**) Acatay 1969; Acloque 1896; Adeli 1972: 13; Alkan 1959a: 804; Balachowsky 1963a: 1272; Barthe 1896; Beeson 1961: 285; Beffa 1949; Calwer 1884, 1893; Cecconi 1906; Davatchi 1958; Endrodi 1958b; Escalera 1919; Gentry, J. W. 1965: 134; Grune 1979: 79; Hagedorn 1910d: 18; Halperin & Holzschuh 1984: 24; Heyden, Reitter, & Weise 1883: 181, 1891: 669, 1906: 709; Kadyrov 1988: 43, 44, 1989; Kiriukhin 1946: 3–5; Kleine 1912b: 173, 1913a: 307, 1914a: 16, 1934a: 130; Knotek 1898b: 324; Kobakhidze 1957: 178; Krausse 1910: 171, 1911: 67; Lacordaire 1866: 363; Langhoffer 1915c: 156; Luigioni 1929: 992; Moragues 1889: 32; Mourikis & Vassilaina-Alexpoulou 1975: 145; Normand 1937: 268; Novak, P. 1952: 412, 1964; Nusslin 1898: 274; Pelekassis 1962; Peyerimhoff 1919: 250; Pfeffer 1936: 89; Postner 1974: 414; Ragusa 1924: 115; Reitter 1894a: 52, 1913a: 43; Russo 1936b: 93; Sainte-Claire 1914: 469; Sainte-Claire & Mequignon 1938: 443; Schaufuss 1915: 1221; Schedl 1961b: 186, 1964j, 1967c: 69, 1969g: 288, 1971d: 426, 1971f: 146, 1972n: 349, 1979i: 288; Schedl, Lindberg, & Lindberg 1959: 13; Stark 1927b: 87, 1952: 176; Stein 1868: 113; Stein & Weise 1877: 163; Tredl 1907: 8; Uyttenboogaart 1904: 143. (**tx**) Acatay 1969: 25, 26; Acloque 1896; Balachowsky 1949a: 96, 1963a: 1272; Barbey 1901: 21, 63; Beffa 1949, 1961; Eichhoff 1864b: 31, 1881a: 39, 144, 1883a: 126; Endrodi 1957a: 307, 1957b; Fauvel 1889; Fuchs 1912a: 46; Gemminger & Harold 1872: 2675; Grune 1979: 78, 79; Hagedorn 1910a: 49, 1914: 118; Lacordaire 1866: 363; Lekander 1959b: 23; Lucas 1920: 175; Luigioni 1929: 992; Mulsant & Rey 1860: 340, 1861a: 87, 1861b: 340; Postner 1974: 414; Reitter 1887b: 193, 1894a: 52, 1913a: 43; Rey 1892b: 30; Schedl 1931a: 75, 1934f: 1634; Schedl, Lindberg, & Lindberg 1959: 13; Spessivtsev 1922: 75–77; Stark 1952: 176; Weber, L. 1913: 51. (**ms**) Lekander 1959a: 83; Lucas 1920: 175; Weber, L. 1913: 51.

indigenus Wollaston 1864: 267 (*Hylesinus*). Holotype, sex?; Hierro, Canary Islands; BMNH, London. Synonymy: Schedl, Lindberg, & Lindberg 1959: 13.

References: (**cn**) Souphieff & Scherbinovskaja 1937: 25. (**ds**) Hagedorn 1910d: 17; Kleine 1912b: 171, 1914a: 20; Souphieff & Scherbinovskaja 1937: 25. (**tx**) Gemminger & Harold 1872: 2674; Hagedorn 1910a: 48; Schedl 1934f: 1634; Schedl, Lindberg, & Lindberg 1959: 13; Wollaston 1864: 267, 1865: 249.

Genus *Xylechinosomus* Schedl

XYLECHINOSOMUS SCHEDL 1963d: 209. Type-species: *Xylechinus taunayi* Eggers, original designation.

References: (**hb**) Wood, S. L. 1986a: 42. (**ds**)

Wood, S. L. 1986a: 42. (**tx**) Schedl 1963d: 209, 1966f: 75; Wood, S. L. 1986a: 42.

***brasiliensis* (Schedl)** 1951m: 95 (*Pseudohylesinus*). Syntypes, sex?; Brasilien, Santa Catarina, Nova Teutonia; Schedl Collection (2 ♀) in NHMW, Wien, and Plaumann Collection.
Figures: Pedrosa-Macedo & Schonherr 1985: 8.
Distribution: South America (Brazil).
Hosts: *Araucaria brasiliensis*.
Notes: Schedl 1979c: 45 (citation of holotype invalid).
References: (**ds**) Pedrosa-Macedo & Schonherr 1985: 8. (**tx**) Bright 1969: 35; McNamara 1977: 198; Pedrosa-Macedo & Schonherr 1985: 8; Schedl 1951m: 95, 1979c: 45.

araucariae Schedl 1963c: 210. Holotype ♂; Brasilien: Santa Catarina, Nova Teutonia; Schedl Collection at NHMW, Wien. Synonymy: Wood 1988b: 190.
References: (**tx**) Schedl 1963c: 210, 1966e: 43; Wood, S. L. 1988b: 190.

***contractus* (Chapuis)** 1869: 23 (*Hylastes*). Syntypes, sex?; Bresil, St. Paul; IRSNB, Brussels.
Figures: Pedrosa-Macedo & Schonherr 1985: 9 (as *taunayi*).
Distribution: South America (Brazil).
Hosts: *Araucaria angustifolia*.
References: (**ds**) Hagedorn 1910d: 408; Kleine 1912b: 165, 1914b: 335; Pedrosa-Macedo & Schonherr 1985: 9. (**tx**) Chapuis 1869: 23, 1873: 231; Eggers 1940h: 61; Gemminger & Harold 1872: 2669; Hagedorn 1910a: 40, 45, 1910d: 8; Pedrosa-Macedo & Schonherr 1985: 9; Schedl 1963j: 477, 1966d: 142, 1966f: 75.

taunayi Eggers 1928c: 84 (*Xylechinus*). Lectotype, sex?; Brasil, Sao Paulo (Campos do Jordao); USNM, Washington. Synonymy: Schedl 1963j: 477.
References: (**ds**) Blackwelder 1947; Schedl 1970e: 80. (**tx**) Anderson, W. H. & Anderson 1971: 33; Eggers 1928c: 84; Pedrosa-Macedo & Schonherr 1985: 9; Schedl 1937h: 164–165, 1960b: 162, 1963d: 209, 1963j: 477, 1966e: 42.

***hirsutus* Schedl** 1963d: 211. Holotype ♂; Brasilien: Santa Catarina, Nova Teutonia; Schedl Collection at NHMW, Wien.
Figures: Pedrosa-Macedo & Schonherr 1985: 10.
Distribution: South America (Brazil).
Hosts: *Araucaria brasiliensis*.
References: (**ds**) Pedrosa-Macedo & Schonherr 1985: 10. (**tx**) Pedrosa-Macedo & Schonherr 1985: 10; de Ruette 1970: 115; Schedl 1963d: 211, 1966e: 43.

***humilis* (Blanchard)** 1851: 427 (*Hylastes*). Syntypes (?), sex?; Chile; not located.
Distribution: South America (Chile).
Notes: (3) Chapuis 1869: 24 (redescribed).
References: (**ds**) Blackwelder 1947; Hagedorn 1910d: 10; Kleine 1912b: 166, 1914b: 332; Lacordaire 1866: 363; Schedl 1965g: 26, 1972d: 137. (**tx**) Blanchard 1851: 427; Bright 1972: 35; Eggers 1929e: 53; Gay 1852: 427; Gemminger & Harold 1872: 2670; Hagedorn 1910a: 45; Lacordaire 1866: 363; Porter 1932: 106; Schedl 1965g: 26, 1972d: 137.

***minimus* Schedl** 1963d: 212. Holotype ♀; Brasilien: Santa Catarina, Nova Teutonia; Schedl Collection at NHMW, Wien.
Figures: Pedrosa-Macedo & Schonherr 1985: 11.
Distribution: South America (Brazil).
Hosts: *Araucaria angustifolia*.
References: (**ds**) Pedrosa-Macedo & Schonherr 1985: 11. (**tx**) Pedrosa-Macedo & Schonherr 1985: 11; Schedl 1963d: 212, 1966d: 43.

***pilosus* Wood** 1985: 274. Holotype ♂; Curitiba, Parana, Brazil; Wood Collection.
Distribution: South America (Parana in Brazil).
Hosts: *Araucaria angustifolia*.
References: (**tx**) Wood, S. L. 1985: 274.

***sachtlebeni* Schedl** 1963d: 209. Holotype ♀; Brasilien, Santa Catarina, Nova Teutonia; Schedl Collection at NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1963d: 209.

***valdivianus* (Eggers)** 1942a: 15 (*Xylechinus*). Holotype, sex?; Chile (Valdivia); Hamburg Museum, lost.
Distribution: South America (Chile).
Hosts: *Araucaria* sp.
References: (**ds**) Schedl 1972d: 138. (**tx**) Eggers 1942a: 15; Schedl 1955e: 255, 1963d: 209, 1966d: 43, 1972d: 138.

Genus *Sinophloeus* Brethes

SINOPHLOEUS BRETHES 1922: 433. Type-species: *Sinophloeus porteri* Brethes, monobasic.
References: (**hb**) Wood, S. L. 1986a: 42. (**ds**) Wood, S. L. 1986a: 42. (**tx**) Brethes 1922: 433; Wood, S. L. 1986a: 42.

***porteri* Brethes** 1922: 434. Holotype, sex?; Province de Cautin, Chile; Brethes Collection, not located.
Figures: Brethes 1922: 434 (antenna, tarsus).
Distribution: South America (Chile).
Hosts: *Nothophagus obliqua*.
References: (**ds**) Blackwelder 1947; Schedl 1967d: 5, 1972d: 136, 1975d: 2. (**tx**) Brethes 1922: 434; Porter 1932: 106; Schedl 1951d: 16, 1966e: 43, 1972d: 136.

destructor Eggers 1942a: 15. Holotype, sex?; Chile (Chillan); Hamburg Museum, lost. Synonymy: Wood 1988a: 34.
Notes: (3) Schedl 1951d: 16 (cited in *Blastophagus*).
References: (**ds**) Schedl 1972d: 135. (**tx**) Eggers 1942a: 15; Schedl 1951d: 16, 1972d: 135; Wood, S. L. 1988a: 34.

Genus *Dendrotrupes* Broun

DENDROTRUPES BROUN 1881: 741. Type-species: *Dendrotrupes costiceps* Broun, subsequent designation by Hopkins 1914: 120.
References: (**hb**) Wood, S. L. 1986a: 42. (**ds**) Hagedorn 1910d: 34; Wood, S. L. 1986a: 42. (**tx**) Broun 1881: 741; Hagedorn 1910a: 46–47; Hopkins 1914: 120; Wood, S. L. 1966b: 20, 1967d: 77, 1986a: 42.

***costiceps* Broun** 1881: 741. Syntypes 2 ♀; Tairua, New Zealand; BMNH, London.
Distribution: New Zealand.
References: (**ds**) Hagedorn 1910d: 34; Hutton 1904: 219; Kleine 1912b: 190, 1914b: 304. (**tx**) Broun 1881: 741; Hagedorn 1910a: 47; Hopkins 1914: 120; Lucas 1920: 230; Schedl 1962i: 74; Wood, S. L. 1966b: 23. (**ms**) Lucas 1920: 230.

vestitus Broun 1881: 741. Syntypes ♂; Tairua, New Zealand; BMNH, London. Synonymy: Schedl 1962i: 74, Wood 1966b: 23.
References: (**ds**) Hagedorn 1910d: 34; Hutton 1904: 219; Kleine 1912b: 190, 1914b: 304. (**tx**) Broun 1881: 741; Hagedorn 1910a: 47; Lucas 1920: 230; Schedl 1962i: 74; Wood, S. L. 1966b: 23. (**ms**) Lucas 1920: 230.

***zealandicus* Wood** 1992b: 86. Holotype ♂; Rotorua, New Zealand; Wood Collection.
Distribution: New Zealand.
References: (**tx**) Wood, S. L. 1992b: 86.

Genus *Hylurgopinus* Swaine

HYLURGOPINUS SWAINE 1918a: 43, 74. Type-species: *Hylastes rufipes* Eichhoff, original designation.
References: (**cn**) Epstein 1969: 304–306; Martin 1936: 297–306; Matthews 1935: 5. (**hb**) Wood, S. L. 1982b: 141, 1986a: 42. (**ds**) Wood, S. L. 1982b: 141, 1986a: 42. (**tx**) Arnett 1960: 1041; Beal & Massey 1945: 58, 90; Bruck 1936a: 43; Dodge 1938: 17; Swaine 1918a: 43–44, 74; Wood, S. L. 1982b: 141, 1986a: 42.

***rufipes* (Eichhoff)** 1868c(May): 147 (*Hylastes*). Lectotype, sex?; Carolina [USA]; USNM, Washington, designated by Wood 1982b: 142.
Figures: Bevan 1987: 113, Bright 1976d: 200, 206, Copley 1981: 62, Ives & Wong 1988: 226, White 1983: 328, Whitten & Reeks 1967a: 114, 1967b: 169.
Distribution: North America (Manitoba, New Brunswick, Ontario, Quebec, Saskatchewan in Canada/ Alabama, Connecticut, Delaware, District of Columbia, Florida, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Pennsylvania, Rhode Island, Tennessee, Vermont, Virginia, West Virginia in USA).
Hosts: *Ulmus* spp.
References: (**ay**) Fortin 1948, 1949: 16–59; Kaston 1936: 613–650; Krause & Fingerhut 1983; Lyons 1982; Thomas, J. B. 1957: 3, 1967. (**bv**) Barr, B. A. 1969: 641; Borg & Norris 1969: 730–733; Davidson, A. G. et al. 1964; Dethier 1947; Gardiner 1979; Kaston & Riggs 1938: 467; Lanier 1981a, 1983b; Lyons, Baren, & Van 1984; Millar et al. 1986; O'Callahan, Gallagher, & Lanier 1980; Peacock 1974,1979; Swedenborg, Jones, & Ryker 1989; Swedenborg et al. 1988; Turnbow & Franklin 1980; Weaver, N. 1978b; Whitten & Reeks 1967a, 1967b; Wolfenbarger 1946: 62; Wollerman 1979c. (**cn**) Al-Azawi & Casida 1958; Al-Azawi & Norris 1959; Alexander 1944: 41; Alexander et al. 1939: 45–50, 57–66, 1942: 50–66, 1943: 207–315, 1944: 33–43, 1945: 33–43, 1946: 33–43; Allington 1958; Anderson, R. F. 1960: 243; Andrew et al. 19..; Andrews 1951: 12–16; Anonymous 1954a: 1, 1960q, 1961h, 1962h, 1962z, 1963j, 1963r, 1963y, 1965b, 1966f, 1966k, 1966u, 1967f, 1967k, 1967t, 1968g, 1968p, 1969e, 1970h, 1970m: 3, 1971e, 1971j, 1971v, 1972t, 1973b, 1974d, 1975k, 1976e, 1977f, 1978e, 1979d; Appleby 1976: 47; Baker, R. M. 1936: 4; Baker, W. C. 1941: 476; Balachowsky 1957; Balch & Reeks 1950: 144; Banfield 1968; Barry 1935: 46–48; Beal 1958; Beal & Massey 1945: 90–92; Becker, W. B. 1936: 50, 1937a, 1937b: 56, 1937c: 375, 1938: 63, 1939a: 63, 1939b: 112–121, 1940a: 65–66, 1941: 71, 1942: 66, 1943: 40–42, 1944: 41, 1945a: 40–42, 1945b, 1945c: 29, 1946a: 41–42, 1946b: 43, 1947: 40, 1948: 42–43, 1950, 1955b, 1964b, 1965; Becker, W. B. & Tomlinson 1938; Benton 1951: 20; Blackman 1950; Blagbrough 1952: 468–469; Boullard 1976; Bourne et al. 1937: 46–61; Boyce 1948: 299–300; Boyd 1945: 118–119, 1953: 143–144; Brasier & Gibbs 1973; Britton 1934: 257, 1935: 256, 1937: 289, 1939; Britton & Friend 1935: 398; Britton et al. 1935: 147–262; Bromley 1944: 59, 1949; Browne 1968b: 347; Buchanan 1941: 367–369; Buchholz 1949: 152–153; Calkins & Michener 1953: 18; Cannon, Barger, & Groth 1985; Carter, J. C. & Carter 1974; Ceballos & Cordoba 1945a; Clinton & McCormick 1935: 68–70, 1936; Collins 1935: 128–132, 1938: 192–195, 1941: 369–370; Collins et al. 1936: 169, 1942: 130; Comtois 1988: 173; Conners & Savila 1945; Connola et al. 1947b: 43; Copley 1981; Craighead 1941, 1942a, 1942b: 375–376; Cusumano & Wasser 1965: 230–234; Dance 1964; Daviault 1945: 280, 1946: 115, 1948: 146–147; Davidson, A. G. et al. 1958, 1964; Davidson, R. H. & Lyon 1979; Davis 1937: 238; Diamon 1949: 58–60; Dietrich 1936: 217; Doane 1958b; Doane et al. 1936; Donohoe 1944: 452; Drake et al. 1947: 111; Drooz 1985: 342; Edelman & Malysheva 1959a, 1959b; Ehrenberg 1954; Elliott, K. R. & Hildahl 1963: 83, 1964: 83, 1965: 87; Elliott, K. R. & Laut 1966: 72; Elliott, K. R., Laut, & Brandt 1967; Euale et al. 1977, 1978; Falker 1940: 129; Felt 1905: 288, 1924: 273, 1926: 247, 273, 1930a: 247,

273, 1933: 21, 1933a: 1–23, 1934a, 1935: 232, 1942: 8; Felt & Bromley 1937: 18, 1941, 1941a: 180, 1942: 169–171, 1943: 326–327; Fettes 1964, 1967; Finnegan 1957: 276, 1964: 117–124; Finnegan & Sippel 1964, 1967; Flint & Farrar 1948: 23; Forbes, Underwood, & Cuming 1965: 31; Forbes et al. 1958: 19, 1961: 28; Fortin 1947: 192–200, 1948: 79, 142–180, 1949: 142–180; Friend 1940, 1941, 1942a: 537, 1943: 281–282, 1944: 303; Fystro 1960; Gagnon 1964; Gardiner 1947: 39, 1951: 109, 1952: 18, 1976a, 1979; Gardiner & Webb 1980; Garman 1899; Gentry, G. R. et al. 1979: 778; Gold & Kiesling 1977; Griswold 1948: 1–5; Hagman 1946: 133–135; Hamel 1980: 75; Hart, J. H. & Kennedy 1981; Hastings, A. R. & O'Brien 1973: 62; Herrick 1935: 76; Hildahl & Wong 1965: 36–38; Himelick & Neely 1961a, 1961b; Hiratsuka, Cerezke, & Petty 1980: 9; Hiratsuka & Petty 1981: 75; Hiratsuka et al. 1982: 8; Hord & Quirke 1956; Howse et al. 1981: 45; Ives & Wong 1988: 227; Jacot 1934: 838, 1936: 627; Janes & Strong 1961; Janes, Strong, & Hart 1963; Johannsen 1912: 463; Johnson, W. T. & Lyon 1976: 218; Jones, T. H. 1939: 1–8, 1947: 17; Jones, T. H. & Moses 1943: 79–85; Jones, W. L. & Welch 1982; Kalandra 1948b: 142; Karnosky 1976; Kaston 1936: 610–650, 1939: 1–39; Kaston & Becker 1936: 807; Kaston & Riggs 1937: 98–108, 1938: 467–469; Keenan 1946: 10–13; Keenan et al. 1948: 57; Knull 1934: 865; Knutson 1947: 39, 1948: 55; Kondo & Moody 1987: 29; Kondo & Taylor 1985: 19; Kondo et al. 1972; Landwehr, Phillipsen, & Ascerno 1981; Landwehr et al. 1981; Lanier 1981a, 1989; Lannon 1949: 53–55; Leach 1940b: 227; Lewis 1952: 134; Liming 1948: 24; Liming et al. 1949: 7; Linder 1931: 67; Lindquist, O. H. & Syme 1981: 59; Lintner 1887: 77–125; Lyons 1956: 602; MacAloney & Ewan 1964; Magasi 1977, 1980, 1981a, 1981b: 24, 1982, 1983, 1984, 1985, 1986b: 29, 1987: 26, 1988: 44, 1989: 31; Magasi, Sterner, & Forbes 1977: 26; Magasi, Sterner, & Newell 1978: 28; Magasi et al. 1981; Maloy & Inglis 1978; Marquis 1956: 9, 112–114; Marshall 1951: 133–135; Martin 1936: 297–306, 1938a: 195–203, 1938b: 450–477, 1946: 481–486; Martineau 1984, 1985: 220; Martineau & Ouellette 1970: 41; Mathiesen 1950: 74; Matthysse 1951: 108–109, 1959: 3, 11–12; Matthysse et al. 1954: 739–746; May 1934: 11, 1938: 3, 1940: 149, 1953: 60–68; May & Collins 1938: 52–54; Mazzone & Peacock 1985; McCallum 1946: 206–208; McCallum et al. 1951: 4; McDaniel 1933: 25–26, 1935: 143; McGugan 1958: 53, 62, 1959: 1–114; McKenzie 1937: 11; McKenzie & Becker 1937: 14, 1950: 1–4, 1951: 3–4; Metcalf & Flint 1939: 720, 1951: 798; Milbrath 1949: 16–19; Moody, B. H. 1988: 28; Moody, B. H. & Cerezke 1983: 10, 1984, 1985; Morris 1951: 52–55; Nash 1952: 123 in ed. 2, 1957: 96–100; Neal 1979: 778; O'Callaghan, Gallagher, & Lanier 1980; Ouellet 1956: 87; Parker 1948: 175–182, 195; Parker et al. 1947: 9, 29–30; Parks 1936: 24–25; Patmore 1961; Peacock 1974, 1975; Pechuman 1937: 13; Peirson 1927: 58; Perumal, Purdy, & Roy 1981; Peterson, G. W. & Wysong 1965; Petty, J. 1978: 73; Petty, J. et al. 1976; Pfeffer 1979: 149; Phillipsen, Ascerno, & Landwehr 1986; Pomerleau 1945: 282, 1946: 13–16, 1947: 102–104, 1949: 54–55, 1961, 1965: 1592–1595; Potts 1949: 6; Prentice & Hildahl 1958: 62; Quattlebaum 1981; Randall 1943: 52; Rankin et al. 1941a: 549; Readio 1935: 141–152, 344; Reed 1947: 8–10, 1951: 103–104; Renlund 1971: 5, 1972: 1, 1975: 5, 1976: 5; Riley 1878: 245, 1879: 207–257; Robert 1947b: 1, 1948: 182–188, 1949: 136, 1952: 141–146, 1958: 433–436; Robert & Daviault 1949: 57; Rose, A. H. 1967; Rose, A. H. & Lindquist 1982a, 1982b: 187; Roy, Z. 1948: 235; Roy et al. 1988; Rudinsky 1960a; Schuder 1953: 69–72, 1955: 116, 1959: 62; Schwartz 1975b: 14, 1979: 204, 1980: 201, 1982: 206; Sinclair, W. A. 1978; Sippell, Dance, & Rose 1966: 54, 1967: 63; Sippell, Gross, & Rose 1969: 62; Sippell, MacDonald, & Rose 1963: 56, 1964: 61, 1965: 64; Sippell, Rose, & Larsen 1968: 60; Smith, C. C. & Forbes 1968; St. George 1949: 98; Stein, J. D. & Kennedy 1972: 120; Sterner 1976; Sterner & Davidson 1983: 20; Stewart 1947: 6, 1949: 1–2; Strobel & Lanier 1981; Strong 1936: 28, 1937: 21, 1938: 19, 1939: 24, 1940: 25; Strong, Janes, & Morofsky 1955; Sundaram 1976; Swaine 1918a: 74; Swenk 1909: 92; Swingle & Whitten 1950: 3–4, 1967; Swingle et al. 1949: 151; Syme & Nystrom 1988: 56; Takai, Kondo, & Thomas 1979; Thomas, J. B. 1972; Thompson, H. E. & Matthysse 1972; Thompson, H. E., Pardy, & Keen 1961; Thomson, M. J., Barnes, & Davis 1972: 9; Tomalak & Welch 1981; Treece & Hamilton 1957: 13, 15; Trullinger 1949: 83; Tubeuf 1935: 77; Vajda 1952: 126; Wade 1961; Walker & Leeling 1968; Walker, C. 1973c; Wallace 1941: 374–375, 1942: 537–538, 1943a: 288, 1945: 359; Wallner & Hart 1968: 1–6; Walter et al. 1943: 6; Warner 1952: 55; Watson & Raizenne 1948: 45, 1949: 50; Weaver et al. 1950: 6–10; Weber, R. 1969, 1970, 1976; Weidhaas 1965, 1967; Welch 1953: 641–644; Welch & Collins 1940: 15; Welch & Matthysse 1955: 3, 1958: 3, 6–7; Welch et al. 1934: 11; Whitten 1941: 2, 1942: 1, 1953: 2, 1954: 36, 1960, 1961, 1964, 1967; Whitten & Baker 1939: 630–634; Whitten & Reeks 1967a, 1967b; Whitten & Swingle 1958: 3; Whitten et al. 1948: 7–8, 18, 20; Willis, W. C., Kramer, & Thompson 1963, 1964, 1965; Wilson, C. L. 1961, 1962, 1963; Wilson, C. L., McDaniel, & Seymour 1961; Wilson, C. L. & Tucker 1966; Wilson, C. L., Tucker, & McDaniel 1967; Wilson, M. C., Schuder, & Provonsha 1982: 91; Wolfenbarger 1946: 62, 1959: 1–106; Wollerman 1979c; Wood, S. L. 1966b; Woodward 1948: 51–69; Wootten 1962; Worthley 1935b: 2,

1936: 177; Worthley & Liming 1935: 526–528; Wysong, D. S. 1951: 34–35, 1967; Wysong, D. S. & Peterson 1966; Wysong, D. S. & Willis 1968; Zappe 1945: 323; Zentmyer et al. 1946: 9. (**ec**) Andrew et al. 19..; Anonymous 1974d; Baker, W. C. 1941; Baker, W. L. 1972: 250; Becker, W. B. 1940a, 1940b, 1943, 1944, 1945b, 1946b; Bouchard 1975; Brasier & Gibbs 1973; Bromley 1944b; Buchanan 1941; Bushing 1965: 460; Buth & Ellis 1981; Collins 1935, 1938b; Comtois 1988: 173; Euale et al. 1977, 1978; Finnegan & Sippel 1964, 1967; Furniss, R. L. & Carolin 1977: 364; Gagnon 1964; Gardiner 1976, 1981; Gold & Kiesling 1977; Graham 1967: 115; Holmes 1980; Jacot 1936; Jones & Moses 1943; Karnosky 1976; Kaston 1937: 351, 1939: 3; Kaston & Becker 1937: 807; Lanier 1983b; Lanier, Schubert, & Manion 1988; Leach 1940b: 227; Magasi et al. 1981; Maloy & Inglis 1978; Marsh 1979: 157; Martin 1936: 297, 1946a: 486; Matthews, R. W. 1970; May 1934: 11; Metcalf & Flint 1939: 720, 1951: 798; Moody, B. H. 1982; Mook & Wolfenbarger 1943: 76; Morton 1984; Murdoch & Campana 1981; O'Callahan, Gallagher, & Lanier 1980; Parker 1948: 195, 1949: 175; Peace 1960: 5; Peacock 1975; Pfeffer 1979: 149; Pirone, Dodge, & Rickett 1960: 700; Pomerleau 1961: 361, 1965; Rankin 1941a: 549; Robert 1947b: 1; Sinclair, W. A 1978; Stakman & Harrar 1957: 245; Stark, R. W. 1982; Stillwell 1977; Strobel & Lanier 1981; Swingle & Whitten 1967; Takai, Kondo, & Thomas 1979; Thomas, J. B. 1972; Thompson, H. E. & Matthysse 1972; Thompson, H. E., Pady, & Keen 1961; Thompson, W. R. 1943: 52; Tomalak & Welch 1981; Tomalak, Welch, & Galloway 1988; Walker 1957: 320; Watson, W. Y. & Sippell 1961: 403; Webber, J. F. & Gibbs 1989; Weber, R. 1969, 1970, 1976; Westerboer 1963: 348; Whitten 1960, 1964, 1967; Whitten & Reeks 1967a, 1967b; Woodring 1966c: 133. (**hb**) Allington 1958; Anderson, R. F. 1960: 243; Baker, W. L. 1972: 250; Beal et al. 1958; Becker, W. D. 1935b: 1061–1065, 1936, 1937b, 1937c: 375, 1939b; Blackman 1950; Brasier & Gibbs 1973; Browne 1968b: 347; Buchanan 1941; Chamberlin 1939: 195–196; Clinton & McCormick 1935, 1936; Collins 1935, 1938b: 192–195; Collins et al. 1936: 171–176; Comtois 1988: 173; Davidson, A. G. et al. 1964; Davidson, R. H. & Lyon 1979: 371; Deyrup & Atkinson 1987a: 64; Dillon & Dillon 1961: 808; Doane et al. 1936; Drooz 1985: 342; Edelman & Malysheva 1959b; Eidmann 1962: 161; Felt 1926: 247, 273, 1930a: 247, 273; Furniss, R. L. & Carolin 1977: 364; Gardiner 1981; Gardiner & Roden 1977; Hanula & Berisford 1984; Hart, J. H. & Kennedy 1981; Herrick 1935: 76; Hoffmann 1941; Hopkins 1904b: 320; Ives & Wong 1988: 227; Janes & Strong 1961; Jones 1939; Kaston 1939: 3; Kaston & Riggs 1937: 98; Lanier 1983b; Lyons 1956: 602; MacAloney & Ewan 1964; Martin, C. H. 1938b: 470; Martineau 1984, 1985: 220; McDaniel 1933: 25, 1935: 143; Metcalf & Flint 1939: 720, 1951: 798; Nash 1952: 123 in ed. 2; Peirson 1927: 58; Robert 1948: 182; Rose, A. H. & Lindquist 1982a, 1982b; Stark, R. W. 1982; Stein, J. D. & Kennedy 1972: 120; Strong, Janes, & Morofsky 1955; Swain 1948: 155; Swaine 1918a: 74; Swedenborg et al. 1988; Thomas, J. B. 1972; Thompson, H. E. & Matthysse 1972; Thompson, H. E., Pady, & Keen 1961; Wallace 1940: 296; Wallace & Beard 1942: 86–87; Weber, R. 1969, 1970, 1976; White, R. G. 1983; Whitten 1953: 2, 1960, 1964, 1967; Whitten & Reeks 1967a, 1967b; Wood, S. L. 1982b: 142. (**ds**) Anderson, R. F. 1960: 243; Anonymous 1926c: 516, 1962z, 1963j, 1963r, 1963y, 1964h, 1965b, 1966f, 1966k, 1966u, 1967f, 1967k, 1967t, 1968g, 1968p, 1970h, 1972t, 1973b, 1975k, 1976e, 1977f, 1978e, 1979d; Balachowsky 1951; Beal & Massey 1945: 90–92; Beaulne 1956; Becker, W. D. 1936, 1938, 1939a, 1939b: 112, 1940a, 1941, 1942, 1943, 1944; Becker, W. D. & Tomlinson 1938: 363; Blackman 1950; Blatchley & Leng 1916: 667; Britton 1920a; Browne 1968b: 347; Buth & Ellis 1981; Chamberlin 1939: 195–196; Chapuis 1869: 23, 1873: 231; Clinton & McCormick 1936; Davidson et al. 1958; Deyrup & Atkinson 1987a: 64; Dietrich 1936: 217; Dodge 1938; Drooz 1985: 342; Felt 1926: 247, 273, 1930a: 247, 273; Furniss, R. L. & Carolin 1977: 364; Hagedorn 1910d: 11; Hamilton 1936: 159; Harrington 1884: 276; Hildahl & Wong 1965; Hoffmann 1940: 54, 1942: 12; Hord & Quirke 1956; Johnson, W. T. & Lyon 1976: 218, 219; Kaston 1938: 240; Kleine 1912b: 166, 1914b: 392, 1934a: 127; Knull 1934a: 866; Leng 1920: 338; Leonard 1928: 516; Lindquist, O. H. & Syme 1981: 59; Morgan, A. V. & Morgan 1980: 1110; Morris 1951: 52; O'Callaghan, Gallagher, & Lanier 1980; Pechuman 1937: 13; Pomerleau 1947a: 102; Reed 1951: 103; Schedl 1977d: 281; Schneider & Farrier 1969: 412; Schroeder & French 1961; Still, Tidsbury, & Melvin 1974b; Swaine 1909: 114; Syme & Nystrom 1988: 56; Turnbow & Franklin 1980; Walker, C. 1973c; Wallace 1940: 296; Watson & Sippel 1961; Whitten & Reeks 1967a, 1967b; Willis, W. C., Kramer, & Thompson 1963, 1964, 1965; Wilson, C. L., Tucker, & McDaniel 1967; Winter, T. G. 1983: 46; Wood, S. L. 1982b: 142; Wysong, D. S. & Petterson 1966; Wysong, D. S. & Willis 1968. (**tx**) Anderson, R. F. 1960: 243; Baker, W. L. 1972: 251; Beal & Massey 1945: 90–92; Benoit 1985: 135; Bevan 1987: 113; Blatchley & Leng 1916: 667; Borror & DeLong 1954; Bright 1976d: 200, 206; Bruck 1936a: 126; Chamberlin 1939: 195–196; Chapuis 1869: 23, 1873: 231; Copley 1981: 62; Davidson et al. 1964: 4; Dillon & Dillon 1961: 801, 808; Dodge 1938: 16, 32; Edwards 1959; Eichhoff 1868c: 147, 1896: 605–606, 610; Finnegan & Sippel 1964: 4; Gemminger

& Harold 1872: 2670; Hagedorn 1910a: 46; Hart & Kennedy 1981: 3; Ives & Wong 1988: 226; Jacques 1951: 350; Johnson, W. T. & Lyon 1976: 219; LeConte 1868: 170, 177, 1876: 389–390; Lindquist, O. H. & Syme 1981: 59; Martineau 1984: 205; Muesebeck 1942: 97, 1950: 133; Pardy 1974, 1977, 1983; Rabaglia & Lanier 1981; Rose, A. H. & Lindquist 1982a, 1982b: 187; Stein, J. D. & Kennedy 1972: 120; Strong, Janes, & Morofsky 1955: 5; Swaine 1909: 114, 1911: 221, 1918a: 74; Syme & Nystrom 1988: 56; Thomas, J. B. 1957: 5, 1967; Titus, Meikle, & Harrison 1985: 76; White, R. E. 1983: 328; Whitten 1960: 6; Whitten & Reeks 1967a: 114, 1967b: 169; Wood, S. L. 1979b: 134, 1982b: 142. (**ms**) Ashby 1967; Beal 1958; Block 1938b; Craighead 1942b; Ebrenberg 1954; Gardiner & Roden 1977; Liming 1948: 24; Liming et al. 1949: 7; Moody, B. H. 1982; Patmore 1961; Roy 1948: 235; Roy et al. 1988.

opaculus LeConte 1868(September): 170 (*Hylesinus*). Syntypes 2, sex?; Pennsylvania [USA]; MCZ, Cambridge. Synonymy: Eichhoff 1896: 606.

References: (**cn**) Davidson, R. H. & Lyon 1987: 401; Garman 1899: 60, 73–75; Herrick 1935: 76; Lintner 1887b: 90, 124; Packard 1890: 227; Smith, J. B. 1900: 365; Thompson, H. E., Willis, & Keen 1978; Wilson 1909: 92. (**ec**) Bejer-Petersen 1978; Felt 1906: 288; Thompson, H. E., Willis, & Keen 1978. (**hb**) Caulfield 1891; Chapman 1911; Chittenden 1890; Davidson, R. H. & Lyon 1987: 401; Felt 1906: 257, 288; Harrington 1884b; Herrick 1935: 76; Johansen 1913: 1–18; Lintner 1887b: 90, 124; Moffat 1885: 23; Packard 1890: 227; Perkins 1890: 67; Pierce 1907: 293; Riley 1879: 45; Schwarz 1888a: 113, 1889d: 176; Thompson, H. E., Willis, & Keen 1978. (**ds**) Caulfield 1891: 75; Chapman 1910; Chittenden 1870; Deyrup 1981b: 4; Hamilton 1895a: 346, 378; Harrington 1884: 218; Henshaw 1882: 269, 1885: 149; Hopkins 1893a: 142, 1893b: 213; Hubbard & Schwarz 1878a: 666; Leng 1920: 338; Schwarz 1886: 55, 1888a: 113; Smith, J. B. 1900: 365, 1910: 404; Swaine 1909: 115. (**tx**) Blandford 1898c: 5; Chapman 1910; Eichhoff 1896: 605–606, 610; Gemminger & Harold 1872: 2675; LeConte 1868: 170, 1876: 379, 380; Schwarz 1886: 55, 1889b: 149, 1889d: 176; Swaine 1909: 115, 1911a: 221; Wood, S. L. 1979b: 134.

Genus *Pseudohylesinus* Swaine

PSEUDOHYLESINUS SWAINE 1917: 11. Type-species: *Pseudohylesinus grandis* Swaine, = *Hylurgus sericeus* Mannerheim, original designation.

Keys: Blackman 1942b: 5, Bright 1969: 15, Wood 1982b: 130.

References: (**ay**) Nobuchi 1969a: 49. (**bv**) Chapman, J. A. 1957: 3–4; Chapman, J. A. & Dyer 1960: 30–33; Chapman, J. A. & Kinghorn 1958: 368. (**cn**) Anderson, R. F. 1960: 240; Furniss, M. M. 1981. (**ec**) Ashraf & Berryman 1969: 12. (**hb**) Anderson, R. F. 1960: 240; Bright 1965, 1966a, 1969: 1–46, 1976d: 66–74; Bright & Stark 1973: 35; Cornelius 1954: 51, 1955: 712; Cowlin 1955: 37–38; Furniss, M. M. 1958: 43–48; Hogan 1950: 429; Johnson 1964: 26; Johnson & Zingg 1967: 816–819; Richmond & Kinghorn 1951: 31; Wood, S. L. 1982b: 129, 1986a: 42. (**ds**) Anderson, R. F. 1960: 240; Bright 1965, 1966a, 1969: 1–46, 1976d: 66–74; Bright & Stark 1973: 35; Chamberlin 1918: 28–30; Hopping 1922: 128–134; Wood, S. L. 1982b: 129, 1986a: 42. (**tx**) Blackman 1942b: 1–32; Bright 1964a, 1965, 1967: 1422, 1969: 1–46, 1976d: 66–74; Bright & Stark 1973: 35; Bruck 1936a: 43; Chamberlin 1939: 196–204, 1958: 101–114; Eggers 1920: 234, 1922: 165; Keen 1938: 122–125; Nunberg 1959: 167; Schedl 1950: 2, 1957: 9; Swaine 1917: 11, 1918a: 74–77; Wood, S. L. 1982b: 129–141, 1986a: 42.

***dispar* Blackman** 1942b: 11. Holotype ♀; Veronia, Oregon [USA]; USNM, Washington.

Figures: Bright 1969: 43, 46, figs. 52–53.

Distribution: (See subspecies).

Notes: (1) Bright 1969: 20 (subspecies established). The subspecies intergrade in southern Oregon.

References: (**ec**) Furniss, R. L. & Carolin 1977: 371; Hertert, Miller, & Partridge 1975: 201; Kinn 1971; Mason, W. R. M. 1978. (**hb**) Bright 1976d: 68; Bright & Stark 1973: 35; Chamberlin 1958: 107–108; Furniss, R. L. & Carolin 1977: 371; Lowe & Moyer 1980; Wood, S. L. 1982b: 133. (**ds**) Blackwelder & Blackwelder 1948; Bright 1969: 20, 1976d: 68; Bright & Stark 1973: 35; Chamberlin 1958: 107–108; Furniss, R. L. & Carolin 1977: 371; Hertert, Miller, & Partridge 1975: 201; Patterson & Hatch 1945: 151; Wood, S. L. 1972a: 402, 1982b: 133. (**tx**) Blackman 1942b: 11; Bright 1969: 20, 1976d: 68; Chamberlin 1958: 107–108; Wood, S. L. 1972a: 402, 1982b: 133.

dispar dispar:

Distribution: North America (California, W Nevada, S Oregon in USA).

Hosts: *Abies amabilis, A. concolor, A. grandis, A. magnifica, Tsuga mertensiana*.

Notes: Bright 1969: 20 (subspecies).

References: (**tx**) Bright 1969: 20; Wood, S. L. 1982b: 133.

***dispar pullatus* Blackman** 1942b: 9. Holotype ♀; Mount Rainier National Park, Washington [USA]; USNM, Washington.

Distribution: North America (British Columbia in Canada/ N Oregon, Washington in USA).

Hosts: *Abies amabilis, A. grandis, A. procera*.

Notes: (1) Bright 1969: 21 (reduced to subspecies).

References: (**ec**) Mason, W. R. M. 1978; (**hb**) Chamberlin 1958: 113; Wood, S. L. 1982b: 134. (**ds**) Blackwelder & Blackwelder 1948; Bright 1976d: 69; Chamberlin 1958: 113; Patterson & Hatch 1945: 151; Wood, S. L. 1982b: 134. (**tx**) Blackman 1942b: 6, 9–11; Bright 1969: 21, 1976d: 69; Chamberlin 1958: 113; Wood, S. L. 1956c: 247, 1982b: 134.

***granulatus* (LeConte)** 1868: 175 (*Hylastes*). Holotype ♂; published as Oregon [type marked only by a coded blue disc] [USA]; MCZ, Cambridge.
Figures: Bright 1969: 43, figs. 38–39, 56–57, Furniss & Carolin 1977: 371, Thomas & Wright 1961: 4.
Distribution: North America (Alaska/ British Columbia in Canada/ California, N Idaho, W Montana, Oregon, Washington in USA).
Hosts: *Abies amabilis, A. grandis, A. lasiocarpa, A. magnifica, A. procer, Tsuga heterophylla.*
Notes: (1) Swaine 1918a: 74 (to *Pseudohylesinus*).
References: (**bv**) Daterman, Rudinsky, & Nagel 1965; Rudinsky 1966b: 356–361; Shea 1960. (**cn**) Anonymous 1960i, 1960j: 6, 1961h; Bongberg 1957; Browne 1968: 604; Burke 1906: 89; Chamberlin 1924; Cowlin 1958: 12, 15; Currie 1905: 75; Doane et al. 1936; Essig 1926: 518; Gruenfeld et al. 1954: 30–34; Hatch 1938: 193; Hopkins 1904a: 19; Keen 1938: 27, 125, 1952b: 162; Orr, P. W. 1966; Ruppel 1967: 82; Ryker & Rudinsky 1979: 206; Schuder 1969: 74; Sterner & Davidson 1981: 35; Swaine 1918a: 74–75; Thomas, G. M. & Wright 1961; Wright et al. 1956: 322, 325. (**ec**) Ashraf & Berryman 1969: 14; Bushing 1965: 465; Chamberlin 1918a; Deyrup & Gara 1978: 275; Furniss, R. L. & Carolin 1977: 371; Hertert, Miller, & Partridge 1975: 901; Keen 1938: 27, 125; Livingston, R. L. 1980; McMullen, Fiddick, & Wood 1981; Richerson, J. V. & Borden 1972a; Shea 1960; Thomas, G. M. 1957: 1; Thomas, G. M. & Wright 1961; Wright et al. 1956: 322. (**hb**) Bright 1969: 23, 1976d: 69; Bright & Stark 1973: 35; Browne 1968b: 604; Chamberlin 1939: 200, 1958: 109–110; Daterman, Rudinsky, & Nagel 1965; Doane et al. 1936; Dyer & Nijholt 1965: 3; Essig 1926: 518; Furniss, R. L. & Carolin 1977: 371; Gast et al. 1989: 352; Hopkins 1904a: 19; Keen 1938: 27, 125, 1952c: 162; McMullen, Fiddick, & Wood 1981; Pierce 1907: 392; Ryker & Rudinsky 1979: 206; Swaine 1918a: 74, 75; Thomas 1957: 1–3. (**ds**) Ashraf & Berryman 1969: 14; Blackman 1942b: 14–15; Blackwelder & Blackwelder 1948; Bongberg 1957; Bongberg & Bennett 1960: 1–10; Bright 1969: 23, 1976d: 69; Bright & Stark 1973: 35; Browne 1968b: 604; Chamberlin 1917: 326, 1918a: 1–40, 1925, 1939: 200, 1958: 109–110; Currie 1905; Essig 1926: 518; Furniss, R. L. & Carolin 1977: 371; Gast et al. 1989: 352; Hagedorn 1910d: 9; Hall & Eaton 1960; Henshaw 1882: 269, 1885: 149; Hertert, Miller, & Partridge 1975: 901; Hopping 1922; Keen 1929a: 23, 1938: 27, 125, 1952c: 162; Kleine 1912b: 166, 1914b: 389, 1934a: 129; Laursen 1979; Leng 1920: 338; Patterson & Hatch 1945: 151; Ruppel 1967: 82; Schuder 1969: 74; Shea 1960; Swaine 1909: 113; Thomas, G. M. & Wright 1961: 1–7; Wood, S. L. 1972a: 402, 1982b: 137. (**tx**) Benoit 1986: 36; Blackman 1942b: 6, 14–15; Bright 1969: 23, 1976d: 69; Bruck 1936a; Chamberlin 1939: 200, 1958: 109–110; Furniss, R. L. & Carolin 1961: 4; Gemminger & Harold 1872: 2670; Hagedorn 1910a: 45; Keen 1929a: 23; LeConte 1868: 175, 1876: 389–390; LeConte & Horn 1883: 525; Ryker & Rudinsky 1979: 206; Schedl 1951m: 95; Swaine 1909: 113, 1918a: 74–75; Thomas, G. M. & Wright 1961: 4; Wood, S. L. 1972a: 402, 1982b: 137. (**ms**) Hatch 1938: 193.

***maculosus* Blackman** 1942b: 12. Holotype ♀; Chiricahua Mountains, Arizona [USA]; USNM, Washington.
Distribution: North America (Arizona, New Mexico, Utah in USA).
Hosts: *Abies concolor*, accidental in *A. lasiocarpa*.
Notes: Larval instars 3 and 4 and pupae feed and develop in the phloem.
References: (**hb**) Wood, S. L. 1982b: 135. (**ds**) Blackwelder & Blackwelder 1948; Furniss, R. L. & Carolin 1977: 372; Wood, S. L. 1982b: 135. (**tx**) Blackman 1942b: 6, 12–13; Bright 1969: 22; Wood, S. L. 1982b: 135.

***magnus* Wood** 1956c: 247. Holotype ♀; 40 km W Ciudad Hidalgo, Michoacan, Mexico, 2900 m; SMUK, Lawrence.
Distribution: North America (Michoacan in Mexico).
Hosts: *Abies religiosa*.
References: (**hb**) Wood, S. L. 1982b: 135. (**ds**) Bright 1969: 23; Wood, S. L. 1982b: 135. (**tx**) Bright 1969: 23; Wood, S. L. 1956c: 247, 1982b: 135.

***nebulosus* (LeConte)** 1859: 285 (*Hylesinus*). Holotype ♂; Table Mountain, California [USA]; MCZ, Cambridge.
Figures: Bright 1969: 43–44, 46, figs. 34–35, 50–51, Bright & Stark 1973: 149 (adult), Kusch 1967: 10.
Distribution: W North America.
Notes: (1) Swaine 1918a: 75 (to *Pseudohylesinus*), Bright 1969: 16 (subspecies established). (3) Chamberlin 1917: 354 (*griseus* Swaine, nomen nudum).
References: (**bv**) Chapman & Kinghorn 1958: 366, 371–372; Jacobson 1972; Oester, Rudinsky, & Ryker 1981; Rudinsky 1966b: 356–361, 1966c: 218–219; Rudinsky & Daterman 1964a; Ryker & Oester 1982; Stoszek 1973b; Stoszek & Rudinsky 1967. (**cn**) Anonymous 1962; Browne 1968: 604; Chamberlin 1924; Craighead 1927: 1–12; Doane et al. 1931; Essig 1926: 518, 1958: 518; Graham 1963; Hamilton 1894: 35; Hatch 1938: 193; Hopkins 1903b: 136, 1904a: 19–20; Johnson, D. W. &

O'Neil 1986; Keen 1938: 119, 1952c: 162; Lindgren, B. 1980a: 70; Loomis, Hofacker, & Tucker 1986; Miller 1929: 994; Ruppel 1967: 82; Ryker & Rudinsky 1979: 204; Schabel 1971; Schuder 1969: 81; Smith, G. J. & Melvin 1974a; Sterner & Davidson 1981: 35; Stoszek 1973b; Stoszek & Rudinsky 1967; Swaine 1918a: 75. (**ec**) Ashraf & Berryman 1969: 14; Atkins 1966b: 982; Bedard 1933a; Burks 1973, 1979: 778; Bushing 1965: 465; Bushing & Bright 1965: 203; Chamberlin 1918a; Craighead et al. 1927; Deyrup & Gara 1978: 275; Furniss, M. M. et al. 1974: 389, 1977: 1068; Furniss, R. L. & Carolin 1977: 372; Keen 1938: 119; Kinn 1971; Marsh 1979: 150; Matthews 1970; McMullen & Atkins 1962a: 17; Miller 1929: 994; Safranyik 1974; Schmitz & Rudinsky 1968: 1–42; Smiley & Moser 1984; Stoszek 1973b. (**hb**) Bright 1969: 16, 1976d: 67; Bright & Stark 1973: 35; Browne 1968: 604; Chamberlin 1939: 198–200, 1958: 106–108; Currie 1905: 75; Doane et al. 1936; Essig 1926: 518, 1958: 518; Furniss, M. M. et al. 1977: 1068; Furniss, R. L. & Carolin 1977: 372; Graham 1963; Harris 1954: 16; Hopkins 1904a: 19–20; Keen 1938: 119, 1952c: 162; Lindgren, B. 1980a: 70; McCullen & Atkins 1959b: 419; Nijholt 1980: 203; Pierce 1907: 293; Rudinsky & Daterman 1964a; Ryker & Oester 1982; Ryker & Rudinsky 1979: 204; Stoszek 1963b; Stoszek & Rudinsky 1967; Swaine 1918a: 75; Walters & McMullen 1956: 197; Wood, S. L. 1982b: 132. (**ds**) Bedard 1938a; Blackman 1942b; Blackwelder & Blackwelder 1948; Bright 1969: 16, 1976d: 67; Bright & Stark 1973: 35; Browne 1968: 604; Chamberlin 1917: 353–354, 1918a: 1–40, 1925, 1939: 198–200, 1958: 106–107; Currie 1905; Essig 1926: 518, 1958: 518; Evans, D. 1983: 35; Furniss, M. M. 1978; Furniss, M. M. & Furniss 1972; Furniss, R. L. & Carolin 1977: 372; Gautreau & Melvin 1974: 14; Hagedorn 1910d: 12; Henshaw 1882: 269; Hopping 1922; Keen 1929a: 23, 1938: 119, 1952c: 162; Kleine 1934a: 129; Kusch 1967; Lacordaire 1866: 363; Leng 1920: 339; McComb et al. 1953: 3; Oester, Rudinsky, & Ryker 1981; Patterson & Hatch 1945: 150; Ruppel 1967: 82; Schuder 1969: 81; Smith, G. J. & Melvin 1974a; Still, Tidsbury, & Melvin 1974a: 14; Stoszek & Rudinsky 1967: 310; Susut & Melvin 1974; Wickham 1896a: 309; Wood, S. L. 1948: 29, 1951a: 127, 1972a: 402, 1982b: 132. (**tx**) Benoit 1986: 36; Blackman 1942b: 5–8; Bright 1969: 16, 1976d: 67; Bruck 1936a: 37; Chamberlin 1939: 198–200, 1958: 106–107; Evans, D. 1983: 35; Gemminger & Harold 1872: 2674; Hagedorn 1919d: 12; Hopkins 1903b: 136; Keen 1929a: 23; Kusch 1967: 10; Lacordaire 1866: 363; LeConte 1859: 285, 1868: 170, 1876: 380; Pardy 1974,1977,1983; Ryker & Rudinsky 1979: 204; Swaine 1909: 113, 1917: 13–14, 1918a: 75; Wood, S. L. 1951a: 127, 1972a: 402, 1982a: 402. (**ms**) Hatch 1938: 193; Hopkins 1903b: 136; Schabel 1971.

nebulosus nebulosus:

Distribution: North America (Alaska/ W Alberta, British Columbia in Canada/ Chihuahua in Mexico/ Arizona, California, Colorado, Idaho, Montana, New Mexico, Oregon, Utah, Washington in USA).

Hosts: *Pseudotsuga menziesii*, rare in *Tsuga heterophylla*.

Notes: (1) Bright 1969: 16 (subspecies established). (3) Blackman 1942b: 7 (redescribed).

References: (**bv**) McLean & Borden 1977: 677. (**ec**) Deyrup & Gara 1978: 275; Matthews 1970. (**hb**) Bright & Stark 1973: 35; Nijholt 1980: 203; Wood, S. L. 1982b: 132. (**ds**) Bright 1969: 16; Bright & Stark 1973: 35; Furniss, M. M. 1978; Gast et al. 1989: 385; Wood, S. L. 1982b: 132. (**tx**) Bright 1969: 16; Bright & Stark 1973: 149; Wood, S. L. 1982b: 132.

***nebulosus serratus* Bruck** 1936b: 37. Holotype ♂; West Fork of San Gabriel Canyon, Los Angeles Co., California [USA]; OSUC, Columbus.

Distribution: North America (S California in USA).

Hosts: *Pseudotsuga macrocarpa*.

Notes: (1) Bright 1969: 18 (reduced to subspecies).

References: (**hb**) Bright & Stark 1973: 35; Chamberlin 1939: 198; Wood, S. L. 1982b: 133. (**ds**) Blackman 1942b; Blackwelder & Blackwelder 1948; Bright 1968: 18; Bright & Stark 1973: 35; Chamberlin 1939: 198; Furniss, R. L. & Carolin 1977: 372; Wood, S. L. 1982b: 133. (**tx**) Blackman 1942b: 5, 8–9; Bright 1969: 18; Bruck 1936b: 37; Chamberlin 1939: 198; Wood, S. L. 1982b: 133.

***nobilis* Swaine** 1917: 12. Lectotype ♀; Santiam National Forest, Oregon [USA]; CNCI, Ottawa, designated by Bright 1967b: 679.

Figures: Bright 1969: 43, 46, figs. 42–43, 58–59.

Distribution: North America (Oregon, Washington in USA).

Hosts: *Abies amabilis*, *A. procera*, *Tsuga heterophylla*.

Notes: Blackman 1942b: 19 (redescribed).

References: (**bv**) Daterman, Rudinsky, & Nagel 1965. (**cn**) Doane et al. 1936; Keen 1938: 125, 1952c: 162; Schuder 1969: 75; Sterner & Davidson 1981: 35. (**ec**) Furniss, R. L. & Carolin 1977: 372; Keen 1938: 125; McMullen, Fiddick, & Wood 1981. (**hb**) Bright 1976d: 71; Chamberlin 1939: 202, 1958: 110–111; Daterman, Rudinsky, & Nagel 1965; Doane et al. 1936; Furniss, R. L. & Carolin 1977: 372; Keen 1938: 125, 1952c: 162; McMullen, Fiddick, & Wood 1981; Swaine 1918a: 74; Wood, S. L. 1982b: 138. (**ds**) Blackman 1942b; Blackwelder & Blackwelder 1948; Bright 1969: 27, 1976d: 71; Chamberlin 1917: 354, 1925, 1939:

202, 1958: 110–111; Furniss, R. L. & Carolin 1977: 372; Keen 1929a: 24, 1938: 125, 1952c: 162; Kleine 1934a: 129; Leng 1920: 338; Patterson & Hatch 1945: 151; Schuder 1969: 75; Swaine 1918a: 74; Wood, S. L. 1972a: 403, 1982b: 138. (**tx**) Blackman 1942b: 7, 19–20; Bright 1967b: 679, 1969: 27, 1976d: 71; Chamberlin 1939: 202, 1958: 110–111; Keen 1929a: 24; de Ruette 1970: 112; Swaine 1917: 12–13, 1918a: 74; Wood, S. L. 1972a: 403, 1982b: 138.

furnissi Blackman 1942b: 21. Holotype ♀; Mount Rainier National Park, Washington [USA]; USNM, Washington. Synonymy: Bright 1969: 27.

References: (**hb**) Chamberlin 1958: 113. (**ds**) Blackwelder & Blackwelder 1948; Chamberlin 1958: 113; Patterson & Hatch 1945: 151. (**tx**) Blackman 1942b: 21, 27; Bright 1969: 27; Chamberlin 1958: 113.

***pini* Wood** 1969c: 122. Holotype ♀; Pacific Grove, California [USA]; Wood Collection.

Figures: Bright 1969: 43, 46, figs. 48–49, 64–65 (all as *sericeus*).

Distribution: North America (W British Columbia in Canada/ W California, W Oregon, W Washington in USA).

Hosts: *Pinus contorta, P. muricata, P. radiata.*

Notes: (3) The species cited as *sericeus* prior to 1969 except for Mannerheim and those who cite his work, is actually *pini*.

References: (**bv**) Ohmart & Voight 1982: 340. (**cn**) Anonymous 1954i: 961; Doane et al. 1936; Essig 1926: 518, 1958: 518; Hopkins 1904a: 20; Keen 1952c: 155; Lindgren 1980a: 70; Swaine 1918a: 75–76. (**ec**) Bushing & Bright 1965: 203 Furniss, R. L. & Carolin 1977: 372; Ohmart & Voight 1982: 340; Schedl 1958d: 192. (**hb**) Chamberlin 1939: 203, 1958: 112–113; Currie 1905: 75; Doane et al. 1936; Essig 1926: 518, 1958: 518; Furniss, R. L. & Carolin 1977: 372; Hopkins 1904a: 20; Keen 1952c: 155; Lindgren 1980a: 70; Pierce 1907: 293; Schwarz 1894b: 254 Swaine 1918a: 75–76. (**ds**) Anonymous 1958a: 7; Blackman 1942b; Blackwelder & Blackwelder 1948; Bright 1969: 33; Bright & Stark 1973: 35; Chamberlin 1917: 354, 1925, 1939: 203–204, 1958: 112–113; Currie 1905; Essig 1926: 518, 1958: 518; Furniss, R. L. & Carolin 1977: 372; Hamilton 1894a: 35; Hopping 1922; Keen 1929a: 24, 1952c: 155; Kleine 1934a: 129; Leng 1920: 339; Ohmart & Voight 1982: 340; Schedl 1971f: 148; Wickham 1896a: 309; Wood, S. L. 1982b: 141. (**tx**) Blackman 1942b: 7, 24–26; Bright 1969: 33, 1970: 499–500; Bruck 1936a; Chamberlin 1939: 203–204; Hamilton 1894: 35; Keen 1929a: 24; Swaine 1917: 14, 1918a: 75–76; Wood, S. L. 1969c: 122, 1982b: 141.

***sericeus* (Mannerheim)** 1843: 296 (*Hylurgus*). Holotype ♀; Sitka, Alaska; MZU, Helsinki.

Figures: Bright 1969: 43, 45–46, figs. 44–45, 60–61 (all as *grandis*), 1976d: 201, 207, Swaine 1918a:pl. 21 (adult), Thomas & Wright 1961: 4.

Distribution: Asia (introduced in Japan), North America (Alaska/ British Columbia in Canada/ California, Oregon, Washington in USA).

Hosts: *Abies amabilis, A. grandis, A. procera, A. veitchii, Pseudotsuga menziesii, Tsuga heterophylla.*

Notes: (3) Most citations of this name from 1917 to 1969, except for those who cite Mannerheim or his work, refer to the species treated above as *P. pini*.

References: (**bv**) Zhong & Schowalter 1989. (**cn**) Anonymous 1958a: 7; Ryker & Rudinsky 1979: 206. (**ec**) Bushing & Bright 1965: 203; Deyrup & Gara 1978: 276; Furniss, R. L. & Carolin 1977: 372; Marsh 1979: 158; Schedl 1958d: 192. (**hb**) Bright 1976d: 73; Bright & Stark 1973: 35; Furniss, R. L. & Carolin 1977: 372; Ryker & Rudinsky 1979: 206; Wood, S. L. 1982b: 139. (**ds**) Dejean 1837; Furniss, R. L. & Carolin 1977: 372; Hagedorn 1910d: 12, 19; Henshaw 1885: 149; Kleine 1912a: 218, 1912b: 166, 1914b: 389; Melsheimer 1853: 88; Swaine 1909: 113; Wickham 1896a: 309; Wood, S. L. 1972a: 403, 1982b: 139. (**tx**) Bright 1976d: 73, 201, 207; Gemminger & Harold 1872: 2675; Hagedorn 1910a: 46; LeConte 1857: 22, 1868: 170, 1876: 370–380; Mannerheim 1843: 296, 1852: 356, 385; Ryker & Rudinsky 1979: 206; Schwarz 1892: 239; Swaine 1909: 113; Wood, S. L. 1969c: 116, 1972a: 403, 1977c: 387, 1978b: 398, 1982b: 139. (**ms**) Essig 1931: 699.

grandis Swaine 1917: 13. Lectotype ♀; Saanichton, British Columbia; CNCI, Ottawa, designated by Bright 1967b: 679. Synonymy: Wood 1969c: 116.

Notes: (3) Blackman 1942b: 22 (redescribed).

References: (**ay**) McGhehey & Nagel 1969. (**bv**) Jacobson 1975; Rudinsky 1966b: 356–361, 1966c: 218–219; Shea 1960. (**cn**) Anonymous 1960i, 1960j: 6, 1961h; Bongberg 1957; Browne 1968b: 603; Chamberlin 1924; Cowlin 1957: 27–28, 1958: 12, 15; Doane et al. 1936; Essig 1926: 517, 1958: 518; Gruenfeld et al. 1956: 30–43; Hogan 1950; Keen 1938: 126; McGhehey & Nagel 1967; Morris, E. V. 1969: 61; Orr, P. W. 1966; Rudinsky & Terriere 1959: 485–488; Ruppel 1967: 82; Schuder 1969: 74; Sterner & Davidson 1981: 35; Struble 1957: 12, 14; Swaine 1918a: 75–76; Thomas, G. M. & Wright 1961: 1–7; War & Buckhorn 1955: 13; Wright et al. 1956: 322–325. (**ec**) Ashraf & Berryman 1969: 14, 19; Chamberlin 1918a; Keen 1938: 125; Kinn 1966, 1971; McGhehey & Nagel 1967: 1572–1574, 1969: 269–279; McMullen, Fiddick, & Wood 1981; Shea 1960; Thomas, G. M. 1957: 1–3; Thomas, G. M. & Wright 1961; Wickman 1968: 218; Wright et al. 1956: 322. (**hb**) Bright 1976d: 72; Bright &

Stark 1973: 35; Browne 1968b: 603; Chamberlin 1939: 200–201, 1958: 109–110; Doane et al. 1936; Dyer & Nijholt 1965: 3; Essig 1926: 517, 1958: 518; Keen 1938: 125; McGhehey & Nagel 1969: 269–279; McMullen, Fiddick, & Wood 1981; Struble 1937d: 11; Swaine 1918a: 75, 76; Thomas, G. M. & Wright 1961. (**ds**) Allen, S. J. 1969: 13; Blackman 1942b; Blackwelder & Blackwelder 1948; Bongberg 1957; Bright 1969: 29, 1976d: 72; Browne 1968: 603; Chamberlin 1918a1–4, 1925, 1939: 200–201, 1958: 109–110; Essig 1926: 517, 1958: 518; Evans, D. 1983: 35; Hopping 1922; Keen 1929a: 23, 1938: 125; Kleine 1934a: 129; Leng 1920: 339; McComb et al. 1953: 3; McGhehey & Nagel 1969: 269–279; Patterson & Hatch 1945: 151; Ruppel 1967: 82; Schuder 1969: 74; Shea 1960; Thomas, G. M. & Wright 1961; Wood, S. L. 1972a: 403. (**tx**) Blackman 1942b: 22–23; Bright 1967: 679, 1969b: 29, 1969c: 116, 1976b: 679, 1976d: 72, 201, 207; Chamberlin 1939: 200–201, 1958; Evans, D. 1983: 35; Hoebeke 1978; Keen 1929a: 23; Nunberg 1959c: 167; de Ruette 1970: 112; Swaine 1917: 13–14, 1918a: 75–76; Thomas, G. M. & Wright 1961; Wood, S. L. 1970: 112.

yasamatsui Nobuchi 1971b: 160. Holotype ♂; Takanishi, Nagano, Japan; Nobuchi Collection, Ibaraki. Synonymy: Wood 1977c: 387.
References: (**tx**) McNamara 1977: 198; Nobuchi 1971b: 160; Wood, S. L. 1977c: 387, 1978b: 398.

***sitchensis* Swaine** 1917: 12. Holotype ♂; Menzies Bay, Vancouver Island, British Columbia [Canada]; CNCI, Ottawa.
Figures: Bright 1969: 43, 46, figs. 46–47, 62–63, Furniss & Carolin 1977: 374.
Distribution: North America (Alaska/ British Columbia in Canada/ California, Oregon, Washington in USA).
Hosts: *Picea sitchensis*.
Notes: (3) Blackman 1942b: 24 (redescribed).
References: (**cn**) Doane et al. 1936; Dominik 1966a; Hatch 1938: 193; Keen 1938: 128, 1952c: 155; Schuder 1969: 78; Swaine 1918a: 75, 76. (**ec**) Deyrup & Gara 1978: 276; Furniss, R. L. & Carolin 1977: 372; Keen 1938: 128; Mason, W. R. M. 1978; Schedl 1958d: 187. (**hb**) Bright 1976d: 72; Bright & Stark 1973: 35; Chamberlin 1939: 202–203, 1958: 111–112; Doane et al. 1936; Furniss, R. L. & Carolin 1977: 372; Keen 1938: 128, 1952c: 165; Swaine 1918a: 75–76; Wood, S. L. 1982b: 140. (**ds**) Blackman 1942b: 23–24; Blackwelder & Blackwelder 1948; Bright 1969: 31, 1976d: 72; Bright & Stark 1973: 35; Chamberlin 1925, 1939: 202–203, 1958: 111; Furniss, R. L. & Carolin 1977: 372; Hopping 1922; Keen 1929a: 24, 1938: 128, 1952c: 165; Kleine 1934a: 129; Leng 1920: 339; Patterson & Hatch 1945: 151; Schuder 1969: 78; Wood, S. L. 1972a: 403, 1982b: 140. (**tx**) Blackman 1942b: 7, 23–24; Bright 1967b: 679, 1969: 31, 1976d: 72; Chamberlin 1939: 202–203, 1958: 111–112; Furniss, R. L. & Carolin 1977: 374; Keen 1929a: 24; de Ruette 1970: 112; Swaine 1917: 12, 1918a: 75–76; Wood, S. L. 1972a: 403, 1982b: 140. (**ms**) Hatch 1938: 193.

***tsugae* Swaine** 1917: 11. Holotype ♀; Stanley Park, Vancouver, British Columbia; CNCI, Ottawa.
Figures: Bright 1969: 43, figs. 41–42, 56–57.
Distribution: North America (SE Alaska/ British Columbia in Canada/ California, Oregon, Washington in USA).
Hosts: *Tsuga heterophylla, T. mertensiana,* rarely *Abies procera*.
Notes: (3) Blackman 1942b: 16 (redescribed).
References: (**ay**) McGhehey & Nagel 1969. (**bv**) Daterman, Rudinsky, & Nagel 1965; McLean & Borden 1977: 677. (**cn**) Brown, R. W. & Winter 1981; Browne 1968b: 604; Doane et al. 1936; Hatch 1938: 193; Holsten, Werner, & Laurent 1980; Hopkins 1901: 251, 1904a: 20; Keen 1952c: 167; McGhehey & Nagel 1967; Richmond & Kinghorn 1951: 31; Ruppel 1968: 82; Ryker & Rudinsky 1979: 207; Swaine 1918a: 74–75. (**ec**) Deyrup & Gara 1978: 276; Furniss, R. L. & Carolin 1977: 374; McGhehey & Nagel 1969. (**hb**) Bright 1976d: 70; Bright & Stark 1973: 35; Browne 1968b: 604; Chamberlin 1939: 201, 1958: 110; Daterman, Rudinsky, & Nagel 1965; Doane et al. 1936; Furniss, R. L. & Carolin 1977: 374; Holsten, Werner, & Laurent 1980; Hopkins 1901e: 67, 1904a: 20; Keen 1952c: 167; McGhehey & Nagel 1967: 1572–1574, 1969: 269–279; McLean & Borden 1977: 684; Ryker & Rudinsky 1979: 207; Swaine 1918a: 74–75; Wood, S. L. 1982b: 138. (**ds**) Blackwelder & Blackwelder 1948; Bright 1969: 25, 1976d: 70; Bright & Stark 1973: 35; Brown, R. M. & Winter 1981; Chamberlin 1925, 1939: 201, 1958: 110; Evans, D. 1983: 35; Furniss, R. L. & Carolin 1977: 374; Hopping 1922; Keen 1929a: 24, 1938: 129, 1952c: 167; Kleine 1934a: 129; Leng 1920: 339; McGhehey & Nagel 1969; Patterson & Hatch 1945: 151; Ruppel 1967: 82; Swaine 1919b: 9; Winter, T. G. 1983: 23; Wood, S. L. 1972a: 402, 1982b: 138. (**tx**) Blackman 1942b: 16–17; Bright 1967b: 679, 1969: 25, 1976d: 70; Chamberlin 1939: 201, 1958: 110; Evans, D. 1983: 35; Hoebeke 1978; Keen 1929a: 24; de Ruette 1970: 112; Rudinsky 1979: 207; Ryker & Rudinsky 1979: 207; Schedl 1951m: 95; Swaine 1917: 11, 1918a: 74–76, 1919b: 9; Wood, S. L. 1972a: 402, 1982b: 138. (**ms**) Hatch 1938: 193.

obesus Swaine 1917: 15. Holotype ♀; Inverness, British Columbia; CNCI, Ottawa. Synonymy: Bright 1969: 25.
Notes: (3) Blackman 1942b: 17 (description quoted).
References: (**cn**) Swaine 1918a: 74, 76. (**hb**)

Chamberlin 1939: 203, 1958: 112; Swaine 1918a: 74, 76. (**ds**) Blackman 1942b; Blackwelder & Blackwelder 1948; Chamberlin 1939: 203, 1958: 112; Keen 1929a: 24; Leng 1920: 339. (**tx**) Blackman 1942b: 6, 17; Bright 1967b: 679, 1969: 25; Bruck 1936a; Chamberlin 1939: 203, 1958: 112; Keen 1929a: 24; de Ruette 1970: 112; Swaine 1917: 15, 1918a: 74, 76.

keeni Blackman 1942b: 17. Holotype ♀; Cannon Beach, Oregon [USA]; USNM, Washington. Synonymy: Bright 1969: 25.
References: (**hb**) Chamberlin 1958: 114. (**ds**) Blackwelder & Blackwelder 1948; Chamberlin 1958: 114. (**tx**) Blackman 1942b: 17–18; Bright 1969: 25; Chamberlin 1958: 114.

similis Blackman 1942b: 18. Holotype ♀; Paradise Valley, Washington [USA]; USNM, Washington. Synonymy: Bright 1969: 25.
References: (**hb**) Chamberlin 1958: 113. (**ds**) Blackwelder & Blackwelder 1948; Chamberlin 1958: 113; Patterson & Hatch 1945: 151. (**tx**) Blackman 1942b: 18; Bright 1969: 25; Chamberlin 1958: 113.

***variegatus* (Blandford)** 1897a: 145 (*Hylastes*). Holotype ♀; erroneously given as Volcan de Chiriqui, Panama; probably from S Mexico or Guatemala (Wood 1982b: 136); BMNH, London.
Figures: Atkinson et al. 1986: 18.
Distribution: North America (Distrito Federal, Hidalgo, Mexico, Michoacan, Morelos, Nuevo Leon, Oaxaca, Tlaxcala in Mexico).
Hosts: *Abies religiosa*.
Notes: (3) Potential hosts do not occur south of Guatemala; consequently, the published type locality is erroneous. Larval instars 3 and 4 and pupae are xylophagous and occur 1–2 cm below the surface of the wood.
References: (**hb**) Atkinson et al. 1986: 17; Burgos & Saucedo 1983: 54; Wood, S. L. 1982b: 136. (**ds**) Atkinson & Equihua 1985a: 72, 1985b: 229; Atkinson et al. 1986: 17; Bright 1969: 22, 1972b: 1496; Burgos & Saucedo 1983: 54; Hagedorn 1910d: 12; Kleine 1912b: 166, 1914b: 349; Wood, S. L. 1982b: 136. (**tx**) Atkinson et al. 1986: 18; Blackman 1942: 7; Blandford 1897a: 145; Bright 1969: 22; Hagedorn 1910a: 46; Muskus, A. 1984: 47; Wood, S. L. 1982b: 136.

mexicanus Blackman 1942b: 13. Holotype ♀; Distrito Federal, Mexico; USNM, Washington. Synonymy: Bright 1969: 22.
References: (**ds**) Blackwelder 1947; Ferrer 1942; Holroyd & Barrett 1966: 112. (**tx**) Blackman 1942b: 13–14; Bright 1969: 22; Schedl 1940a: 338.

Genus *Pseudoxylechinus* Wood & Huang

PSEUDOXYLECHINUS WOOD & HUANG 1986: 465. Type-species: *Pseudoxylechinus uniformis* Wood & Huang, original designation.
References: (**hb**) Wood, S. L. 1986a: 42. (**ds**) Wood, S. L. 1986a: 42. (**tx**) Wood, S. L. 1986a: 42; Wood, S. L. & Huang 1986: 465.

***indicus* Wood** 1986b: 468. Holotype ♂; Rangirum, Darjeeling, Bengal, India; FRI, Dehra Dun.
Distribution: Asia (Bengal in India).
Hosts: *Quercus lamellosa*.
References: (**tx**) Wood, S. L. 1986b: 468.

***rugatus* Wood & Huang** 1986: 467. Holotype ♂; Xishuangbanna, Yunnan, China; IZAS, Beijing.
Distribution: Asia (Yunnan in China).
Hosts: *Cassia* sp.
References: (**tx**) Wood, S. L. & Huang 1986: 467.

***sinensis* Wood & Huang** 1986: 467. Holotype ♀; Lijiang, Yunnan, China; IZAS, Beijing.
Distribution: Asia (Yunnan in China).
References: (**tx**) Wood, S. L. & Huang 1986: 467.

***tibetensis* Wood & Huang** 1986: 466. Holotype ♀; Zayu, Xizang [Tibet]; IZAS, Beijing.
Distribution: Asia (Xizang [Tibet] in China).
References: (**tx**) Wood, S. L. & Huang 1986: 466.

***tiliae* (Niisima)** 1909: 2 (*Kissophagus*). Syntypes, sex?; Sapporo, Japan; Nobuchi Collection, Ibaraki.
Distribution: Asia (Japan).
Hosts: *Tilia cordata* var. *japonica*.
Notes: (1) Wood & Huang 1986: 465 (to *Pseudoxylechinus*).
References: (**ds**) Nobuchi 1985b: 7. (**tx**) Murayama 1957c: 931, 1958: 932; Niisima 1909: 2, 1910a: 2; Schedl 1934f: 1635, 1954b: 198; Wood, S. L. & Huang 1986: 465.

***uniformis* Wood & Huang** 1986: 465. Holotype ♂; Nanjiang, Sichuan, China; IZAS, Beijing.
Distribution: Asia (Sichuan in China).
References: (**tx**) Wood, S. L. & Huang 1986: 465.

***variegatus* Wood & Huang** 1986: 466. Holotype ♂; Jiangxian, Shanxi, China; IZAS, Beijing.
Distribution: Asia (Shanxi in China).
Hosts: *Elaeagnus* sp.
References: (**tx**) Wood, S. L. & Huang 1986: 466.

Genus *Xylechinus* Chapuis

XYLECHINUS CHAPUIS 1869: 36. Type-species: *Hylesinus* (*Dendroctonus*) *pilosus* Ratzeburg, mononbasic.

Pruniphagus Murayama 1958: 930. Type-species: *Pruniphagus gummensis* Murayama, original designation. Synonymy: Wood 1986a: 42.
References: (**tx**) Murayama 1958: 930; Wood, S. L. 1986a: 42.

Squamasinus Nunberg 1964b: 431. Type-species: *Squamasinus chiliensis* Nunberg, original designation. Synonymy: Wood 1980c: 96.
References: (**tx**) Nunberg 1964b: 431; Wood, S. L. 1980c: 96.

Xylechinops Browne 1973a: 283. Type-species:

Xylechinus australis Schedl, original designation. Synonymy: Wood 1986a: 42.
References: (**tx**) Browne 1973a: 283; Wood, S. L. 1986a: 42.
Keys: Blandford 1987a: 157, Wood 1982b: 143 for North America.
References: (**ay**) Fuchs 1912: 1–51; Nobuchi 1969a: 52; Nusslin 1911, 1912; Schonherr 1970b. (**bv**) Barr, B. A. 1969: 643. (**cn**) Escherich 1923: 468–479. (**hb**) Bright & Stark 1973: 34; Eichelbaum 1903: 60–70; Wichmann 1927: 358, 364; Wood, S. L. 1982b: 143, 1986a: 42. (**ds**) Bright & Stark 1973: 34; Hagedorn 1910d: 25; Schedl 1981b: 61; Scheerpeltz & Winkler 1930: 256; Wood, S. L. 1982b: 143, 1986a: 42. (**tx**) Arnett 1960: 1041; Balachowsky 1949a: 98; Blackman 1940a: 123; Blandford 1897a: 143, 157; Bright 1978: 65; Bruck 1936a: 42; Chamberlin 1939: 104, 116, 183, 1958: 94; Chapuis 1869: 36, 1873: 244; Eggers 1939c: 114–123, 1942a: 13–15; Eichhoff 1881a: 121; Hagedorn 1909: 737, 1910a: 35, 63–64; Hopkins 1914: 131, 1915c: 226; Krivolutskaya 1958: 106, 113; Kurenzov 1941: 114–116; Milani 1898: 122; Pfeffer 1981b: 61; Reitter 1894: 54–55, 1906: 709, 1913a: 40, 44; Saalas 1914: 304–306; Schedl 1937: 31, 1957d: 1–162, 1959n: 421, 1981b: 61; Schimitschek 1937: 44–47; Seidlitz 1891: 151, 560, 605; Wood, S. L. 1961: 43, 1982b: 143, 1986a: 42; Yin, Huang, & Li 1984: 63.

***africanus* Browne** 1973a: 285. Holotype, sex?; Cameroun: Maroua; MRCB, Tervuren.
Figures: Browne 1973a: 284.
Distribution: Africa (Cameroons).
Notes: (3) This species is probably a *Hylesinopsis* (not seen).
References: (**tx**) Browne 1973a: 284–285.

***americanus* Blackman** 1922c: 117. Holotype ♂; Orono, Maine [USA]; USNM, Washington.
Figures: Blackman 1922c:figs. 15–16 (adult).
Distribution: North America (Ontario, Quebec in Canada/ Maine, New York in USA).
Hosts: *Picea glauca, P. rubens*.
References: (**ay**) Chararas 1956c. (**cn**) Blackman 1950; Hopkins 1904a: 26. (**hb**) Blackman 1950; Bright 1976d: 65; Chamberlin 1939: 184; Chararas 1956c; Hopkins 1904a: 26; Wood, S. L. 1982b: 146. (**ds**) Anonymous 1926c: 515; Blackman 1950; Bright 1976d: 65; Chamberlin 1925, 1939: 184; Currie 1905; Leng & Mutchler 1927: 52; Leonard 1928: 515; Wood, S. L. 1982b: 146. (**tx**) Blackman 1922c: 117–119, 1940a: 123–124; Bright 1976d: 65; Chamberlin 1939: 184; Chararas 1956c: 1; Wood, S. L. 1982b: 146.

***arisanus* Eggers** 1939c: 114. Holotype, sex?; Formosa (Mt. Arisan); M. Chujo Collection at Taihoku Universitat, Taiwan.
Distribution: Asia (Taiwan).
References: (**ds**) Nobuchi 1967: 19. (**tx**) Eggers 1939c: 114–115.

***australis* Schedl** 1957d: 31. Holotype, sex?; Afrique du Sud: Colonie du Cap, Steynsburg; MNHN, Paris.
Figures: Browne 1973a: 284, Schedl 1959n: 422 (adult, antenna).
Distribution: Africa (Malawi/ South Africa).
Hosts: *Cussonia spicata*.
References: (**ds**) Browne 1973a: 283; Schedl 1982: 278. (**tx**) Browne 1957d: 31, 1973a: 283–284; Powell, W. 1980: 29; Schedl 1957d: 31, 1959n: 422; Wood, S. L. 1986a: 42.

***avarus* Wood** 1969b: 1. Holotype ♀; Volcan Irazu, Cartago, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: *Oreopanax nubigenus*.
References: (**hb**) Wood, S. L. 1982b: 145. (**ds**) Wood, S. L. 1982b: 145. (**tx**) Wood, S. L. 1969b: 1, 1982b: 145.

***bergeri* Spessivtsev** 1919: 249. Syntypes, sex?; E. Siberia, Vladivostok; not located.
Figures: Stark 1952: 178 (adult).
Distribution: Asia (Heilongjiang in China/ Siberia in E USSR).
Hosts: *Phellodendron amurense*.
References: (**ay**) Chararas 1956c. (**cn**) Kurenzov 1935c: 189. (**ec**) Kurenzov 1934a: 51. (**hb**) Chararas 1956c; Kurenzov 1935a: 19, 27, 1948b: 125; Stark 1952: 178. (**ds**) Krivolutskaya 1983; Kurenzov 1934a: 51, 1935a: 19, 27, 1935c: 189, 1936a: 110, 1936b: 350, 1938a: 59; Stark 1952: 178. (**tx**) Chararas 1956c; Kurenzov 1941a: 115–116, 1948b: 125; Schedl 1934f: 1634; Spessivtsev 1919: 249–251; Stark 1952: 178.

***capensis* (Schedl)** 1971e: 6 (*Dacryophthorus*). Holotype ♀?; Sudafrika, Cape Prov.; Schedl Collection at NHMW, Wien.
Distribution: Africa (South Africa).
References: (**tx**) Schedl 1971e: 6, 1979c: 51.

***chiliensis* (Nunberg)** 1964b: 432 (*Squamosinulus*). Holotype, sex?; Chili; NHMB, Budapest.
Figures: Nunberg 1964b: 431 (adult, antenna).
Distribution: South America (Chile).
References: (**ds**) Schedl 1972d: 139. (**tx**) Nunberg 1964b: 431, 432; Schedl 1972d: 139.

***darjeelingensis* Schedl** 1971c: 371. Holotype ♀?; India: Darjeeling; Schedl Collection at NHMW, Wien.
Distribution: Asia (Bengal in India).
Hosts: *Quercus lamellosa*.
References: (**tx**) Schedl 1971c: 371.

***freiburgi* Schedl** 1972g: 57. Holotype ♂; Brasilien, N. Freiburg; Schedl Collection at NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1972g: 57.

***fuliginosus* Blandford** 1897a: 158. Holotype ♀; Volcan de Chiriqui, Panama; BMNH, London.
Distribution: North America (Costa Rica/ Panama).

Hosts: *Oreopanax xalapensis*.
References: (**hb**) Wood, S. L. 1982b: 148. (**ds**) Blackwelder 1947; Hagedorn 1910d: 25; Kleine 1912b: 182, 1914b: 358; Wood, S. L. 1982b: 148. (**tx**) Blandford 1897a: 158; Hagedorn 1910a: 64; Wood, S. L. 1982b: 148.

***gummensis* (Murayama)** 1958: 931 (*Pruniphagus*). Holotype ♂; Mt. Manza, Gumma Pref., Japan; Murayama Collection at USNM, Washington.
Distribution: Asia (Japan).
Hosts: *Prunus grayana*.
References: (**ds**) Nobuchi 1985b: 7. (**tx**) Murayama 1958: 931.

***imperialis* (Schedl)** 1958f: 39 (*Pseudochramesus*). Syntypes ♂; Argentinien: Buenos Aires: Tigre; Schedl Collection at NHMW, Wien, and Viana Collection.
Distribution: South America (Argentina).
Notes: (1) Schedl 1979c: 122 (citation of holotype invalid).
References: (**hb**) Viana 1964: 127. (**ds**) Viana 1964: 127. (**tx**) Schedl 1958f: 39, 1966f: 102, 1979c: 122.

calvus Schedl 1979e: 60. Holotype ♂; Buenos Aires, Pilar Island [Argentina]; Schedl Collection in NHMW, Wien. Synonymy: Wood 1988b: 190.
References: (**tx**) Schedl 1979e: 60; Wood, S. L. 1988b: 190.

***irrasus* Blandford** 1897a: 157. Lectotype ♂; Volcan de Agua, 8500–10,500 ft., Guatemala; BMNH, London, designated by Wood 1982b: 147.
Figures: Blandford 1896e:pl. 6, figs. 17–18.
Distribution: North America (Guatemala).
References: (**ds**) Blackwelder 1947; Hagedorn 1910d: 25; Kleine 1912b: 182, 1914b: 358; Wood, S. L. 1982b: 147. (**tx**) Blandford 1897a: 157; Wood, S. L. 1982b: 147.

***maculatus* Schedl** 1951d: 18. Syntypes ♀; Chile, Quillota; Mus. Nac. Hist. Nat., Santiago, and Schedl Collection at NHMW, Wien.
Distribution: South America (Chile).
Hosts: *Nothofagus pumilio*.
Notes: (1) Schedl 1979c: 144 (citation of holotype invalid).
References: (**ds**) Schedl 1966f: 95, 1972d: 139. (**tx**) Schedl 1951d: 18, 1955e: 255, 1966e: 44, 1972d: 139, 1979c: 144.

***marmoratus* Blandford** 1897a: 159. Lectotype ♀; Capetillo, Guatemala; BMNH, London, designated by Wood 1982b: 149.
Distribution: North America (Guatemala/ Veracruz in Mexico).
Hosts: *Oreopanax* sp., *O. xalapensis*.
References: (**hb**) Wood, S. L. 1982b: 149. (**ds**) Blackwelder 1947; Hagedorn 1910d: 25; Kleine 1912b: 182, 1914b: 358; Wood, S. L. 1982b: 149. (**tx**) Blandford 1897a: 159; Hagedorn 1910a: 64; Wood, S. L. 1982b: 149.

***mexicanus* Wood** 1974a: 7. Holotype ♂; Yerba Buena, 32 km N Bochil, Chiapas, Mexico; CNCI, Ottawa.
Distribution: North America (Chiapas, Morelos in Mexico).
Hosts: *Oreopanax xalapensis*.
References: (**hb**) Atkinson et al. 1986: 19; Burgos & Saucedo 1983: 54. (**ds**) Atkinson et al. 1986: 19; Burgos & Saucedo 1983: 54; Wood, S. L. 1982b: 149. (**tx**) McNamara 1984: 759; Wood, S. L. 1974a: 7, 1982b: 149.

***minor* Eggers** 1928c: 84. Holotype ♂?; Brasil, Sao Paulo; Eggers Collection, in NHMW, Wien.
Distribution: South America (Brazil).
References: (**ds**) Blackwelder 1947. (**tx**) Eggers 1928c: 84–85.

***montanus* Blackman** 1940a: 123. Holotype ♀; Sula, Montana [USA]; USNM, Washington.
Figures: Bright 1976d: 195, 200, 206.
Distribution: North America (Alaska/ Alberta, British Columbia, Saskatchewan in Canada/ California, Colorado, Idaho, Montana, Nevada, Oregon, Utah, Washington in USA).
Hosts: *Picea engelmannii, P. glauca, P.* sp., rare in *Larix occidentalis*.
References: (**ay**) Chararas 1956c. (**bv**) Furniss, M. M. & Carolin 1977: 375. (**cn**) Doane et al. 1936. (**ec**) Furniss, R. L. & Carolin 1977: 375; Werner & Holsten 1984. (**hb**) Bright 1976d: 76; Bright & Stark 1973: 34; Chamberlin 1958: 94–95; Chararas 1956c; Doane et al. 1936; Furniss, R. L. & Carolin 1977: 375. (**ds**) Blackwelder & Blackwelder 1948; Bright 1964: 170, 1976d: 76; Bright & Stark 1973: 34; Chamberlin 1958: 94–95; Elias 1985: 13; Furniss, R. L. & Carolin 1977: 375; Gast et al. 1989: 385; Werner & Holsten 1984; Wood, S. L. 1951a: 127, 1972a: 404. (**tx**) Blackman 1940a: 123–124; Bright 1976d: 76, 195, 200, 206; Chamberlin 1958: 94–95; Chararas 1956c; Wood, S. L. 1972a: 404, 1982b: 147.

***nigrosetosus* Hagedorn** 1909a: 737. Syntypes, sex?; Argentinia, Gebirge Neuquem; Hamburg Museum, lost.
Distribution: South America (Argentina).
References: (**ds**) Blackwelder 1947; Bruch 1914a; Hagedorn 1906, 1910d: 25; Kleine 1912b: 182, 1914b: 333. (**tx**) Hagedorn 1906, 1909a: 737, 1910a: 64.

***obscurus* Eggers** 1941b: 222. Holotype, sex?; Fukien (Kuatun, 2300 m); Alexander Koenig Museum, Bonn.
Distribution: Asia (Fujian in China).
References: (**tx**) Eggers 1941b: 222.

***ougeniae* Wood** 1988a: 37. Holotype ♀; Asan R., Dehra Dun; FRI, Dehra Dun.
Distribution: Asia (Uttar Pradesh in India).
Hosts: *Ougenia dalbergioides*.
References: (**tx**) Wood, S. L. 1988a: 37.

***padus* Wood** 1988a: 38. Holotype ♀: Mundali, Chakrata, Uttar Pradesh, 8500'; FRI, Dehra Dun.

Distribution: Asia (Yunnan in China/ Himachal Pradesh, Talrathach, Uttar Pradesh in India).

Hosts: *Prunus padus*.

Notes: (3) Beeson 1941(1961: 285) (cited as *Alniphagus padus*, nomen nudum).

References: (**tx**) Wood, S. L. 1988a: 38.

***pilosus* (Ratzeburg)** 1837: 178 (*Hylesinus*). Syntypes, sex?; Harze in Menge, Germany; MNB, Berlin (?).

Figures: Grune 1979: 74, Postner 1974: 413 (adult, antenna, galleries), Stark 1952: 178 (adult, galleries), Tsai & Li 1959: 80.

Distribution: Asia (Heilongjiang in China/ Sakhalin Island, Siberia in E USSR), Europe (Austria/ Belgium/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Hungary/ Italy/ Norway/ Poland/ Romania/ Sweden/ Switzerland/ W USSR/ Yugoslavia).

Hosts: *Picea* spp., rarely *Abies* sp., *Larix* sp.

References: (**ay**) Chararas 1956a: 113–213, 1956c: 93, 100–101; Eichelbaum 1903; Escherich 1923b: 479, 571; Fuchs 1912a; Lekander 1959b: 33; Marcu 1933a: 33; Robertson 1961; Sedlaczek 1902b: 244; Wichmann 1912a: 9–10. (**bv**) Annila 1975: 8; Barr, B. A. 1969: 643; Grune 1979: 75; Nuorteva 1956c: 17; Rozhkov 1970: 135; Tragardh 1930b: 107; Wichmann 1912a: 9. (**cn**) Borcea 1924; Escherich 1923b: 479, 571; Esterberg 1959; Gabler 1955; Greckin 1962b: 766; Hess & Beck 1914: 265, 1927: 320; Judeich & Nitsche 1895: 447, 526; Juutinen 1960: 20; Koppen 1882: 247; Kurenzov 1935c: 187, 1950a: 13; Marcu 1926c: 61; Nestertschuk 1930: 176; Nosek 1951: 106; Nusslin 1913: 238; Pfeffer 1949b: 150; Pierce, W. D. 1917: 70; Rhumbler 1922: 280, 1927: 292; Saalas 1949: 340, 349; Schimitschek 1937c: 47, 1952a: 209, 1955a: 57, 1955c: 76, 1956: 339; Schwerdtfeger 1944a: 179, 1957a: 185; Strohmeyer 1950: 21; Stolina 1969: 610–627; Trappen 1935: 141; Wachtl 1901: 381. (**ec**) Annila 1975: 11, 1977; Apfelbeck 1916b; Balazy & Michalski 1964b; Barbey 1927; Chararas 1959c, 1959d; Gyorfi 1962: 214; Heqvist 1963, 1967: 70; Kangas 1946b: 23; Kleine 1908c: 182, 1944: 69; Knoche 1908b: 204; Kostin 1964: 102; Kurenzov 1934a: 52; Nosek 1951: 106; Nuorteva 1956a: 17, 1957b: 53, 1968a, 1970, 1971; Nusslin 1927: 292; Palmen 1946: 194; Pfeffer 1923a: 332, 1932a: 15, 1949b: 150, 1959: 5; Ruhm 1956b: 3; Rybinski 1903: 28; Saalas 1917a: 18, 1928: 652, 1930: 119, 1949: 340, 349, 1951: 16; Schedl 1958d: 187, 192; Schimitschek 1930a: 281, 1931b: 487, 1952a: 209, 1953b: 531, 1955a: 57; Schwerdtfeger 1944a: 179, 1957a: 185; Sedlaczek 1935a: 163; Thalenhorst 1958: 34; Wichmann 1954d: 437, 1955a: 106; Yanovskii 1977b. (**hb**) Annila 1977; Apfelbeck 1916b; Barbey 1901: 19, 53, 1913; Beffa 1949, 1961; Borcea 1924; Budkov 1897; Cecconi 1906, 1924; Chapman 1869a: 199; Chararas 1956c, 1962: 381; Charvat 1950; Eckstein 1897; Eichhoff 1881a: 37, 121, 1892b: 99; Escherich 1923b: 479, 571; Florov 1949: 59; Fuchs 1904a, 1907: 12; Gabler 1955; Gornostaev 1916: 310; Gyorfi 1957; Hagedorn 1903a; Hennings 1908d; Henschel 1895a: 140; Hess & Beck 1914: 265, 1927: 320; Jaroschka 1889: 258; Judeich & Nitsche 1895: 447, 526; Kangas 1949c; Karpinski 1933b: 23; Karpinski & Strawinski 1948: 154; Kharitonov 1924: 199–204; Knotek 1899b: 1, 1901: 565; Kostin 1960: 131; Krivolutskaya 1956: 827, 1960; Kurenzov 1935a: 20, 1948b: 109, 1950d: 196; Kurenzov & Kononov 1961: 598; Lekander 1959b: 33; Lengerken 1939: 52, 1954: 72; Lindemann 1880a: 161, 163; Milani 1898: 121–136; Nordlinger 1856: 36; Nunberg 1929: 95; Nuorteva 1956c: 17, 1968a, 1970; Nusslin 1898: 277, 1913: 238, 1927: 292; Opanansenko & Kononenko 1966; Pfeffer 1941c: 10, 1989a: 30; Postner 1974: 413; Ratzeburg 1837: 178, 1839: 218; Rhumbler 1922: 280, 1927: 292; Rozhkov 1970: 135; Rupertsberger 1880: 226; Saalas 1913a: 67, 77, 1949: 340, 349, 1951: 16; Schimitschek 1930a: 281, 1955a: 57; Schwerdtfeger 1944a: 179, 1957a: 185, 1981: 190; Sedlaczek 1935a: 163; Simmel 1916: 191; Spessivtsev 1913a: 62; Stark 1952: 179; Thalenhorst 1958: 34; Tragardh 1929a: 314, 1930b: 107, 1930c: 478, 1931: 61; Wachtl 1901: 381. (**ds**) Allen, A. 1947; Ammann & Knabl 1923; Bakke & Kvamme 1977; Bangsholt 1975: 95; Beffa 1949; Bejer-Petersen & Jorum 1977: 10; Belousev 1916, 1917: 334–357; Bistrom & Vaisanen 1988: 42; Borcea 1924: 221–260; Borchert 1951; Brakman 1966b: 204; Bucking 1932; Budkov 1897; Calwer 1893; Cecconi 1906; Chapuis 1869: 36, 1873: 244; Charvat 1950; Chorbadzhievo 1924d; Crotch 1863; Eggers 1904; Endrodi 1958b; Ericson & Sandin 1893; Escherich 1923b: 479, 571, 1932b; Esterberg 1928, 1959; Forster 1849: 440; Fowler 1882a, 1891; Fuchs 1904a, 1905a, 1905b, 1907: 12; Gaubil 1849: 127; Gornostaev 1917: 308–315; Greckin 1962b: 706; Gredler 1875: 114; Grill 1895: 308; Grouzelle 1905; Grune 1979: 75; Hagedorn 1903a, 1904e, 1910d: 25; Hansen, V. 1929: 140–141, 1939, 1956, 1964: 457; Heinemann 1908a; Hellen 1947; Henschel 1895a: 140; Heyden, Reitter, & Weise 1883: 181, 1891: 668, 1906: 709; Holdhaus & Deubel 1910: 145; Horion 1951; Judeich & Nitsche 1895: 447, 526; Kaltenback 1874: 686; Kamp 1979; Kangas 1948b: 128, 1949c: 169; Karpinski 1931: 19, 22, 38, 1933b: 23, 1948b: 229; Karpinski & Strawinski 1948: 154; Kiefer et al. 1942: 528; Kinelski et al. 1959: 245; Klefbeck & Sjoberg 1960: 228; Kleine 1912a: 128, 217, 263, 267, 1912b: 182, 1913a: 34; Kloft & Hinks 1945: 217; Knotek 1899b: 1, 1901: 565; Kolbe, W. 1921: 82; Koppen 1882: 247; Kozikowsky & Kuntze 1925: 19; Kraatz 1869: 59; Krivolutskaya 1956:

827, 1960, 1983; Kurenzov 1934a: 52, 1935a: 20, 1935c: 187, 1936a: 111, 1936b: 351, 1938a: 61, 1951: 222, 1965, 1967; Kurenzov & Kononov 1961: 595; Kurir 1947c: 15; Lacordaire 1866: 361; Lazorko 1963; Leclerq 1971; Lindberg & Saris 1952: 58; Lindemann 1884b: 263; Lokaj 1868: 63; Lomnicki 1913b: 147; Lucht 1987: 277; Luigioni 1929: 992; Lundberg 1974: 92; Mahler 1987: 232; Marcu 1926c: 61; Matthews & Fowler 1883: 42; Michalski 1957: 163; Negru 1966b: 399, 1968a: 454; Nunberg 1927a: 212, 1928b: 87, 97, 1954: 41, 1960b: 155; Nuorteva 1971: 66; Nusslin 1898: 277; Orest 1926c: 60; Palmen 1946: 194; Pfeffer 1924b: 472, 1930b: 120, 1931b: 75, 1947e: 3, 1950b: 73, 1989a: 30; Pierce, W. D. 1917: 70; Pittioni 1943: 174; Postner 1974: 413; Prossen 1913: 82; Rapp 1934: 722; Ratzeburg 1837: 178, 1839: 218; Redtenbacher 1874: 370; Reitter 1869b: 153, 1894a: 55, 1916: 279; Roubal 1922: 78, 1941: 257; Rozhkov 1970: 135; Rye 1866c: 258, 1871b: 107; Saalas 1913a: 67, 77, 1916: 91–95, 110–116, 1917a: 18, 1919: 1–415, 1930: 119, 1931: 70; Sahlberg 1900: 105; Schaufuss 1915: 1221; Schaum 1859: 95, 1862: 100; Schedl 1967c: 69, 1981b: 61; Scheerpeltz & Winkler 1930: 256; Schilsky 1909: 187; Schiodte 1873: 100; Schwerdtfeger 1981: 190; Seidlitz 1872: 392, 1891a: 560, 1891b: 605; Sharp & Fowler 1893: 34; Shirskaya 1961: 1–165; Stark 1926b: 102, 1926j: 125, 1931d: 544, 1952: 179; Stein 1868: 113; Stein & Weise 1877: 163; Stierlin 1898: 433; Stierlin & Gautard 1871: 391; Strand 1946: 595; Sturm 1826: 102; Thomson 1865: 353, 1868: 218; Tredl 1907: 10; Vrydagh 1954: 63; Wegelius 1960: 106; Westhoff 1882: 237; Wichmann 1927a: 57, 1955a: 106; Wilke 1931: 670; Wilken 1864: 373; Wiren 1945: 43; Yanovskii 1974, 1977a, 1989: 64; Yanovskii & Dmitrienko 1983; Yanovskii & Tegshzhargal 1985: 408, 1985: 408; Zinovjev 1955: 186, 1958: 379–393. (**tx**) Bach 1854; Balachowsky 1949a: 98; Barbey 1901: 19, 53; Beffa 1949, 1961; Blackman 1922c: 117–119, 1940: 123; Chapuis 1869: 36, 1873: 248; Chararas 1956c; Charvat 1950; Chorbadzhievo 1924d; Csiki 1907; Doebner 1860; Eggers 1929e: 49–50; Eichhoff 1864b: 27, 1881a: 37, 121, 1883a: 102, 124; Endrodi 1957b; Escherich 1923b: 479, 571; Fleischer 1927; Formanek 1907: 23; Fuchs 1912a; Gabler 1955; Gebien 1907: 197; Gemminger & Harold 1872: 2673; Grune 1979: 74, 75; Hagedorn 1910a: 64; Hansen, V. 1956, 1964: 457; Henschel 1895a: 140; Judeich & Nitsche 1895: 447, 526; Karpinski & Strawinski 1948: 154; Koch 1928: 91, 1932: 117; Krivolutskaya 1956: 827, 1958: 114; Kurenzov 1941a: 114–115, 1948b: 109; Lacordaire 1866: 361; Lazorko 1963; Lekander 1959b: 33; Letzner 1844: 69, 1891: 373; Lindemann 1879: 83, 1881: 161–163; Lucas 1920: 674; Lucht 1987: 277; Luigioni 1929: 992; Negru 1966b: 399; Nordlinger 1856: 36; Nunberg 1954: 41; Pfeffer 1932b: 13, 1941c: 10, 1947e: 3, 1955a: 100; Postner 1974: 413; Ratzeburg 1837: 178, 1839: 218; Redtenbacher 1849: 793, 852, 1849b: 27, 1874: 370; Reitter 1894a: 55, 1894c: 45, 1913a: 44, 1916: 279; Rhumbler 1922: 280, 1927: 292; Rupertsberger 1880: 226; Saalas 1913a: 67, 77, 1949: 340, 349; Schedl 1934f: 1634, 1947: 32, 1981b: 61; Schimitschek 1937c: 47, 1955c: 76; Seidlitz 1872: 392, 1891a: 560, 1891b: 605; Sokanovskii 1929: 521–526, 1958: 38; Spessivtsev 1913a: 62, 1919: 249–251, 1922a: 464, 1925a: 164, 491, 1931: 34–35; Stark 1952: 179; Stierlin 1898: 433; Stresemann et al. 1989: 352; Thomson 1865: 353, 1868: 218; Tsai & Li 1959: 80; Yin, Huang, & Li 1984: 63. (**ms**) Chararas 1959d; Escherich 1932b; Heinemann 1908a; Kangas 1971: 27; Lucas 1920: 674; Schimitschek 1930b: 407.

***planicolle* (Schedl)** 1953d: 74 (*Chilodendron*). Syntypes 2 ♀; Madagascar: Mt. d'Ambre; MNHN, Paris, and Schedl Collection in NHMW, Wien.
Figures: Schedl 1977b: 14.
Distribution: Madagascar.
Notes: (1) Schedl 1979c: 196 (citation of holotype invalid). Wood 1992:(in press) (to *Xylechinus*).
References: (**ds**) Schedl 1977b: 15. (**tx**) Schedl 1953d: 74, 1977a: 14, 1977b: 14, 15, 1979c: 196; Wood, S. L. 1992: (in press).

***porteri* Brethes** 1925: 202. Holotype, sex?; Loncoche, Chile; not given.
Figures: Rhum 1976: 138.
Distribution: South America (Chile).
References: (**ec**) Hirschmann 1972; Ruhm 1969. (**hb**) Ruhm 1976: 138. (**ds**) Blackwelder 1947; Schedl 1972d: 139. (**tx**) Brethes 1925: 202; Ruhm 1976: 138; Schedl 1972d: 139.

***roeri* Schedl** 1977c: 395. Holotype, sex?; Sudwestafrika: Grootfontein, Farm Mariabronn; Alexander Koenig Museum, Bonn.
Distribution: Africa (Namibia).
References: (**tx**) Schedl 1977c: 395.

***scabiosus* Blandford** 1897a: 158. Lectotype ♀; Volcan de Agua, 8500–10,500 ft., Guatemala; BMNH, London, designated by Wood 1982b: 144.
Distribution: North America (Guatemala).
References: (**ds**) Blackwelder 1947; Hagedorn 1910d: 25; Kleine 1912b: 182, 1914b: 358; Wood, S. L. 1982b: 144. (**tx**) Blandford 1897a: 158; Hagedorn 1910a: 64; Schedl 1979c: 220; Wood, S. L. 1982b: 144.

***spathifer* Schedl** 1955e: 256. Lectotype ♂; Chile (Prov. Malleco, Laguna de Malleco, 900 m); Schedl Collection in NHMW, Wien, designated by Wood 1985: 270.
Distribution: South America (Argentina/ Chile).
Hosts: *Lomatia hirsuta*.
References: (**ds**) Schedl 1972d: 138. (**tx**) Schedl 1955e: 255–256, 1963h: 259, 1972d: 138; Wood, S. L. 1985: 270.
lomatiae Schedl 1975d: 2 (*Pteleobius*). Holotype ♂; Argentinien, Nahuel Huapi Natl. Park;

Schedl Collection in NHMW, Wien. Synonymy: Wood 1985: 270.
References: (**tx**) Schedl 1975d: 2; Wood, S. L. 1985: 270.

***squamiger* Schedl** 1979e: 60. Holotype ♂; Cordoba, Dep. de Calamuchita, El Sauce Argentina; MACN, Buenos Aires.
Distribution: South America (Argentina).
References: (**tx**) Schedl 1979e: 60.

***squamosus* (Schedl)** 1942c: 165 (*Phloeosinus*). Holotype ♂?; Australien; Schedl Collection at NHMW, Wien.
Distribution: Australia (Tasmania).
References: (**ds**) Schedl 1979a: 161. (**tx**) Razzauti 1956: 142; Schedl 1942c: 165, 1955b: 279, 1963h: 262.

***sulcatus* Schedl** 1966f: 100. Holotype ♀; S. Argentine, Chubut, El Hoyo; NHMB, Budapest.
Distribution: South America (Argentina).
References: (**tx**) Schedl 1966f: 100.

***tessellatus* Blandford** 1897a: 159. Holotype ♀; Volcan de Agua, Guatemala; BMNH, London.
Distribution: North America (Guatemala/ Honduras/ Chiapas, Oaxaca in Mexico).
Hosts: *Oreopanax* sp.
References: (**hb**) Wood, S. L. 1982b: 147. (**ds**) Atkinson & Equihua 1988: 102; Blackwelder 1947; Hagedorn 1910d: 25; Kleine 1912b: 182, 1914b: 358; Wood, S. L. 1982b: 147. (**tx**) Blandford 1897a: 159; Hagedorn 1910a: 64; Wood, S. L. 1982b: 147.

***uniformis* Schedl** 1982: 281. Holotype, sex?; Zimbabwe; Transvaal Museum, Pretoria.
Distribution: Africa (Zimbabwe).
References: (**tx**) Schedl 1982: 281.

***variegatus* (Chapuis)** 1869: 40 (*Phloeosinus*). Holotype, sex?; Chili; IRSNB, Brussels.
Distribution: South America (Chile).
References: (**hb**) Zocchi 1956: 140, 142. (**ds**) Blackwelder 1947; Hagedorn 1910d: 28; Kleine 1912b: 183, 1914b: 332; Schedl 1972d: 140. (**tx**) Chapuis 1869: 40, 1873: 248; Hagedorn 1910a: 66; Schedl 1972d: 140; Zocchi 1956: 140, 142.

***vittatus* Schedl** 1966f: 100. Holotype ♂?; Chile; Schedl Collection in NHMW, Wien.
Distribution: South America (Chile).
References: (**ds**) Schedl 1966f: 96, 1972d: 140. (**tx**) Schedl 1966f: 100, 1972d: 140.

Genus *Hylurgus* Latreille

HYLURGUS LATREILLE 1807: 274. Type-species: *Bostrichus ligniperda* Fabricius, monobasic.
References: (**ay**) Nobuchi 1969a: 50; Nusslin 1911, 1912; Schonherr 1970b. (**bv**) Schonherr 1970b. (**cn**) Doebner 1862: 158; Espanol 1967: 121–125; Simmonds 1966. (**hb**) Nusslin 1906: 13–14; Wood, S. L. 1986a: 42. (**ds**) Hagedorn 1910d: 12; Karaman 1972: 82; Schedl 1981b: 53; Scheerpeltz 1930: 256; Wood, S. L. 1986a: 42. (**tx**) Balachowsky 1949a: 133; Blackman 1941: 2; Chapuis 1969: 33, 1973: 241; Eichhoff 1964: 24–46, 1878b: 399–400, 1881: 98; Erichson 1836: 52; Hagedorn 1910: 54–55; Hopkins 1914: 123, 1915c: 209, 226; Latrielle 1807: 274; LeConte 1868: 168; Pfeffer 1989a: 35; Reitter 1894: 58, 1913a: 47, 49; Schedl 1938f: 40, 1959n: 383–384, 1981b: 53; Schimitschek 1937: 44–48; Swan 1942: 89; Wollaston 1954: 301; Wood, S. L. 1986a: 42; Zimmermann 1868: 142.

***indicus* Wood** 1985: 273. Holotype ♀; Kumaon (region), W. Almora, U. P., India; FRI, Dehra Dun.
Distribution: Asia (Uttar Pradesh in India).
Hosts: *Pinus roxburghii*.
Notes: (1) Beeson 1941 (1961: 288) (*chir*, nomen nudum).
References: (**tx**) Wood, S. L. 1985: 273.

***ligniperda* (Fabricius)** 1787: 37 (*Bostrichus*). Holotype, sex?; Germaniae; UZMC, Copenhagen.
Figures: Bain 1977a, Balachowsky 1949a: 138, Chararas 1962c: 373, Grune 1979: 56, Joly 1976b: fig.137, Pfeffer 1989a:pl. 2, Postner 1974: 400.
Distribution: Africa (Azores Islands/ Canary Islands/ Madeira Island/ Morocco/ introduced to South Africa/ Tunisia), Asia ("Manchuria" in China/ Japan/ Turkey), Australia (introduced in South Australia), Europe (Austria/ Belgium/ Corsica/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Hungary/ Italy/ Netherlands/ Norway/ Poland/ Portugal/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia), New Zealand, St. Helena Island (introduced), South America (introduced to: Brazil/ S Chile/ Uruguay).
Hosts: *Pinus* spp.
Notes: (3) Wachtl 1881b: 227 (*maritimus* Reitter, nomen nudum, synonymy).
References: (**ay**) Escherich 1923b: 480; Fabre, J. P. & Carle 1975; Feytaud 1950a; Francke-Grosmann 1959; Fuchs 1912a: 3–54; Marcu 1933a: 34; Menier & Carle 1976: 92; Nunberg 1928a: 140; Nusslin 1911a: 59, 255, 1912c: 269, 277; Sasakawa & Yoshiyasu 1983; Wichmann 1912a: 7–10. (**bv**) Barr, B. A. 1969: 641; Fabre, J. P. & Carle 1975; Grune 1979: 57; Menier & Carle 1976: 92; Wichmann 1912a: 9. (**cn**) Anonymous 1970c: 13, 1974q, 1977r, 1978w, 1979q, 1980g; Bain 1977a; Block 1906: 7; Boden 1903; Chararas 1976c, 1978; Ciesla 1988; Donisthorpe 1931: 173; Eckstein 1917, 1926: 577; Egorov 1958: 1492; Escherich 1923b: 480; Espanol 1964a; Esterberg 1959; Faulds 1988, 1989; Feytaud 1950a; Gabler 1955; Garcia de Viedma 1964; Giebel 1856; Gmelin 1787a; Gois 1944; Grandi 1951; Hanson, H. S. 1940a; Hartig 1861: 324, 1877: 190; Hess 1880, 1898: 381; Hess & Beck 1914: 249, 1927: 303; Hosking 1979a; Hrubik 1973; Jablokoff 1953: 327; Joly 1976; Judeich & Nitsche 1895: 447, 454; Kholodkovskii 1912: 302; Koch 1913: 22; Marcu

1926c: 61; Mumford 1965: 22, 1966: 28; Nusslin 1913: 238; Pfeffer 1933: 43; Rhumbler 1922: 280, 1927: 292; Ruhm 1958: 295; Russo 1946a: 24, 40; Schimitschek 1937c: 48, 1944: 166, 1955c: 78; Schuster 1918: 102; Schwappach et al. 1929: 186; Schwerdtfeger 1944a: 183, 1950b: 44, 1957a: 189; Trappen 1935: 141; Wachtl 1901: 381; Weber, H. 1926: 577; Wolff 1920: 235; Wolff & Krausse 1922: 84; Zondag 1982. (**ec**) Apfelbeck 1916b; Balazy 1965a; Chararas 1964b; Faulds 1989; Francke-Grosmann 1959; Fuchs 1911: 182, 1929a: 248–285, 1930, 1937, 1938: 123–190; Galoux 1947b; Gyorfi 1941b: 49–65; Hirschmann 1960, 1971b: 41; Hirschmann & Wisniewski 1982, 1983; Jakaitis & Valenta 1976: 20; Kielczewski & Wisniewski 1978, 1980a, 1980b, 1983; Kleine 1908c: 182, 1909a: 44, 76, 1944: 72–73, 76, 82 [parasite numbers 14, 61, 70, 117, 303, 425, 436]; Knoche 1908b: 202; Kostenko 1929; Kostin 1964: 104; Majewski, T. & Wisniewski 1978a: 5; Michalski & Ratajczak 1989; Novak, P. 1952: 413; Nusslin 1927: 292; Perris 1852: 497, 1854a: 101, 1856a: 204; Pfeffer 1928b: 2, 1933: 43; Ruhm 1956b: 3; Russo 1946a: 24, 40; Schuster 1918: 102; Schwerdtfeger 1944a: 183, 1950b: 44, 1957a: 189; Wiackowski 1957a: 43; Wichmann 1955a: 92, 101; Wingfield & Knox-Davies 1980; Wingfield, Strauss, & Tribe 1985; Zondag 1979. (**hb**) Altum 1881c: 268, 1885a, 1887a, 1887d, 1888a, 1889c; Apfelbeck 1916b: 438, 1917; Bach 1864; Bain 1977a; Barbey 1901: 19, 48; Bargmann 1906: 316–318; Beffa 1961; Boden 1903; Budge 1949; Cabral 1959; Cecconi 1924; Chararas 1962c: 371; Charvat 1950; Decelle 1972b: 516; Dombrowsky 1887; Eckstein 1897, 1917, 1926: 577; Eichhoff 1881a: 36, 98, 1881d: 435, 1883d: 676; Elton et al. 1964; Escherich 1923b: 480; Evans 1952: 141; Everts 1903: 750; Fabre, J. P. & Carle 1975; Feytaud 1950a; Fuchs 1904a; Gabler 1955; Germar 1813; Gmelin 1787a; Gois 1944; Grandi 1951; Gyorfi 1957; Hartig 1861: 324, 1877: 190; Hennings 1908b; Henschel 1880b, 1895a: 136; Hess 1880, 1898: 381; Hess & Beck 1914: 249, 1927: 303; Jaursch 1892: 21; Joly 1976; Judeich & Nitsche 1895: 447, 454; Kholodkovskii 1912: 302; Knoche 1905: 354; Kostin 1960: 131; Lengerken 1939: 57, 1954: 76; Loos 1913: 406; Lunardoni & Leonardi 1889: 422; Normand 1937: 268; Nordlinger 1856: 36; Nusslin 1898: 277, 1906: 13, 1913: 238, 1927: 292; Perris 1852: 497, 1856a: 204, 221; Pfeffer 1941b: 7; Postner 1974: 401; Ratzeburg 1837: 131, 178, 1839: 159, 218; Rhumbler 1922: 280, 1927: 292; Rudnev & Kozak 1974a; Rupertsberger 1879: 231, 1880: 226; Russo 1946b: 297, 311–314; Saalas 1923: 59, 333, 549; Scheidter 1934; Schimitschek 1944: 166; Schwappach et al. 1929: 186; Schwerdtfeger 1944a: 183, 1957a: 189, 1981: 194; Spessivtsev 1913a: 48; Stanek 1969: 256; Stark 1926a: 332, 1952: 194; Swann 1942: 86; Takahashi 1989: 403; Wachtl 1901: 381; Weber, H. 1926: 577; Wissman 1846: 24; Wolff 1920: 235; Wolff & Krausse 1922: 84; Zocchi 1959: 103. (**ds**) Acloque 1896; Ammann & Knabl 1923; Andersch 1851; Anonymous 1970c: 13, 1974q, 1977r, 1978w, 1980g; Arnoldi et al. 1955: 670; Audras & Schaefer 1957; Baeta Neves 1947, 1952a; Barthe 1896; Bau 1888; Bedel 1888b: 392, 408; Bejer-Petersen & Jorum 1977: 20; Binaghi 1967; Blanchere & Robert 1889; Borchert 1951; Borges & Serrano 1989; Brakman 1966b: 204; Brancsik 1871, 1906; Bright 1987a: 2; Brimblecombe 1953: 11; Browne 1980d: 492; Cabral 1959; Calwer 1884, 1893; Carpentier & Delaby 1908; Chapuis 1869: 33, 1873: 241; Chapuis & Candeze 1853; Chararas 1962c: 371; Charvat 1950; Ciesla 1988; Debatisse 1945; Decelle 1972a, 1972b: 516; Duftschmidt 1825; Eckstein & Butovitch 1931; Eder 1934; Eggers 1904; Endrodi 1958b, 1986: 217; Escalera 1919; Escherich 1923b: 480; Esterberg 1959; Evans, J. W. 1952: 141; Everts 1922: 639, 1925; Eyquem 1891; Fauvel 1885; Favre 1890; Filipejev 1934; Forster 1840: 440; Fowler 1882a; Fricken 1889: 278; Friederichs 1919; Fuchs 1904a, 1905a; Ganglbauer 1904; Gaubil 1849: 127; Georghiou 1977: 74; Gillerfors 1988; Gozis 1875: 79; Grune 1979: 57; Gyllenhal 1827: 618; Gyorfi 1941b; Hagedorn 1910d: 12–13; Hallett 1923b: 13–14; Hansen, V. 1939, 1956, 1964: 459; Heinemann 1908a; Hellen 1947; Henschel 1895a: 136; Heyden 1876: 297; Heyden, Reitter, & Weise 1883: 181, 1891: 668, 1906: 710; Holdhaus 1923: 115; Horion 1951; Hosking 1979a; Illiger 1805: 130; Israelson 1984; Jablokoff 1953: 327; Jacentkovsky 1912: 287; Jansson 1940: 53, 63; Joly 1976; Judeich & Nitsche 1895: 447, 454; Kaltenbach 1874: 686; Karpinski 1925: 216, 1926: 82, 1931: 22, 38, 1933b: 24; Keler 1925b: 271; Kersten 1933: 73; Klefbeck & Sjoberg 1960: 228; Kleine 1912a: 161, 263, 267, 1912b: 168, 1913a: 34, 1914a: 16, 1934a: 128, 603–606; Kloft & Hinks 1945: 217; Koltze 1901: 152; Koschitsky 1900: 83; Kostenko 1929; Kotula 1873b: 80; Kraatz 1869: 59; Krol 1877: 34; Kugelann 1794: 523; Kurir 1947c: 8; Langhoffer 1915c: 157; Leclercq 1971; Lentz 1857: 137; Liebmann 1939: 153; Lokaj 1868: 63; Lomnicki 1886a: 240, 1913b: 147; Loos 1913: 406; Lucht 1987: 276; Luigioni 1929: 994; Luna de Carvalho 1947: 15; Lunardoni & Leonardi 1889: 422; Lundblad 1958: 489; Marcu 1926c: 61; Mequignon 1936: 25; Mitter 1984: 6; Moragues 1889: 32; Mumford 1965: 22, 1966: 28; Murayama 1936a: 123, 1951c: 3, 1955: 103; Nakane et al. 1963: 382; Neumann 1979; Nobuchi 1966b: 16; Nohira & Ogawa 1986; Novak, P. 1952: 413; Nunberg 1928b: 88, 99, 1954: 34; Nusslin 1898: 277; Oliveira 1887: 326; Orest 1926c: 61; Perris 1876a: 253, 1877a: 414; Peyerimhoff 1919: 252, 1933b: 367–400; Pfeffer 1928b: 2, 1931b: 74, 1933: 3–54, 1947e: 15, 1984: 277–278, 1989a: 35; Pittioni 1943: 174; Postner 1974: 401; Ragusa

1924: 115; Rapp 1934: 723; Ratzeburg 1837: 131, 178, 1839: 159, 218; Redtenbacher 1858: 827, 1874: 368; Reitter 1869b: 153, 1894a: 58, 1916: 282; Roubal 1941: 259; Ruffinelli Rey 1967; Sainte-Claire 1914: 470; Sainte-Claire & Mequignon 1938: 444; Schaufuss 1915: 1224; Schaum 1859: 95, 1862: 100; Schedl 1961b: 184, 1963e: 155, 1966f: 95, 1967c: 69, 1971d: 425, 1972n: 348, 1975k: 274, 1980a: 9, 1981b: 53, 1982: 278; Schedl, Lindberg, & Lindberg 1959: 14; Scheerpeltz & Winkler 1930: 256; Schilsky 1909: 187; Schiodte 1888: 486; Schmidt 1939: 81; Schmitz 1898: 157; Schonherr & Pedrosa-Macedo 1981: 50; Schwerdtfeger 1981: 194; Scudder 1891: 540; Seidlitz 1872: 391, 1891a: 559, 1891b: 605; Stark 1926a: 332, 1926b: 101, 1926j: 124, 1927b: 88, 1952: 194; Stein 1868: 113; Stein & Weise 1877: 163; Stierlin 1898: 432; Stierlin & Gautard 1871: 291; Strauch 1861: 123; Sturm 1826: 156, 1843: 229; Thomson 1859: 146, 1865: 356; Tredl 1907: 10; Tressens 1952: 90; Uyttenboogaart 1937: 116; Viedma 1964: 61; Villa & Villa 1833: 26; Westhoff 1882: 237; Wichmann 1927a: 60, 1955a: 92, 101; Wiepkin 1883: 89; Wollaston 1854: 302, 1857: 99; Zetterstedt 1828: 341, 1840: 191; Zocchi 1959: 103; Zondag 1982; Zoufal 1920: 20. (**tx**) Acloque 1896; Bach 1854, 1864; Bain 1977: 1–7, 1977a; Balachowsky 1949a: 138–139; Barbey 1901: 19, 48; Bechstein et al. 1805: 106; Bedel 1888b: 392, 408; Beffa 1961; Bertolini 1872; Brancsik 1871; Cabral 1959; Calwer 1858; Carne et al. 1980; Carpentier & Delaby 1908; Castelnau 1840; Ceballos 1945; Chapuis 1869: 33, 1873: 241; Chapuis & Candeze 1853; Chararas 1962c: 373; Charvat 1950; Csiki 1908; Decelle 1972: 516–518; Doebner 1860; Dombrowsky 1887; Duftschmidt 1825: 100; Eggers 1904: 94, 1911: 119–120, 1914: 186, 1929e: 43, 1942a: 13; Eichhoff 1864b: 25, 1878d: 400, 1881a: 36, 98, 1883a: 101, 123; Endrodi 1957a: 307, 1957b; Erichson 1836: 52; Escherich 1923b: 480, 1932b; Escherich & Escherich 1897; Everts 1903: 750, 1922: 639; Fabricius 1787: 37, 1792: 367, 1801: 391; Fauvel 1885, 1889; Fleischer 1927; Formanek 1907: 26; Fricken 1889: 278; Fuchs 1912a; Gabler 1955; Gemminger & Harold 1872: 2671; Giebel 1856; Gmelin 1790; Grune 1979: 56, 57; Gyllenhal 1813: 335, 1827: 618; Hagedorn 1910a: 54–55; Hansen, V. 1956, 1964: 459; Henry 1892: 14; Henschel 1895a: 136; Herbst 1793: 107; Hopkins 1914: 123, 134; Illiger 1907: 321; Jacquelin du Val & Fairmaire 1868: 99–100; Joly 1976, 1976b:fig. 137; Judeich & Nitsche 1895: 454, 477; Kalina 1975; Karpinski 1933b: 24; Keler 1927a: 229; Koch 1913: 22; Kugelann 1794: 523; Kuhnt 1913: 1052; Latreille 1807: 274; Letzner 1891: 373; Leunis 1886: 179; Lindemann 1879: 54; Lovendal 1898: 68; Lucas 1920: 343; Lucht 1987: 276; Luigioni 1929: 994; Lunardoni & Leonardi 1889: 422; Mannerheim 1843: 124; Milligan 1978:fig. 3; Murayama 1936a: 123–124, 1954b: 157, 1955: 103; Nakane et al. 1963: 382, pl. 191; Nobuchi 1966b: 16, 1966d:pl. 1; Nordlinger 1848: 250, 1856: 36; Nunberg 1928a: 140, 1954: 34; Nusslin 1911a: 59, 255, 1912c: 269, 277; Olivier 1795b: 8–9; Panzer 1795a: 286; Paykull 1800: 149; Perris 1877a: 414; Pfeffer 1932b: 14, 1941b: 7, 1947e: 15, 1955a: 127, 1989a: 35, pl. 2; Portevin 1935: 318; Postner 1974: 401; Quaschik 1953: 35; Ratzeburg 1837: 131, 178, 1839: 159, 218; Redtenbacher 1849: 363, 852, 1849b: 27, 1858: 827, 1874: 368; Reitter 1894a: 58, 1913a: 49, 1916: 282; Rhumbler 1922: 280, 1927: 292; Rupertsberger 1879: 231, 1880: 226; Sahlberg 1836: 135; Schedl 1934f: 1635, 1947a: 21, 1952f: 87, 1955d: 273, 1957b: 150, 1957c: 324, 1959n: 384, 1980a: 9, 1981b: 53; Schedl, Lindberg, & Lindberg 1959: 14; Schimitschek 1937c: 48, 1955c: 78; Schiodte 1888: 486; Schlechtendal & Wunsche 1879: 124; Seidlitz 1872: 391, 1891a: 559, 1891b: 605; Sharp 1877: 10; Spessivtsev 1913a: 48, 1922: 450, 490, 1931: 23; Stanek 1969: 256; Stark 1952: 194; Stierlin 1872: 391, 1898: 432; Stresemann et al. 1989: 353; Sulzer 1776: 20; Swan 1942: 86–89, 1943: 89; Thomson 1859: 146, 1865: 356; Wachtl 1881a: 300, 1881b: 227; Wissman 1846: 24; Wollaston 1854: 302–303, 1857: 99, 1864: 268, 1865: 249–250, 1869: 299, 321; Zetterstedt 1828: 341, 1840: 191. (**ms**) Escherich 1932b; Germar 1813; Hartig 1834: 412, 413; Heinemann 1908a; Henschel 1880b; Lucas 1920: 343; Ratzeburg 1871b: 400; Schaum 1854: 148.

elongatus Herbst 1793: 117 (*Bostrichus*). Syntypes, sex?; Deutschland; not located. Synonymy: Ratzeburg 1837: 178, Hagedorn 1910d: 13. References: (**hb**) Stark 1952: 195. (**ds**) Hagedorn 1910d: 13; Heyden, Reitter, & Weise 1883, 181, 1891: 668, 1906: 710; Kleine 1912b: 168, 1934a: 128; Kolenati 1846: 38; Lacordaire 1866: 259; Reitter 1894a: 59; Stark 1952: 195; Stein & Weise 1877: 163; Sturm 1833: 26; Villa & Villa 1833: 26. (**tx**) Balachowsky 1949a: 138; Gemminger & Harold 1872: 2671; Grune 1979: 57; Hagedorn 1910a: 55, 1910d: 13; Herbst 1793: 117; Iablokoff-Khnzorian 1961: 157; Illiger 1907: 321; Lacordaire 1866: 359; Panzer 1795a: 289; Ratzeburg 1837: 178; Reitter 1894a: 59, 1913a: 49; Schedl 1934f: 1635; Stark 1952: 195.

flavipes Panzer 1795: 61 (*Hylesinus*). Syntypes, sex?; article not seen; not located. Synonymy: Ratzeburg 1837: 178.
References: (**ds**) Lacordaire 1866: 359; Sturm 1826: 156; Villa & Villa 1833: 26. (**tx**) Herbst 1793: 117; Illiger 1907: 321; Lacordaire 1866: 359; Panzer 1795: 61, 1795a: 289; Ratzeburg 1837: 178. (**ms**) Hartig 1834: 412, 413.

longulus Kolenati 1846: 38. Syntypes, sex?; Shamlogh, territorii Airum, montis Kaepes-Dagh,

provinciae Transcaucasicae Elisabethopol; not located. Synonymy: Stark 1952: 195.

References: (**hb**) Stark 1952: 95. (**ds**) Arnoldi et al. 1955: 671; Hagedorn 1910d: 13; Heyden, Reitter, & Weisse 1883: 181, 1891: 668, 1906: 710; Kleine 1912b: 168, 1934a: 128; Kolenati 1846: 38; Lacordaire 1866: 359; Postner 1974: 401; Reitter 1894a: 59; Stark 1952: 195; Stein & Weise 1877: 163. (**tx**) Gemminger & Harold 1872: 2671; Hagedorn 1910a: 55; Kolenati 1846: 38; Lacordaire 1866: 359; Postner 1974: 401; Reitter 1894a: 59, 1913a: 49; Schedl 1934f: 1635; Stark 1952: 195.

***micklitzi* Wachtl** 1881b: 227. Syntypes, sex?; Dalmatia (propo Ragusam et Lesina insula); not located.

Figures: Balachowsky 1949a: 140, Grune 1979: 56; Questienne 1979: 117; Wachtl 1881b:pl. 6.

Distribution: Africa (Algeria/ Egypt/ Libya/ Morocco/ Tunsia), Asia (Israel/ Turkey), Europe (France/ Germany/ Greece/ Hungary/ Italy/ Sardinia/ Sicily/ Caucusus in W USSR/ Yugoslavia).

Hosts: *Pinus halepensis, P.* spp.

References: (**bv**) Grune 1979: 57; Mendel 1988a; Mendel, Madar, & Golan 1985. (**cn**) Grandi 1951; Questienne 1979: 117; Vanderberg 1975: 212; Wachtl 1901: 381. (**ec**) Fry 1989: 16; Halperin & Holzschuh 1984: 25; Mendel 1986c: 115; Novak 1952: 413. (**hb**) Grandi 1951; Halperin & Holzschuh 1984: 25; Henschel 1895a: 136; Mendel, Madar, & Golan 1985; Peyerimhoff 1919: 252; Questienne 1979: 117; Wachtl 1901: 381. (**ds**) Barthe 1856; Calwer 1893; Chararas 1962c: 376; Eggers 1912f; Escalera 1919; Fairmaire 1883: 114; Fauvel 1885; Friedrichs 1919; Ganglbauer 1904; Grune 1979: 57; Hagedorn 1910d: 13; Halperin & Holzschuh 1984: 25; Henschel 1895a: 136; Heyden, Reitter, & Weise 1883: 181, 1891: 668, 1906: 710; Horion 1935; Joffre 1960; Kleine 1908c: 182, 1912b: 168, 1914a: 16, 1934a: 128; Langhoffer 1915c: 157; Luigioni 1929: 994; Normand 1937: 268; Novak, P. 1952: 413, 1964; Peyerimhoff 1919: 252, 1933b: 367; Pfeffer 1947d: 128; Pittioni 1943: 176; Postner 1974: 401; Reitter 1894a: 59, 1916: 282, 349; Sainte-Claire & Mequignon 1938: 444; Schaufuss 1915: 1224; Schedl 1938d: 450, 1964j, 1967c: 69, 1969g: 289, 1972n: 348, 1978e: 36, 1979i: 289; Schilsky 1909: 187; Tredl 1907: 10. (**tx**) Balachowsky 1949a: 138–140; Csiki 1908; Eggers 1912f: 29, 1914: 186; Eichhoff 1883a: 101, 123; Fauvel 1885, 1889; Grune 1979: 56, 57; Hagedorn 1910a: 55; Henschel 1895a: 136; Luigioni 1924: 994; Portevin 1935: 318; Questienne 1979: 117; Postner 1974: 401; Reitter 1894a: 59, 1913a: 49, 1916: 282, 349; Schedl 1934f: 1635; Wachtl 1881a: 299, 1881b: 227.

Genus *Tomicus* Latreille

TOMICUS LATREILLE 1802/3: 203. Type-species: *Hylesinus piniperda* Fabricius =*Dermestes piniperda* Linnaeus, monobasic.

Blastophagus Eichhoff 1864b: 25. Type-species: *Dermestes piniperda* Linnaeus, subsequent designation by Lacordaire 1866: 360, preoccupied by Gravenhorst 1827: 23. Synonymy: Wood 1961e: 319.

References: (**cn**) Aitkin 1945: 273–364; Gornas 1962: 38–42. (**ds**) Scheerpeltz & Winkler 1930: 256; Tragardh 1930: 468–480; Trappen 1935: 141. (**tx**) Balachowsky 1949a: 133–137; Chapuis 1869: 39, 1873: 247; China 1960: 69–72; Dammerman 1950: 164; Eggers 1929f: 103–104; Eichhoff 1864b: 25, 1878d: 399–400; ICZN 1963b: 276, 669; Kostin 1973: 246; Krivolutskaya 1958: 115; Lacordaire 1866: 360; LeConte 1876: 386; Lekander 1971: 271–276; Murayama 1963: 34–43; Reitter 1913a: 47; Saalas 1914: 71–77; Schedl 1934f: 1635, 1946b: 50–58, 1951j: 96, 1952a: 448; Schimitschek 1937: 40–45; Sierpinski 1959: 37–48; Spessivtsev 1931: 86; Stark 1952: 187; Wood, S. L. 1961e: 319–321, 1963: 1–3.

Myelophilus Eichhoff 1878d: 400. Type-species: *Dermestes piniperda* Linnaeus, automatic. Synonymy: Wood 1961e: 319.

References: (**cn**) Andreeva & Gorjaceva 1960: 102–107; Brammanis 1928: 1–20; Butovitsch 1947: 9; Frohlich 1927: 101; Koehler & Zdanowicz 1954: 19–59; MacDougall 1920: 1–42; Pfeffer 1933: 3–54; Prozorov 1929: 17; Ritzema 1920: 28–60, 113–115; Schwerdtfeger 1944: 80–81; Sedlaczek 1921: 334–339; Trappen 1935: 341. (**hb**) Gornostaev 1917: 308–315; Nuorteva 1962: 171–173. (**ds**) Galoux 1947: 12; Hanson, H. S. 1937: 185–236, 1940: 483–536; Kangas 1932: 156–160, 1934: 9–12; Karaman 1971: 78; Kontkanen 1929: 68–77; Munro 1919: 1–35, 1926: 1–27, 1928: 31–39, 1929: 61–65; Tragardh 1920: 1–6; Viedma 1964: 61–63. (**tx**) Balachowsky 1949a: 136; China 1960: 69–72; Dammerman 1950a: 13–14, 1950b: 154; Eggers 1929f: 103–104; Eichhoff 1978d: 399–400; ICZN 1963b: 276; Reitter 1913a: 47; Schedl 1951j: 96; Schimitschek 1937: 44–45; Spessivtsev 1922: 465; Swan 1942: 89; Wood, S. L. 1961e: 319–321, 1963: 1–3.

Keys: Balachowsky 1949a: 135, Murayama 1963b: 35, Schedl 1946b: 52.

Notes: (3) The name *Tomicus* was properly validated (Latrielle 1802/3: 203), but an unfortunate error in identification by Latrielle caused *piniperda* to be associated with the generic name *Ips* until the error was discovered in the late 19th century. Misuse of the name persisted until corrected by Wood 1961e and ICZN 1963b (China 1963a).

References: (**ay**) Nobuchi 1969a: 50; Schonherr 1970b. (**bv**) Barr, B. A. 1969: 643; Kangas 1981; Schonherr 1970b; Vite 1976. (**cn**) Andreeva & Gorjaceva 1960; Kangas 1966b, 1981; Torrent & Romanyk 1967: 84. (**ec**) Lindquist 1970a: 980. (**hb**) Chararas 1960a: 35; Wood, S. L. 1986a: 42. (**ds**) Kangas 1964c; Wood, S. L. 1986a: 42. (**tx**) China 1963a; Choo, Woo, & Nobuchi 1988b; Hopkins 1915c: 221; ICZN 1963b: 276; Kalshoven 1952: 180; Latrielle 1802/3: 203, 1807: 276; Pfeffer 1989a: 35; Schedl 1981b: 52; Wiebes 1962a; Wood, S. L. 1961e: 319–321, 1963: 1–117, 1982b: 150, 1986a: 42.

***brevipilosus* (Eggers)** 1929f: 103 (*Blastophagus*). Syntypes 2, sex?; [Fukien] China; Eggers Collection, in NHMW, Wien.

Figures: Nobuchi 1966:pl. 1.

Distribution: Asia (Fujian in China/ Assam in India/ Japan/ Korea).

Hosts: *Pinus insularis, P. koraiensis, P. parviflora.*

Notes: (1) Schedl 1979c: 46 (citation of holotype invalid). (3) Schedl 1941a: 42 (cited *fukiensis* Eggers, nomen nudum, synonymy by Murayama 1963b: 37).

References: (**ay**) Sasakawa & Yoshiyasu 1983. (**ds**) Choo 1983: 51; Choo & Woo 1985: 164; Choo, Woo, & Park 1983: 175; Nobuchi 1966d: 14, 1985c: 5. (**tx**) Choo 1983: 51; Eggers 1929f: 103–104, 1941b: 222; Murayama 1954b: 158; Nobuchi 1966d: 14, pl. 1; Schedl 1934f: 1635, 1941a: 42, 1946b: 52–54, 1979c: 46.

khasianus Murayama 1959b: 75 (*Blastophagus*). Holotype, sex?; Shillong, Assam, India; USNM, Washington. Synonymy: Wood 1992b: 85.

References: (**cn**) Browne 1968: 690; Ishikura 1966. (**hb**) Browne 1968: 690. (**ds**) Beeson 1961: 285; Browne 1968: 690; Ishikura 1966; Kleine 1934a: 128; Murayama 1957a: 36. (**tx**) Dammerman 1950: 154–155; Murayama 1959b: 75; Schedl 1946b: 55; Wood 1985: 270, 1992b: 85.

multisetosus Murayama 1963b: 37 (*Blastophagus*). Holotype ♂; Mt. Manza, Gumma pref., Japan; Murayama Collection in USNM, Washington. Synonymy: Wood 1992b: 85.

References: (**ds**) Nobuchi 1985c: 5. (**tx**) Murayama 1963b: 37; Wood, S. L. 1992b: 85.

***destruens* (Wollaston)** 1865: 45 (*Hylurgus*). Syntypes, sex?; Madeira; BMNH, London.

Figures: Lekander 1971: 273.

Distribution: Africa (Madeira Islands), Asia (Cyprus/ Israel/ Turkey), Europe (S France/ Italy/ Mallorca Island/ Portugal/ Spain).

Hosts: *Pinus* spp.

References: (**ay**) Chararas 1975. (**bv**) Carle 1974c, 1978; Carle, Descoins, & Gallois 1978; Mendel, Madar, & Golan 1985. (**cn**) Braquehais 1973; Carle 1974a, 1975c; Halperin, Mendel, & Golan 1982; Mendel 1987; Schvester 1986; Souphieff & Scherbinovskaja 1937: 102. (**ec**) Carle 1971, 1974a, 1975c; Chararas 1971; Fry 1989: 18; Halperin & Holzschuh 1984: 28; Kaya 1984; Laumond & Carle 1971; Laumond & Ritter 1971; Mendel 1985, 1986c: 115, 1986d: 130; Mendel & Halperin 1981; Poinar 1975: 150; (**hb**) Carle 1971; Halperin & Holzschuh 1984: 28; Mendel 1987; Mendel, Madar, & Golan 1985. (**ds**) Hagedorn 1910d: 13; Halperin & Holzschuh 1984: 28; Kleine 1912b: 169, 1914a: 22; Souphieff & Scherbinovskaja 1937: 102; Wollaston 1854: 303, 1857: 99. (**tx**) Balachowsky 1949a: 136; Eggers 1929e: 52–53; Gemminger & Harold 1872: 2671; Hagedorn 1910a: 55; Lekander 1971b: 271; Schedl 1934f: 1635; Wollaston 1854: 303, 1857: 99, 1965: 45, 250.

***minor* (Hartig)** 1834: 443 (*Dendroctonus*). Syntypes, sex?; description not seen; not located.

Figures: Alkan 1946: 140, Bakke 1960: 300, Balachowsky 1949a: 104, Barbey 1925: 248, Chararas 1962c: 234, Grune 1979: 54, Li & Zhou 1980: 188; Nobuchi 1966d:pl. 1, Schimitschek 1944: 164 (adult), Stark 1952: 189 (adult).

Distribution: Asia ("Manchuria," Henan, Jiangxi, Shanxi, Sichuan, Yunnan in China/ Japan/ Korea/ Taiwan/ Turkey/ Sakhalin Island, E USSR), Europe (Austria/ Belgium/ Bulgaria/ Corsica/ Cyprus/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Hungary/ Italy/ Luxemburg/ Netherlands/ Norway/ Poland/ Romania/ Spain/ Sweden/ Switzerland/ Turkey/ W USSR/ Yugoslavia).

Hosts: *Pinus* spp., rarely *Picea* spp., *Abies* spp.

Notes: (3) Krausse 1920: 169, 172–173 (named as aberrations var. *flavipennis,* var. *flavus,* var. *fuscipennis,* no status). Mader 1937: 316 (aberration *nigripennis,* no status).

References: (**ay**) Chararas 1975; Escherich 1923b: 429, 479, 532; Feytaud 1950a; Francke-Grosmann 1956b, 1959, 1966c; Fuchs 1912a; Gurando & Tsarichkova 1974; Kleine 1920: 217; Leisewitz 1906: 84; Marcu 1933a: 34; Nunberg 1928a: 140; Ritchie 1917: 213; Scherb 1971; Schwerdtfeger 1929: 361; Sedlaczek 1902b: 244, 1907: 82; Wichmann 1912: 9–10. (**bv**) Annila 1971a: 12; Annila & Petaisto 1978; Barr, B. A. 1969: 643; Bergman 1971; Boocock 1959c; Chararas & Deschamps 1962; Eidmann 1965b,1974b; Ellefsen 1980c; Fuhrer & Kerck 1978a; Gidaszewski 1974; Grune 1979: 55; Kangas, Pertunnen, & Oksanen 1970,1971; Kevdina 1897: 108; Langstrom 1980a, 1983a, 1984; Langstrom & Hellqvist 1985; Lanier et al. 1984; Lanne et al. 1987; Loyttyniemi & Hiltunen 1976; Loyttyniemi, Heliovaara, & Repo 1988b; Meixner 1937: 1214, 1217; Nuorteva 1956c: 58; Prell 1926: 68, 1930c: 626, 1931: 365; Raisanen et al. 1986; Rozhkov 1970: 136; Schimitschek 1948h: 14; Sierpinski 1959: 38; Soderkvist 1970; Wichmann 1912a: 9,

1953a: 105, 1967. (**cn**) Acatay 1943: 3, 1943b: 64; Agafonov & Kuklin 1979; Andersson & Lekander 1966: 681; Androic 1966: 48; Anonymous 1921q: 7, 1980g; Ass & Funtikow 1941; Aullo 1923: 8–11; Badoux 1921: 163–173; Bakke 1960: 299, 1968: 441–602; Barbey 1922a, 1925: 227, 1927: 107; Berezina & Kurenzov 1935: 1–52; Bergman 1971; Besceli 1963: 50–57; Bevan 1962a: 1–8; Blanchere & Robert 1889; Boocock 1959b, 1959c; Borcea 1924: 211–260; Brammanis 1940: 257–340; Brandt 1925: 166–171; Braun 1867; Browne 1968b: 691; Butovitsch 1960b, 1977; Butovitsch & Spaak 1939: 1–120; Capek 1966; Capek et al. 1957; Chorbadzhievo 1926: 175–241, 1929; Christiansen 1970; Crooke 1955b; Dehlen & Langstrom 1977; Delfin 1980; Donaubauer 1960; Duda 1974; Eckstein 1898a, 1915, 1921, 1926: 572, 1939a: 33–42, 81–92; Egorov 1958: 1492; Ehnstrom 1985; Eidmann 1964, 1965c, 1970a, 1973; Eidmann & Klingstrom 1976: 246; Escherich 1917: 97–115, 1923b: 429, 479, 532, 1929: 69–90, 1932a; Esterberg 1959; Falck 1916: 164; Fedorov 1930: 225–229; Feytaud 1927: 113–121, 140, 144, 1946, 1950a: 18–26; Findlay 1959: 1–7, 167–174; Fystro & Bakke 1962; Gabler 1953b, 1955; Galoux 1948d; Georgescu et al. 1957: 357, 472; Geschwind 1919: 111, 199; Gidaszewski 1974; Godberson 1925; Gois 1944; Gradojevic 1938; Grandi 1951; Green 1923: 208–224; Golovyanko 1926: 1–87; Gyorfi 1959; Hagedorn 1910c; Haget 1949; Hanson, H. S. 1937: 185–236, 1940a: 483–536, 1940c: 247–251, 1943, 1950; Hartig 1861: 324, 330, 1877: 189, 196; Hasek 1961; Heqvist 1965; Hess 1880, 1898: 391, 1907: 271; Hess & Beck 1914: 256, 1927: 314; Hilden 1922; Hopkins 1894c, 1894d, 1899c: 311; Hubault 1945; Ilinskii 1928: 33–94, 523–542; Inouye 1949a: 8, 88, 1949b, 1949c; Jablokoff 1953: 327; Jahn 1952a: 98, 1960b; Joly 1949b: 254, 1976; Judeich & Nitsche 1895: 447, 463; Kailidis 1966a: 56; Kailidis & Markalas 1988; Kalandra 1948a; Kamuishnuii 1925: 14–16; Kangas 1934d: 1–68, 1937, 1958d: 162; Kaplan & Mokrzecki 1988; Karaman 1964: 440–443; Kauschinger 1893: 149; Keller 1903b: 53, 1923: 41–45; Kholodkovskii 1912: 285, 299; Klimesch 1931: 40; Koch 1913: 10, 101, 1913: 95; Koehler 1958: 30; Konig, D. 1923: 1065; Koppen 1882: 246; Kozikowsky 1929: 255; Kratochvil 1941: 23–30; L. 1896: 557; Laidlaw 1941: 32–37; Lang 1896: 557; Langstrom 1980a; Lauenstein 1966; Legowski 1987; Lekander 1954b: 7, 1955b: 17; Lekander & Rennerfelt 1955: 10; Lekander, M. 1951: 23; Li & Zhou 1988; Listov 1971; Lohrenz 1907: 38; Lonshchakov & Lure 1960; Loyttyniemi 1978; Loyttyniemi et al. 1979; Lozovoi 1949a: 245, 1961: 91–113; Lunden 1980; MacDougall 1916: 1–33, 1917: 1–38; Marker-Kohlfurt 1896: 84; Masnina 1957: 15–17; Mathiesen 1951: 205, 1952: 284; Mathiesen-Kaarik 1953: 6; Megalov & Bazhenov 1927: 1–29; Methner 1931: 422; Meves 1888b: 157, 1896: 153; Michalski & Schmidt 1957: 55–62; Mokrzecki 1928: 272, 1933: 287; Mostovsky 1923: 287–288; Mozolevskaya 1984,1985; Muller 1891: 52; Murayama 1954a: 12, 25; Nestertschuk 1930: 176; Niemeyer 1974: 288, 1975: 150; Niemeyer & Thalenhorst 1974; Nosek 1952b: 98; Novak, V., Hrozinka, & Stary 1976: 56; Nusslin 1913: 205; Oda, Kato, & Nobuchi 1964; Olofsson 1980; Ossowski 1941: 75–79, 1942: 252; P. 1879: 211; Panshin 1963: 108–111; Pawlowitsch 1883: 11; Persson 1980; Pfeffer 1933: 43, 1940c: 273; Pierce, W. D. 1917: 69; Polozencev 1926: 1–5; Polozencev, Rubcova, & Naumenko 1968; Polozencev & Zolotov 1969; Polubojarinoff 1929: 45–52; Pomocnicze 1876: 156; Prosoroff 1929: 17; R. P. 1948: 193; Ratzeburg 1871c: 81; Reisch 1960; Reisseneger 1889: 299; Rettich 1928; Rhumbler 1922: 280, 1927: 291; Ritchie 1917: 213–234; Romanyk 1963a: 26; Ronge 1971; Rossler 1926: 239; Rudnev 1926: 32–69, 1965b, 1966; Ryvkin 1951: 80–81; Saalas 1929: 178, 1949: 341, 361; Sargos 1947: 7; Schenk 1952: 440; Schevyrew 1905b: 110; Schimitschek 1935b: 146, 1936b: 74, 1937c: 48, 1944: 163, 1947g: 191, 1948h: 14, 1949b: 178, 1950: 46, 1951a: 101, 1952c: 59, 1955a: 29, 1955b: 102, 1955c: 77, 1961a: 154; Schmidt 1881: 41; Schneeberg 1925: 495; Schuster 1918: 102; Schwappach et al. 1904: 79, 1929: 186; Schwerdtfeger 1944a: 171, 176, 1950b: 49, 1968a, 1981: 189; Sedlaczek 1921: 339, 1936: 200; Shiraki 1952; Shirskaya 1961: 1–165; Sierpinski 1962, 1966: 58, 1969b: 109–127, 1971b; Sinreich 1958: 197, 1962; Sitowski 1930: 1–13; Slander 1948: 10; Soderkvist 1970; Stefanov 1946: 1; Stehli 1936: 128; Sureyya 1931: 1–32; Sylven 1916: 153–161, 1920: 1–19; Templin 1973: 104; Thaler 1902: 278; Titova 1966; Tolskii 1927; Tragardh 1917: 28, 1927c: 65, 70, 1938a: 12, 1941: 115; Tragardh & Butovitsch 1933a: 235; Trofimov 1979; Troshanin 1932: 552–556; Tubeuf 1936: 501; Tuovinen 1957: 1–4; Vajda 1952: 114; Vietinghoft 1951: 453; Villasenor 1966; Vorontzov 1910: 1–5, 1912: 7–8, 1968; Voute 1942: 12, 617; Wachtl 1883b: 319, 1901: 381; Wadde-Love & Webb 1948: 109–110; Wardle 1929: 323; Weber, H. 1926: 573; Wei 1960: 63–69; Wichmann 1927b: 352, 1933: 129; Wohlmann 1936: 41; Wolff 1920: 233, 1921: 227–247, 1924b: 167; Wolff & Krausse 1922: 83; Wulker 1924: 1–20; Yamane 1981: 470; Yano 1919: 470; Yanovskii & Korotkov 1984; Zarco 1946a: 252; Zhang et al. 1958: 27; Zhuravlev & Osmolovskii 1949: 51, 52; Zivojinovic 1963: 449; Zolk 1935: 614–640, 1937: 147–172. (**ec**) Acatay 1943b: 64; Agafonov & Kuklin 1979; Annila & Petaisto 1978; Apfelbeck 1916b; Ass & Funtikow 1941; Bakke 1960: 299, 1968a; Balazy et al. 1977; Barbey 1927; Batra & Michie 1963: 474; Blinova-Lazarevskaya 1974; Bogdanova 1988; Boucek 1957b: 79, 1958; Brammanis 1940; Butovitsch

1977; Bychawska 1983; Cameron 1940: 46–52; Chararas 1957d, 1959a, 1959e, 1975; Cooreman 1963: 45; Eidmann 1965c,1974b; Elliot & Morley 1907; Francke-Grosmann 1931, 1952a, 1956b, 1959, 1966c; Fuchs 1937; Fuhrer & Kerck 1978a; Galoux 1947b, 1947c; Gauss 1954a: 423; Gidaszewski 1974; Graham 1969: 877; Grossmann 1931a; Gurando 1973, 1974, 1977, 1978; Gurando & Tsarichkova 1974; Gyorfi 1941b, 1943: 84; Haeselbarth 1967; Heliovaara & Lilja 1989; Henningson & Lundstrom 1974; Heqvist 1957a, 1957b: 42, 1963, 1965: 23; Hirschmann & Wisniewski 1982, 1983; Hirschmann & Zirngiebl-Nicol 1961; Inouye et al. 1955: 70; Jamnicky 1957b: 13, 18, 1957c, 1961b; Joly 1949a: 7; Kaarik 1973; Kakuliya 1963a; Kakuliya & Devdariani 1965; Kangas 1932: 12, 1937, 1958c: 93; Kangas, Pertunnen, & Oksanen 1971; Karpinski 1932a: 100; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1977b, 1977c, 1978, 1980a, 1980b, 1983; Kleine 1908c: 182, 1909a: 45, 76, 1910: 349, 1944: 69; Kobulajiv & Kalandra 1954: 30; Kostenko 1929; Kostin 1964: 103; Koyama 1963; Laidlaw 1941b: 32; Langstrom 1980a, 1983b, 1984; Langstrom & Helqvist 1985; Li & Zhou 1988: 69; Loyttyniemi & Hiltunen 1976; Lozovoi 1948a: 69, 1949a: 245; Lukasheva 1986; Lundberg 1984; Majewski, T. & Wisniewski 1978a: 9; Masutti 1959: 268, 294; Mathiesen 1951: 205, 1952: 284; Mathiesen-Kaarik 1953: 6, 1960c; Meyer 1934: 611; Michalski 1982; Michalski & Ratajczak 1989; Niemeyer & Thalenhorst 1974; Nikitiuk 1951: 59, 1952: 41; Nosek 1952b: 98; Nunberg 1930: 202; Nunberg & Wiackowski 1958: 130; Nuorteva 1956a: 17, 1957b: 52, 1967a, 1968a, 1970, 1971: 69; Nusslin 1927: 291, 300; Okolow 1963; Olofsson 1980; Palmen 1944: 60, 1946: 194; Panshin 1963; Perris 1852: 497, 1853: 571; Pettersen 1976b; Pfeffer 1923a: 330, 1928b: 4, 1933: 43, 1943b: 179, 1950: 1; Pishchik 1980a; Poinar 1975: 150; Prell 1926: 68; Ratzeburg 1869a: 92; Rennerfelt 1951: 122; Rondani 1873: 151; Roubal 1934a: 86; Ruhm 1969; Saalas 1917a: 18, 1930: 118, 1949: 341, 361; Schedl 1936f: 152, 1958d: 185, 192; Scheerpeltz 1935: 15; Scheerpeltz & Hofler 1948: 281; Schimitschek 1930a: 281, 1936a: 560, 1941b: 59, 1946: 9, 1950: 46, 1955a: 29, 1964e; Schremmer 1956: 217; Schuster 1918: 102; Schwerdtfeger 1929: 361, 1944a: 171, 176, 1950b: 49; Sedlaczek 1908: 52, 1935a: 163; Sitowski 1930: 6; Stark 1925b: 80; Stefanov 1949a: 97; Sundfor 1979; Sylven 1913: 144, 1916a: 157; Szczepanski 1960a: 409; Thompson, W. R. 1943: 80; Thompson, W. R. & Simmonds 1964: 30, 1965: 19; Titova 1966; Tragardh 1925a: 170, 1927a: 198, 1928: 773, 1941: 115; Vaartaja 1947: 44; Vietinghoft 1924: 327; Vitzthum 1923: 101, 1926: 427; Wichmann 1933: 129–130, 1952b: 23, 1953a: 105, 1954b: 63, 1954d: 438, 1955a: 94, 1967; Wisniewski 1979b; Wudker 1924: 11; Yanovskii 1977b; Yanovskii & Korotkov 1984; Yasumatsu & Watanabe 1965: 69; Zarco 1946: 463–468; Zinovjev 1957: 332. (**hb**) Acatay 1943a: 64; Adelung 1905; Agafonov & Kuklin 1979; Alkan 1946: 140; Altum 1879c, 1881c: 260, 1883c, 1884, 1885b, 1889a, 1889c, 1890b, 1890c; Annila & Petaisto 1978; Anonymous 1920: 62, 1921q: 7, 1972b; Apfelbeck 1916b, 1917; Arndt 1920; Awerkiew 1941; Bach 1864; Bakke 1960a: 299, 1968a; Balachowsky 1963a: 1251; Barbey 1901: 10, 19, 51, 1913, 1925: 227; Bargmann 1897a, 1899b, 1900; Beeson 1940a: 483–485, 1940b: 248; Beffa 1949, 1961; Bejer-Petersen 1957; Bergman 1971; Besceli 1963; Bevan 1962a; Bierpinski 1959: 40; Binzer 1879, 1881b; Blanchere & Robert 1889; Bokowsky 1930; Boocock 1959c; Borcea 1924; Borodajewsky 1912: 497–499, 1914: 217–218, 1065–1067, 1915: 1222–1247, 1916: 1223–1244; Brandes 1899, 1900, 1901; Brandt 1919, 1925, 1929a, 1948; Browne 1968: 691; Budge 1949; Budkov 1897; Bukowsky 1930; Byers 1984a; Cecconi 1906, 1924; Chararas 1960a: 36; Charvat 1950; Chittenden 1890; Chorbadzhievo 1929; Demakov 1988; Dombrowsky 1887; Drugescu 1980; Duda 1974; Eckstein 1889, 1897, 1913, 1915, 1921, 1926: 573, 1928, 1936, 1939a; Eichhoff 1881a: 37, 115, 1892b: 99; Eidmann 1965b, 1974b; Eidmann & Klingstrom 1976: 246; Ellefsen 1980c; Elton et al. 1964; Escherich 1923b: 429, 479, 532; Everts 1900, 1902, 1903: 746; Falck 1916: 164; Feytaud 1927, 1946, 1950a; Fisher 1931; Flohrer 1948; Fuchs 1904a, 1907: 54; Gabler 1955; Gidaszewski 1974; Gigglberger 1868; Gillanders 1908; Gois 1944; Gornostaev 1916: 310; Grandi 1951; Greze 1926: 22–26; Gronberg 1914; Gyorfi 1957; Hagedorn 1903a, 1910c; Hanson, H. S. 1940b; Hartig 1861: 324, 330, 1877: 189, 196; Henschel 1876a: 98, 1895a: 138; Hess 1880, 1898: 391, 1907: 271; Hess & Beck 1914: 256, 1927: 314; Holmgren 1867: 116, 125; Hopkins 1899c: 311; Hufnagl 1887: 5012, 1889; Hufnagl & Puzyr 1951: 106; Inouye et al. 1955: 70; Jakobjuk 1927: 225–227, 1928: 102–103; Jamnicky 1961b; Joly 1949a: 7, 1976a, 1976b; Judeich & Nitsche 1895: 447, 463; Kalandadze 1927; Kangas 1951: 225; Karpinski 1933b: 24; Karpinski & Strawinski 1948: 154; Kauschinger 1883: 109, 1893: 149; Keller 1907a: 179, 1907b: 361, 1913: 241; Kholodkovskii 1889: 277, 1912: 285, 299; Kleine 1908a: 98, 1911: 158; Knoche 1900: 389, 1904: 5, 1905: 354, 1906: 266, 1907b: 476; Knotek 1894a: 553, 1897: 150, 1898b: 325; Kostin 1960: 131; Kozikowsky & Nunberg 1925: 135; L. 1896: 557; Lagerberg 1911: 382; Lang 1893: 136; Langstrom 1979b, 1983a, 1983b; Langstrom & Hellqvist 1985; Lekander 1954b: 17, 1959a: 84; Lengerken 1939: 37, 1954: 76; Lohrenz 1907: 38; Loos 1896: 32; Louzil 1961: 41; Lunardoni & Leonardi 1889:

429; Lunden 1980; Madon 1930: 99; Maslov & Demakov 1982; Massutti 1959: 268, 294, 1964; Milani 1894: 140–144; Mozolevskaya 1985; Munro 1916b: 115, 1926: 51; Naegeli 1928: 68; Niisima 1908b: 18; Nordlinger 1856: 35, 1868: 262; Novak, V., Hrozinka, & Stary 1976: 56; Nunberg 1929: 99, 1929c: 118, 1946a: 7; Nuorteva 1956c: 58, 1962a: 45, 1967a, 1968a, 1970; Nusslin 1898: 277, 1904: 14, 1905a: 88, 1906a: 56, 1913: 205, 1927: 291, 300; Ossowski 1941: 75, 1942: 252; Paulian 1949a: 988; Pauly 1894: 379; Perris 1852: 497, 1876b: 173; Petrenko 1966; Pfeffer 1941b: 2, 1989a: 36; Pomerantzev 1907: 177–192; Postner 1974: 398; Prell 1930c: 626, 1931: 365; Pruffer 1948: 1; Ratzeburg 1837: 135, 177, 1839: 165, 217, 1871c: 81; Rhumbler 1922: 280, 1927: 291; Rimski-Korsakov et al. 1949: 271; Ritchie 1915: 352, 1917: 213; Romanyk 1963a: 26,27; Rozhkov 1970: 136; Rudnev & Kozak 1974a, 1974b; Rupertsberger 1879: 231, 1880: 226; Saalas 1913a: 67, 78, 1949: 341, 461; Samal 1928: 141; Schenk 1952: 440; Schevyrew 1905b: 1100; Schimitschek 1930a: 281, 1944: 163, 1946: 9, 1955a: 29; Schmidt 1881: 4; Schroder 1896: 357; Schwappach et al. 1929: 186; Schwerdtfeger 1929: 361, 1944a: 171, 176, 1981: 189; Sedlaczek 1921: 339, 1935a: 163; Seitner 1911: 99; Severin 1901: 754, 755; Sierpinski 1959: 38, 1962: 211–223; Soderkvist 1970; Spessivtsev 1913a: 60, 1925: 78–81, 205–212, 300–301, 1925d: 105, 1927: 15–19, 1928a: 232, 377–378, 1931: 339–343, 1938: 162; Stark 1926a: 164–167, 334, 1952: 188; Stefanov 1949a: 97; Stehli 1936: 128; Taschenberg 1880: 208; Tragardh 1911: 29, 1914: 83, 1917: 1–28, 1918: 1–28, 1919: 67–114, 154–174, 1924: 311–338, 1927: 191–216, 1927c: 65, 70, 1929: 773–780, 1930c: 469, 1931: 55, 1935: 1–268, 1938: 10–14, 1939b: 158, 186; Trofimov & Lipatkin 1986; Tschorbadjiev 1929: 162; Virkki 1960: 316; Voute 1942: 617; Wachtl 1901: 381; Weber, H. 1926: 573; Wei 1959: 237; Wichmann 1927b: 352; Wissman 1846: 24; Wolff 1920: 233, 1927: 75; Wolff & Krausse 1922: 83; Yakubyuk 1959: 40; Zinovjev 1957: 332. (**ds**) Acloque 1896; Ammann & Knabl 1923; Andersch 1851; Androic 1966: 48; Anonymous 1980g; Arru, Covassi, & de Bellis 1966: 33; Audras & Schaefer 1957; Bakke 1960: 299; Barbey 1922a, 1926; Barthe 1896; Bau 1888; Bedel 1888b: 392, 409; Beffa 1949; Bejer-Petersen & Jorum 1977; Bistrom & Vaisanen 1988: 42; Blanchere & Robert 1889; Blandford 1894c; Borcea 1924; Borchert 1951; Brakman 1966a: 51, 1966b: 204; Brancsik 1871; Browne 1968: 691; Bucking 1932; Budkov 1897; Bukowsky 1930; Buresh & Lazarov 1956; Butovitsch 1963; Butovitsch & Heqvist 1947; Calwer 1893; Capek et al. 1957; Cecconi 1897, 1906; Champion 1894; Chapuis 1869: 33, 1873: 241; Chapuis & Eichhoff 1875; Charvat 1950; Chittenden 1890; Cho 1955, 1957; Choo 1983: 52; Choo & Woo 1985: 164; Chorbadzhievo 1924d, 1929; Chrystal 1937; Eder 1934; Eggers 1904; Eidmann 1974b; Endrodi 1958b; Ericson & Sandin 1893; Escalera 1919; Escherich 1923b: 429, 479, 532, 1929, 1932b; Esterberg 1928, 1959; Everts 1900, 1922: 639, 1925; Fauvel 1885; Favre 1890; Fedorov 1930; Feytaud 1927; Florov 1949: 65; Forster 1849: 440; Fowler 1882a, 1891; Fricken 1889: 277; Fuchs 1904a, 1905a, 1907: 54; Gabler 1949b; Gaubil 1849: 127; Georghiou 1977: 73; Gornostaev 1917: 308–315; Gozis 1875: 79; Gredler 1866: 369; Grill 1895: 308; Grune 1979: 55; Gussmann 1919: 79; Gyorfi 1941b; Hagedorn 1903a, 1910d: 13; Hansen, V. 1939, 1956, 1964: 459; Heinemann 1908a; Hellen 1947; Helliesen 1916: 83; Hennig 1954: 261; Henschel 1895a: 138; Heyden 1876: 297,1898: 77; Heyden, Reitter, & Weise 1883: 181, 1891: 668, 1906: 709; Hickin 1963; Holmgren 1867: 116, 125; Horion 1949, 1951; Inouye 1949b; Jablokoff 1953: 327; Jacentkovsky 1933: 271, 1939: 76; Jazentkovsky 1912: 287, 1922: 7–9, 1924: 278–296; Joly 1949b: 254, 1976; Judeich & Nitsche 1895: 447, 463; Kailidis 1966a: 58, 1985; Kailidis & Markalas 1988; Kaltenbach 1874: 686; Kangas 1934a, 1970: 120–122; Karaman 1964; Karpinski 1925: 216, 1926: 82, 1931: 22, 25, 1932a: 100, 1933b: 24; Karpinski & Strawinski 1948: 154; Kersten 1933: 70, 73; Kestercanek 1881a: 12; Klefbeck & Sjoberg 1960: 228; Kleine 1912a: 161, 262, 264, 267, 1912b: 169, 1913a: 34, 1914b: 249, 255, 1934a: 128; Kloft & Hinks 1945: 217; Knotek 1892a: 33, 1894a: 553, 1898b: 325; Ko 1969: 274; Koppen 1882: 246; Koschitzky 1900: 83; Kostenko 1929; Kraatz 1869: 59; Krausse 1920: 169, 172; Krivolutskaya 1983; Krogerus 1921b: 115; Ku 1964; Kurenzov 1967; Kurir 1947c: 14; Lacordaire 1866: 360; Lang 1894: 136–137; Langhoffer 1915c: 157; Larroche & Torossian 1971; Leclercq 1971; Lekander 1955b: 17; Lentz 1857: 138; Lindemann 1884b: 263; Liro 1916: 126–132; Lokaj 1868: 63; Lomnicki 1886a: 240, 1913b: 147; Lucht 1987: 276; Luigioni 1929: 993; Lunardoni & Leonardi 1899: 429; Lundberg 1978a, 1979: 31; Lundblad 1950c: 114; Malazgirt 1966: 64; Marchant & Borden 1976; Matthews & Fowler 1883: 42; Mequignon 1936: 25; Michalski 1957: 163; Mirzoian 1950: 140; Mokrzecki 1928: 272; Moragues 1889: 32; Munro 1919: 1–35, 1921: 87, 1926: 1–27; Murayama 1929b: 2, 1929e: 43, 1930a: 1, 1930b: 8, 12, 30, 1934c: 298, 1936a: 124–125, 1939: 137–139, 1940a: 232, 1942a: 54, 1948: 2, 1949a: 11, 1949c: 100, 1951c: 3, 1953a: 6, 1953c: 148, 1954a: 12, 25; Nakane et al. 1963: 382; Negru 1966b: 400; Niisima 1908b: 18; Nobuchi 1966d: 15, 1967: 19, 1985c: 5; Nunberg 1928b: 88, 99, 1954: 33; Nuorteva 1956b: 168, 1971: 65; Nusslin 1898: 277; Ortzen 1886: 279; Pacher 1865: 151; Palm 1962a: 143, 1962b: 183; Palmen 1944: 60, 1946: 194; Perris 1877a: 414; Pfeffer 1924b: 472, 1928b: 4, 1931b: 74, 1935:

159, 1947e: 15, 1984: 277, 1989a: 36; Pierce, W. D. 1917: 69; Pittioni 1943: 174; Pjatnitskii 1930a: 164; Pomerantzev 1907b: 491, X; Poppius 1900: 108; Postner 1974: 398; Prossen 1913: 82; Rapp 1934: 721; Ratzeburg 1837: 135, 177, 1839: 165, 217; Redtenbacher 1858: 827, 1874: 368; Reitter 1869b: 153, 1894a: 53, 1916: 281; Rimski-Korsakov et al. 1949: 271; Rodzianko 1915: 1–15; Roubal 1941: 259; Rozhkov 1970: 136; Rudnev 1965b; Saalas 1913a: 67, 78, 1917a: 18, 1919: 1–415, 1929: 168–180, 1930: 118, 1931: 68; Sahlberg 1900: 105; Sainte-Claire 1914: 469; Sainte-Claire & Mequignon 1938: 444; Schaufuss 1915: 1224; Schaum 1859: 95, 1862: 100; Schedl 1959h: 100, 1971d: 428, 1980a: 8, 1981b: 52; Schilsky 1909: 187; Schimitschek 1951a: 101; Schiodte 1873: 100; Schwerdtfeger 1981: 189; Seidlitz 1872: 391, 1891a: 559, 1891b: 605; Sharp 1871: 74, 84; Sharp & Fowler 1893: 34; Shiraki 1952; Siebke 1875: 282; Sierpinski 1966: 58; Sokanovskii 1936: 74; Sparre-Schneider 1889: 60; Stark 1926a: 334, 1926b: 102, 1926j: 125, 1927a: 15, 1927b: 88, 1931d: 544, 1936e: 142, 1952: 188; Stein 1868: 113; Stein & Weise 1877: 163; Stierlin & Gautard 1871: 291, 1906: 205; Strand 1946: 596; Strauch 1861: 123; Sturm 1843: 229; Thomson 1865: 354, 1868: 218; Tragardh 1914: 83, 1939b: 158, 186; Tschorbadjiev 1929: 162; Tullgren 1916: 104; Villasenor 1966; Wadde-Love & Webb 1948: 109; Westhoff 1882: 237; Wichmann 1927a: 59, 1955a: 94; Wiepkau 1883: 89; Winter, T. G. 1983: 27; Wolff 1927: 75; Yanovskii 1974a, 1977a, 1989: 64; Yanovskii & Dmitrienko 1983; Yanovskii & Tegshzhargal 1984: 407; Zinovjev 1955: 187; Zoufal 1920: 20. (**tx**) Acloque 1896; Alkan 1946: 140; Bach 1854, 1864; Bakke 1960: 300; Balachowsky 1949a: 135–136; Barbey 1901: 10, 19, 51; Bedel 1888b: 392, 409; Beffa 1949, 1961; Bertolini 1872; Blanchere & Robert 1889; Blandford 1894d; Brancsik 1871; Ceballos 1945; Chapuis 1869: 33, 1873: 241; Chapuis & Eichhoff 1875: 197; Chararas 1962c: 234; Charvat 1950; Choo 1983: 52; Chorbadzhievo 1924d; Csiki 1907; Dammerman 1950b; Doebner 1860; Dombrowsky 1887; Duffy 1953; Eggers 1911a: 75–76, 1929f: 103, 1933f: 56, 1940g: 36, 1941b: 222; Eichhoff 1864b: 25, 1878d: 400, 1881a: 37, 115, 1883: 102, 123; Endrodi 1957b; Erichson 1836: 53; Escherich 1923b: 429, 479, 523; Escherich & Escherich 1897; Everts 1903: 746, 1922: 639; Fauvel 1885; Ferrant 1911; Fleischer 1905, 1927; Flohrer 1948; Formanek 1907: 20; Fricken 1889: 277; Fuchs 1912a; Gabler 1949b, 1955; Gemminger & Harold 1872: 2671; Gillanders 1908; Grasse 1949; Grune 1979: 54, 55; Hagedorn 1904e, 1910a: 56; Hansen, V. 1956, 1964: 459; Hartig 1834: 443; Henschel 1876a: 98, 1895a: 138; Hopkins 1909a: 3; Iablokoff-Khnzorian 1961: 105; Jacobson 1895: 523; Jeannel 1949: 988; Joly 1976, 1976b:fig. 136, 247; Judeich & Nitsche 1895: 447, 463; Karpinski & Strawinski 1948: 154; Knotek 1892a: 33; Koch 1913: 10, 95, 101, 1928: 95, 1932: 106; Krausse 1920: 169, 172–173; Kuhnt 1913: 1051; Lacordaire 1866: 360; Letzner 1891: 372; Leunis 1886: 179; Lindemann 1879: 54; Louzil 1961: 105; Lovendal 1889b: 37, 1898: 79; Lucht 1987: 276; Luigioni 1929: 993; Lunardoni & Leonardi 1889: 429; Mader 1937: 316; Meixner 1937: 1217, 1214; Munro 1916b: 115; Murayama 1930b: 8, 1934c: 298, 1936a: 124, 1939: 137–139, 1940a: 232, 1953a: 6, 1954b: 158; Nakane et al. 1963: 382, pl. 191; Negru 1966b: 400; Nobuchi 1966d: 15; Nordlinger 1856: 35; Novak, V. et al. 1976: 56; Nunberg 1928a: 140, 1929c: 118, 1954: 33; Perris 1877a: 414; Pesson & Chararas 1969: 687; Pfeffer 1932b: 14, 1941b: 2, 1947e: 15, 1955a: 126, 1989:pl. 2; Platonoff 1943: 141; Portevin 1935: 319; Postner 1974: 398; Quaschik 1953: 35; Ratzeburg 1837: 135, 177, 1839: 165, 217; Redtenbacher 1849: 364, 1849b: 27, 1858: 827, 1874: 368; Reitter 1894a: 53, 1913a: 48, 1916: 281; Rhumbler 1922: 280, 1927: 291; Ritchie 1915: 352, 1917: 213; Rupertsberger 1879: 231, 1880: 226; Saalas 1913a: 67, 78, 1949: 341, 361; Schedl 1934f: 1635, 1946b: 52, 55, 1980a: 8, 1981: 52; Scherb 1971; Schimitschek 1937c: 48, 1955c: 77; Schlechtendal & Wunsche 1879: 124; Seidlitz 1872: 391, 1891a: 559, 1891b: 605; Sokanovskii 1929: 521–526, 1936: 73–74; Spessivtsev 1913a: 59–60, 1919: 250–251, 1921a: 315–326, 1922a: 465–466, 1925a: 165, 1925b: 9, 1925d: 105, 1928: 221–250, 1931: 37–38; Stark 1952: 188; Stresemann et al. 1989: 352; Taschenberg 1880: 208; Thomson 1865: 354, 1868: 218; Wissman 1846: 24. (**ms**) Boocock 1959b; Brandes 1901; Byers 1984a; DeGryse 1934: 481; Escherich 1932b; Hartig 1834: 412, 413; Heinemann 1908a; Kalandadze 1927; Kangas 1958c: 93; Kozikowsky 1929: 255; Lekander 1959a: 84; Maslov & Demakov 1982; Mastumura 1931; Mozolevskaya 1984; Panshin 1962; Ritter 1929: 553; Schimitschek 1955b: 102; Schwappach 1924: 56; Sedlaczek 1907: 82, 1936: 200; Sinreich 1962; Sundfor 1979; Thalenhorst 1962: 347; Vorontzov 1968; Wei 1959: 237; Wichmann 1961: 33; Yamane 1981: 470.

corsicus Eggers 1911a: 75 (*Myelophilus*). Holotype, sex?; Corsica; Leonhard Collection. Synonymy: Eggers 1933c: 56.

References: (**ay**) Lhoste & Roche 1960. (**cn**) Schimitschek 1938c: 2114, 1939d: 2112, 1944: 163, 1947g: 168. (**ec**) Pfeffer 1943b: 181; Schimitschek 1941a: 305, 1946b: 9. (**hb**) Schimitschek 1944: 163, 1946: 9. (**ds**) Buresh & Lazarov 1956; Kleine 1912b: 169; Normand 1937: 268, 1949: 104; Pfeffer 1936: 89, 1947d: 127; Sainte-Claire 1914: 469; Sainte-Claire & Mequignon 1938: 444. (**tx**) Balachowsky 1949a: 136; Eggers 1911a: 75, 1929f: 103, 1933f: 56, 1940g: 36, 1944c: 142; Lhoste & Roche 1960:fig. 3; Pfeffer 1955a: 124; Reitter 1913a: 48; Schedl 1934f: 1635, 1946b: 55.

***pilifer* (Spessivtsev)** 1919: 250 (*Myelophilus*). Holotype, sex?; Vladivostok, USSR; repository not given.

Figures: Tsai & Li 1959: 84.

Distribution: Asia (Hebei, Heilongjiang in China/ Amur, Siberia, Ussuri in E USSR).

Hosts: *Pinus armandii, P. koraiensis, P. tabulaeformis.*

References: (**cn**) Kurenzov 1935c: 189. (**ec**) Kurenzov 1934a: 57. (**hb**) Krivolutskaya 1956: 828; Kurenzov 1935a: 19, 28, 1948b: 105, 1950d: 143; Stark 1952: 190; Wang 1982. (**ds**) Krivolutskaya 1956: 828, 1983; Kurenzov 1934a: 57, 1935a: 19, 28, 1935c: 189, 1936a: 112, 1938a: 59, 1965, 1967; Pfeffer 1935: 159; Stark 1952: 190. (**tx**) Eggers 1929f: 103, 1933f: 55–56; Krivolutskaya 1956: 828, 1958: 116, 147; Kurenzov 1941a: 118–119, 1948b: 105, 1959: 143, 161; Schedl 1934f: 1635, 1946b: 52, 56, 1953e: 22; Spessivtsev 1919: 250; Stark 1952: 190; Tsai & Li 1959: 84; Yin, Huang, & Li 1984: 55.

***piniperda* (Linnaeus)** 1758: 355 (*Dermestes*). Syntypes, sex?; Europe; UZI, Upsalla.

Figures: Alkan 1946b: 140, Bakke 1960: 310, Balachowsky 1949a: 26, 104, Barbey 1925: 248, Chararas 1962c: 226, Grune 1979: 54, Postner 1974: 398.

Distribution: Africa (Algeria/ Madeira Islands), Asia (Henan, Hunan, Jiangsu, Jilin, Liaoning, Shanxi, Sichuan, Yunnan, Zhejiang in China/ Assam in India/ Israel/ Japan/ Korea/ Mongolia/ Taiwan/ Turkey/ Sakhalin Island, "Transbaicalia", Siberia in E USSR), Europe (Austria/ Belgium/ Bulgaria/ Czechoslovakia/ Denmark/ England/ France/ Finland/ Germany/ Greece/ Italy/ Luxemburg/ Netherlands/ Norway/ Poland/ Romania/ Scotland/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia), Philippine Islands (Basilan Island).

Hosts: *Pinus* spp., rarely *Picea* spp.

Notes: (3) Escalera 1919: 104 (cited as aberration var. *pallidus*, no status), Fransen 1948: 216 (as aberrations var. *rubescens* Krausse, no status, var. *rubripennis* Reitter, no status). Stephens 1829a: 147 (*Ips fumatus* DeGeer, nomen nudum, synonymy).

References: (**ay**) Aslam 1961: 441; Chararas 1971b, 1974, 1975, 1981; Chararas et al. 1963; Escherich 1914: 182, 1923b: 429, 479, 519; Feytaud 1950a; Francke-Grosmann 1949a; Fuchs 1912a; Henniguy 1804: 178; Imhoff 1856: 227; Kaston 1936: 629; Keler 1920: 128; Kleine 1923: 214–217; Knoche 1908c: 228; Lekander 1959b: 33, 1959d: 92; Leisewitz 1906: 80; Lesne 1911a: 627; Marcu 1933a: 34; Marcus 1930: 644; Menier & Carle 1976: 89; Munro 1917b: 142; Nunberg 1928a: 140; Nusslin 1911a: 155, 378, 1912c: 271; Perttunen, Oksanen, & Kangas 1970; Ritchie 1917: 213; Robertson 1961; Sasakawa & Yoshiyasu 1983; Scherb 1971; Schonherr 1970b; Schroder 1902: 85; Schwerdtfeger 1926: 90, 1929: 361; Sedlaczek 1902b: 244, 1907: 82; Thomas, J. B. 1967; Tomalak, Michalski, & Grocholski 1984; Verhoff 1896: 111; Wichmann 1912a: 9. (**bv**) Annila 1971a: 11, 1975: 8; Annila & Petaisto 1978; Anonymous 1966w, 1974u; Bakke 1968: 443–602, 1973; Barlow 1966; Barr, B. A. 1969: 643; Bergman 1971; Boocock 1959c; Bouhot, Lieutier, & Debouzie 1988a, 1988b; Butovitsch & Ringselle 1968: 23; Byers 1988: 429; Byers, Anderbrant, & Lofqvist 1989; Byers, Lanne & Lofqvist 1989; Byers et al. 1985; Carle 1978; Carle, Descoins, & Gallois 1978; Chararas 1968a, 1971b, 1974a, 1976c; Chararas & Berton 1961: 235–243; Chararas & Deschamp 1962; Chararas, Desveaux, & Kogane-Charles 1978a; Chararas et al. 1982: 1094; Doom & Luitjes 1971b; Ehnstrom 1975; Eidmann 1965b,1974b; Ellefsen 1980c; Ericsson et al. 1985; Espanol 1964a; Francke & Heeman 1976; Fuhrer & Kerck 1978a; Gidaszewski 1974; Grune 1979: 55; Haggstrom 1976; Hallgren, Lekander, & Lonner 1972; Jacobson 1972; Jotland 1975a; Kangas 1965: 61, 1967b, 1968: 177–180, 353–364, 1975; Kangas, Oksanen, & Perttunen 1970; Kangas, Perttunen, & Oksanen 1967: 181, 211, 1971; Kangas et al. 1965: 61–73, 1967: 87; Kevdina 1897: 108; King, C. J. 1976b; Klassen, Ridgway, & Inscoe 1982; Klimetzek et al. 1986: 27; Langstrom 1975, 1979a, 1979c, 1980a, 1983a, 1984, 1986: 351; Langstrom & Hellqvist 1985; Lanier et al. 1984; Lanne et al. 1987; Leclercq, Simon, & Verstraeten 1967; Lindemann 1875: 143–146; Loyttyniemi & Hiltunen 1976; Loyttyniemi, Heliovaara, & Repo 1988a, 1988b; Luitjes 1976; Lutyk 1984; Magema, Gaspar, & Severin 1982; Meixner 1937: 1214; Menier & Carle 1976: 89; Naegeli 1928; Naumann-Etienne 1978a; Nilsson, S. 1974b; Nuorteva 1954: 184, 1956c: 22; Nuorteva & Nuorteva 1968; Oksanen 1968: 1–13; Oksanen, Kangas, & Perttunen 1968; Oksanen, Perttunen, & Kangas 1970; Perrot 1977; Perttunen 1958: 12–18, 1959: 65, 1960, 1963; Perttunen & Boman 1965; Perttunen & Hayrinen 1969, 1970; Perttunen, Kangas, & Oksanen 1968: 205–222; Perttunen, Oksanen, & Kangas 1970; Prell 1925b: 166, 1926: 62, 1930c: 626, 1931: 367; Raisenen et al. 1986; Rozhkov 1970: 136; Saarenmaa 1987, 1988a, 1988b; Savory et al. 1970; Schlyter et al. 1988; Schnaider 1955: 235; Schonherr 1970b, 1972; Schroeder 1987, 1988a, 1988b; Schroeder & Eidmann 1987; Schroeder & Lindelow 1989; Schwerdtfeger 1981: 188; Shepherd 1965: 213; Sierpinski 1971a; Sjodin et al. 1989; Soderkvist 1970; Speight 1980; Srot 1968; Vite, Volz, & Paiva 1986; Volz 1988; Wichmann 1912a: 9; Yasunuga 1962: 197–200; Yasunuga, Oshina, & Kuwatsuka 1962; Yoshikawa et al. 1986; Zumr 1989. (**cn**) Acatay 1943a: 62, 1943b: 3; Acloque 1914; Adkin 1918: 83; Agafonov & Kuklin 1979; Andersson, S. O. 1961a, 1961b: 228–230, 1971, 1973; Andersson, S. O. & Lekander 1966: 681–696;

Andrianova 1950; Androic 1966: 48; Anonymous 1900e: 569, 1921q: 1; Anonymous 1967r, 1971i, 1971p, 1971t, 1972i, 1972j, 1974i, 1974r, 1974u, 1975j, 1978i, 1978n, 1978w, 1979p, 1980g, 1984b; Antoine 1935: 269; Arbois de Joinville 1885; Ass & Funtikow 1941; Astiaso 1970; Aullo 1918: 163–171, 1919: 19–28, 46–47, 1923: 8–11, 1929: 77–82; Axelsson & Brakenhielm 1980: 43; Azavedo 1967: 1–21; Baeta Neves 1945: 1–15, 1952a, 1955: 44–53, 1957, 1958; Babina 1966: 25–29; Badoux 1921: 163–173; Bakke 1960: 308, 1968: 441–602; Barbey 1922a, 1924a, 1925: 247, 1927: 1–7; Barbina 1966, 1967: 53–58; Barlow 1966; Becker 1950; Bednall 1960: 12; Bejer-Petersen 1959a; Berdennikova 1949, 1954: 84; Berezina & Kurenzov 1935: 1–52; Bergman 1971; Bergman & Templin 1976; Bevan 1962: 1–8, 1964b, 1967a, 1967b, 1969, 1974: 304, 1987: 124; Bevan & Davies 1970,1971; Bjorkhem et al. 1977; Blanchere & Robert 1889; Blandford 1892a; Blatchford 1983: 31; Boa 1898; Bogdanova 1982, 1986; Boocock 1959b, 1959c; Borcea 1924: 221–260; Borodajewsky 1914: 1065–1067, 1915a: 1222–1247; Borodin 1915: 1–87; Brammanis 1928: 1–20; Brandt 1925: 167–171; Braun 1867; Brooks & Brown 1936: 1–46; Bruneau 1950; Butovitsch 1930a: 51–54, 1946, 1953: 1–4, 1960a, 1960b, 1972, 1977; Butovitsch & Ringselle 1968: 23; Bychawska & Swiezynska 1979; Byers, Anderbrant, & Lofqvist 1989; Capek 1966; Capek et al. 1957; Carle, Vincq, & Bizet 1979; Chararas 1957e, 1959d: 135–167, 1959h: 2109–2111, 1962a, 1962d: 206–209, 1976c, 1977c, 1978; Chararas & Hamza 1972; Cheniclet, Bernard-Dagan, & Pauly 1988; Chorbadzhievo 1929; Christiansen 1970; Chrystal 1931, 1935, 1949b: 3–11; Clarinval 1926: 26–32; Collinge 1915: 789–791; Cotta 1919: 10–16, 70–80; Coulson, J. R. 1981: 9; Crooke 1954, 1955b, 1956: 44–53, 1957, 1960: 166–196; Crooke & Kirklund 1956: 135–145; Curtis 1846; Davies & King 1973; Dehlen & Langstrom 1976, 1977; Delfin 1969, 1977, 1980; Dengler 1930: 122–126; Dobrodeev 1924: 70–76; Doom 1949; Doom & Luitjes 1970, 1971a, 1971b; Dowding 1974; Duda 1974; Eckstein 1890, 1898a, 1915, 1926: 372, 1930a: 120–121, 1930b, 1935, 1939a, 1939c: 32–41, 81–92; Egorov 1958: 1492; Ehnstrom 1985; Eichhoff 1880b: 367; Eidmann 1964, 1965c, 1970a, 1971, 1973, 1985a; Eidmann & Klingstrom 1976: 240; Eliescu & St. Negru 1956; Elsner 1963: 97–103; Elton 1946, 1947, 1949a, 1949b, 1951, 1964: 1–54; Elton & Blackwaardt 1953; Elton & Voute 1950; Escalera 1919: 103–108; Escherich 1917: 97–155, 1929, 1932a; Espanol 1964a: 110–114, 1967: 121–125; Esterberg 1959; Fahlgren 1971; Federov 1930: 225–229; Ferreira & Ferreira 1986; Feytaud 1927: 113–121, 140–144, 1946, 1950a, 1950b; Findlay 1959; Florov 1934: 106–134; Forbes 1910; Fransen 1937a: 285–297, 1937b: 13–21; Franz 1948e; Fritz 1896; Funke 1870; Fystro & Bakke 1962; Gabler 1955; Galoux 1948d; Gasste 1976; Georgebits 1974; Georgescu et al. 1957: 357, 471; Gidaszewski 1974; Gigglberger 1867; Gillanders 1916: 200–209; Gmelin 1787a; Godbersen 1925; Godha et al. 1964; Gois 1944; Golovyanko 1926: 1–87; Gradojevic 1938; Grandi 1951; Grechkin 1962b: 707; Green 1923: 208–224; Gusev 1928: 144; Gyorfi 1946: 193, 1959; H. 1867; Hagedorn 1910c; Haget 1949; Haggstrom 1976; Hallgren, Lekander, & Lonner 1972; Halperin 1976a; Hamon 1980; Hanson, H. S. 1937: 185–236, 1940a: 483–536, 1940b: 64–79, 1940c: 247–251, 1943, 1950: 18–26; Hartig 1811: 321, 331, 1820: 320, 331, 1832: 280, 288, 1861: 322, 330, 1879: 188, 195; Hartl & Mills 1983; Hasek 1955, 1961; Headlee 1914: 631–698; Heikkila 1978; Heqvist 1965; Hess 1898: 383, 1907: 265; Hess & Beck 1914: 252, 1927: 252; Hilden 1922; Hopkins 1894c, 1894d, 1899c: 311; Horegott 1960; Horn 1937: 271; Hrubik 1973; Hubault 1945; Huss 1969, 1975; Inouye 1949a: 7, 79, 1949b, 1949c; Jablokoff 1953: 327; Jacentkovsky 1933: 271; Jahn 1952a: 98, 1960b; Jazentkovsky 1922: 7–9, 1924: 278–296; Joly 1949b: 254, 1976; Jondelius 1971; Jondelius et al. 1970: 42–49, 1973; Jorgenson & Bejer-Petersen 1951, 1952; Judeich 1886: 67; Judeich & Nitsche 1895: 447, 462; Kailidis 1964c, 1966a, 1966b: 56; Kailidis & Markalas 1988; Kalandra 1948a; Kamuishnuii 1925: 14–16; Kangas 1934d, 1937, 1950b: 162, 1958d: 162, 1966; Kaplan & Mokrzecki 1988; Karaman 1964: 440–443; Kauschinger 1893: 146; Keller 1903b: 52; Kemner 1913: 191–210; Kharitonov 1924: 199–204; Kholodkovskii 1912: 278, 297; Kilsbergarn 1980; King, C. J. 1977a; Kirchner 1860: 91; Klauser 1954: 286; Kleiser 1859: 98; Klimesch 1931: 40; Klopfer 1897: 31; Ko 1984; Ko & Morimoto 1985; Kobakhidze 1960: 1851; Koch 1913: 95; Koehler 1958: 30, 1968: 133–139, 1986: 145; Koehler & Zdanowicz 1954: 19–59; Kollar 1840: 257, 363; Konig, D. 1923: 1065, 1924: 1112, 1308; Konopka 1871: 35; Kontkauen 1932: 59; Koppen 1882: 236, 243; Korsch 1964: 144–145; Kozikowsky 1929: 253; Kratochvil 1941: 23; Krol 1980a, 1980b; Kruel 1950: 6; Kurenzov 1956b: 29; L. 1896: 557; Laidlaw 1941: 32–37, 1947: 52; Lampa 1905: 51; Lang 1896: 557; Langstrom 1975, 1979a, 1979c, 1980a, 1980c; Langstrom & Hellqvist 1988a, 1988b; Langstrom, Hellqvist, & Ehnstrom 1984; Lanz 1975; Larroche 1973; Lauenstein 1966; Legowski 1987; Lekander 1954b: 7, 1955b: 17, 1966, 1970, 1971a, 1974b, 1975b; Lekander & Rennerfelt 1955: 10; Lekander, M. 1951: 23; Lesne 1913: 213; Levieux, Lieutier, & Delplanque 1985b; Lieutier, Favre, & Garcia 1988; Lindelow & Iacobaeus 1985; Liro 1916: 126–132; Listov 1971; Lofting 1949: 14; Lohrenz 1907: 39; London 1938: 187; Loyttyniemi 1978; Loyttyniemi et al. 1979; Lozovoi 1949a: 245, 1954: 1175–1176; Lucas 1850: 48;

Ludge 1971; Luitjes 1957: 137, 1958: 211; Luitjes et al. 1954: 127; Lunden 1980; MacDougall 1913: 1–17, 1914: 1–19, 1915: 1–27, 1917: 1–38, 1925: 1–37; Madler 1830: 346; Maksimovic & Milanovic 1964, 1966; Marchal & Foex 1918: 1–35; Marcu 1926c: 61, 1930: 327–336; Marie 1924: 328–330; Marn 1921: 81; Martinek 1974: 3; Mascov et al. 1980; Masutti 1969; Mathiesen 1951: 229, 1952: 279; Mathiesen-Kaarik 1953: 6, 20; Mattsson 1921: 81–101; McFadden et al. 1982; Megalov & Bazhanov 1927: 1–29; Methner 1931: 422; Meves 1887: 30, 1888b: 157, 1896: 153; Michalski 1966; Michalski & Schmidt 1957: 55; Michalski & Witkowski 1959: 45, 1960, 1962, 1963a, 1963b; Mokrzecki 1928: 272, 1933: 284; Mola 1929: 35; Molina 1964: 55–57; Morril 1953: 275; Morris 1929: 43–44; Mostovsky 1923: 287–288; Mozolevskaya 1979, 1984, 1985; Mukai et al. 1987; Mulder, Wellinga, & van Daalen 1975; Muller 1891: 52, 1912: 184; Mumford 1963: 21; Munro 1914: 170–176, 1917: 123–158, 1922: 136; Murayama 1954a: 4; Nechleba 1927: 115–117; Nestertschuk 1930: 172; Neves et al. 1986; Niemeyer 1974: 288, 1975: 150; Niemeyer & Thalenhorst 1974; Nilsson, B. 1971; Nilsson, S. 1974a: 32, 1974b, 1974c, 1975a, 1975c; Nordlinger 1870b: 261; Nosek 1951: 107, 1952b: 98; Novak, V. 1972a; Novak, V., Hrozinka, & Stary 1965: 57; Nuorteva 1955c: 1, 1955d: 99, 1959c: 1025, 1964: 1–17; Nuorteva & Nuorteva 1968; Nusslin 1883: 151, 1913: 205; Oberdiek 1927: 101–114; Oda, Kato, & Nobuchi 1964; Ohmart 1980; Olofsson 1980; Oppermann 1985; Ormerod 1883: 84, 1890: 113; Ossowski 1941: 75–79, 1942: 252; Otto 1969: 1033–1036; Ozols, G. E. 1960; P. 1879: 211; Paitier 1959: 31; Palm 1948b: 714; Park & Byun 1988; Park, K. N. & Lee 1972; Pawlowitsch 1883: 10; Pawlowski 1962; Persson 1980; Pfeffer 1933: 43, 1940c: 273; Picard 1921: 17; Pierce, W. D. 1917: 69; Polozencev 1926: 1–5, 1966: 9–12; Polozencev, Rubcova, & Naumenko 1968; Polozencev & Zolotov 1969; Pomocnicze 1876: 155; Prosoroff 1929: 17; Questienne 1979: 115; Ratzeburg 1834: 23; Redfern, Gregory, & Low 1979; Regnander 1976,1977; Reisch 1960; Reisseneger 1889: 297; Rettich 1928: 15–17; Rhumbler 1922: 280, 1927: 291; Richter 1914: 282; Richter, D. 1962: 219–225; Rimski-Korsakov 1921: 36–43; Ritchie 1917: 213–234; Rodzianko 1915: 1–15; Roepke 1931: 161; Roessler 1926: 239; Romanyk 1963a: 26, 1963b: 159, 1966; Rudnev 1965b, 1966; Ruhm 1958: 308; Russo 1946a: 24, 26, 1946b: 297–314; Ryle 1928: 254–259; Ryvkin 1951: 80–81; Saalas 1919: 1–415, 1929: 168–180, 1949: 341, 353; Saarenmaa 1983, 1985b; Sachtleben 1925: 32; Saito 1930: 139–146; Sargos 1947: 7; Sasscer 1917: 221; Sauvard, Lieutier, & Levieux 1987; Savory et al. 1970: 161–174; Schedl 1928: 109; Schenk 1952: 440; Schevyrew 1905b: 1098; Schimitschek 1937c: 47, 1938c: 2114, 1939d: 2112, 1944: 163, 1947g: 191, 1950: 46, 1951a: 101, 1952c: 60, 1955a: 29, 1955b: 102, 1955c: 77, 1961a: 154; Schindler 1969b: 136; Schmidt 1881: 39; Schonauer 1857: 29; Schonberg 1925: 887–888; Schonherr 1964: 37–40; Schulze 1927: 335; Schuster 1918: 102; Schvester 1967: 373–384; Schwappach 1904: 78; Schwappach et al. 1929: 186; Schwerdtfeger 1944a: 170, 175, 1944c: 80, 1946b: 62, 1948b: 137, 1950a: 67, 1950b: 49, 1957a: 182, 1968a; Sedlaczek 1921: 339, 1936: 200; Selys-Lonchamps 1880: 151–152; Shiperovich 1926: 472–475; Shiraki 1952; Shirskaya 1961: 1–165; Siemaszko 1939: 1–54; Sierpinski 1962: 211–223, 1966, 1969a: 51–54, 1969b: 109–127, 1971a, 1971b; Silva, F. A. E. & Serrao 1967; Sinreich 1958: 197, 1961: 166, 1962; Smelyanets 1977; Smelyanets, Lopatina, & Lomakin 1981; Soderkvist 1970; Souphieff & Scherbinovskaja 1937: 47, 102; Spaic 1964a: 226–236; Speight 1980; Srot 1966: 663, 1968; Sukhovolskii 1981; Sureyya & Hovasse 1931: 1–32; Sylven 1916: 153–161, 1920: 1–19; Szmidt 1960, 1983; Templin 1973: 104; Templin & Templin 1974; Thaler 1898: 388, 1902: 278; Thompson 1939: 1–26; Titova 1959: 110–126, 1966; Tolskii 1927; Torrent & Romanyk 1966; Toth 1971; Tragardh 1917: 28, 1918: 1–28, 1918c: 98, 1919: 67–114, 154–174, 1921e: 64, 1923: 401–424, 1924: 311–338, 1927: 191–216, 1927c: 65, 1929: 773–780, 1932: 264, 1935: 487–495, 1938a: 11, 1939a: 325, 1941: 115, 1942: 459; Tragardh & Butovitsch 1933a: 234, 1935: 1–268, 1936: 562, 1937: 292, 1938: 191; Trebra 1783: 79; Triggiani 1984; Trinchiera 1921: 1–12; Troeng, Linder, & Langstrom 1979; Trofimov 1979; Tullgren 1916: 104; Turcek 1964: 310, 1967: 15; Valenta 1960: 116–131; Vappula 1965: 152; Vestjordet 1971; Viedma & Junco 1963: 918–922; Vietinghoff 1951: 453; Villasenor 1966; Virkki 1960: 3–16; Vorontsov 1968; Vorontzov 1910: 1–5, 1911: 1–116; Voute 1942: 12, 617, 1947a: 143, 1960: 947, 1963: 459–462; Voute & de Vries Broekman 1965; Wachtl 1883b: 319, 1901: 377, 381; Wadde-Love & Webb 1948: 109–110; Wardle 1929: 323; Weber, H. 1926: 572; Wei 1960: 63–69; Weiss 1915: 133–135, 313–315, 1916: 212–216; Wichmann 1927b: 352; Wikstrom 1934: 122; Willkomm 1863: 250; Wilson, G. F. & Becker 1960: 86; Wolff 1920: 229, 1924b: 166; Wolff & Krausse 1922: 78; Wolfle 1949: 479; Yamane 1981: 470; Yanovskii & Korotkov 1984; Zarco 1946a: 251, 1946b: 463–468; Zhuravlev & Osmolovskii 1949: 52; Zivojinovic 1963: 449; Zolk 1935: 614–640, 1937: 147–172; Zschiesche 1932: 270; Zwolfer 1960, 1963. (**ec**) Acatay 1943b; Agafonov & Kuklin 1979; Alfken 1924; Andreev 1988; Annila 1975: 11, 1977; Annila & Perttunen 1964: 35–45; Annila & Petaisto 1978; Anonymous 1972j, 1982e; Antoine 1935: 269; Apfelbeck 1916b; Ass & Funtikow 1941; Aube 1844; Bakke 1957, 1968a; Balazy 1962; Balazy & Michalski 1964b; Balazy et

al. 1977; Barbey 1924b, 1927; Barbey & Ferriere 1923; Beaver 1974b; Belanowskii 1930; Boas 1900; Bogdanova 1987, 1988; Bovey 1970; Brammanis 1940: 257–340; Brandt 1930; Burzynski 1971; Butovitsch 1925: 33, 1946, 1977; Butovitsch, Notini, & von Wettstein 1960; Butovitsch & Ringselle 1968: 23; Butovitsch & Spaak 1939: 1–120; Bychawska 1985; Cameron 1940: 46–52; Carpelan 1944; Chararas 1957d, 1959a, 1959c, 1959d, 1959e, 1959h, 1962d, 1964a, 1964b, 1968: 238, 1975; Chararas, Desveaux, & Kogane-Charles 1978a; Chararas & Hamza 1972; Chararas et al. 1962, 1982: 1094; Cobb et al. 1968; Cole 1973: 286; Cooreman 1963: 45; Crooke 1954; Dowding 1974; Eckstein, F. 1921; Ehnstrom 1963b; Eichhoff 1883c: 161; Eidmann 1965c, 1974b; Eidmann & Nuorteva 1968: 135–148; Elliot & Morley 1907; Escherich 1942: 649; Fagerstrom et al. 1978; Francke-Grosmann 1931, 1952a; Fry 1989: 18; Fuchs 1914b, 1929a, 1930, 1937, 1938; Fuhrer & Kerck 1978a; Galoux 1947b, 1947c, 1947d, 1948a; Gaulle 1906: 236–237; Gauss 1954a: 423; Gidaszewski 1974; Gillanders 1906; Giraud & Laboulbene 1877: 427; Graham 1969: 878; Grossmann 1931a; Guanfjing 1989; Gyorfi 1941b, 1943: 84, 1952b; Haeselbarth 1967; Hartig 1832: 280, 288; Hartl & Mills 1983; Heliovaara & Lilja 1989; Henningsson & Lundstrom 1974; Heqvist 1957a, 1963; Herald & Mercadier 1984; Hirschmann 1960, 1971b: 40; Hirschmann & Wisniewski 1982, 1983; Hirschmann & Zirngiebl-Nicol 1961; Huss 1975; Ierusalimov 1975; Inouye et al. 1955: 72; Jakaitis 1979a: 145; Jakaitis & Valenta 1976: 12; Jamnicky 1957b: 18, 1957c, 1961b; Joly 1949a: 7; Jong & Saarenmaa 1985; Kaarik 1973; Kailidis 1966b: 56; Kailidas & Markalas 1988; Kakuliya & Lazarevskaya 1965; Kangas 1932: 12, 1937, 1950: 145–177, 1953: 224–228, 1954a: 48, 1954b, 1958c: 93, 1968: 353–364, 1970: 75–83, 120–122; Kangas, Perttunen, & Oksanen 1971; Karpinski 1932a: 100; Kaya 1984; Kerstens 1961: 137; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1980a, 1980b, 1983; Kishi 1969,1972; Klauser 1954: 286; Kleine 1907a: 109, 1907b: 150, 1908b: 207, 1908c: 182, 1909a: 44, 76, 1910: 346, 1943: 84, 1944: 68; Kneiff 1923: 246; Knoche 1907b: 474, 1908b: 200; Kobakhidze 1960: 1851; Kolubajiv 1954: 55; Kolubajiv & Kalandra 1954: 30; Koehler, W. 1968; Kokueva 1900: 569; Kostenko 1929; Kostin 1964: 103; Koyama 1963; Kraemer 1950b: 382; Kratochvil 1941: 23–30; Krivosheina 1974; Krol 1980a, 1980b, 1984; Kudela 1981; Kudela & Wolf 1964: 1023–1026; Laidlaw 1941b: 32; Langstrom 1980a, 1984; Langstrom & Hellqvist 1985, 1988a, 1988b; Larroche 1973; Leclercq, Simon, & Verstraeten 1967; Lekander 1954a: 3, 1962b, 1966; Li & Zhou 1980: 68; Lieutier, Cheniclet, & Garcia 1989; Lieutier, Favre, & Garcia 1988; Lieutier & Vallet 1982; Lieutier & Yart 1989; Lieutier et al. 1988, 1989; Lovaszy 1941: 194–204; Lovendal 1890a: 131; Loyttyniemi & Hiltunen 1976; Lozovoi 1948a: 69, 1949a: 245, 1954: 1175; Luitjes 1976; Lukasheva 1986; Lundberg 1984; Lutyk 1984; MacGillaory 1906: 27; Majewski 1965: 33–36; Majewski, T. & Wisniewski 1978: 5; Maslov et al. 1980; Mathiesen 1951: 229, 1952: 279; Mathiesen-Kaarik 1953: 6, 20; Mazur 1973, 1979, 1985; Meyer 1934: 612; Michalski 1982, 1988; Michalski & Ratajczak 1989; Mozolevskaya 1979, 1981; Naumann-Etienne 1978a; Nechleba 1928b: 125–126, 1928c: 111, 1929a: 24–25; Niemeyer & Thalenhorst 1974; Nikitsky 1978; Nilsson, B. 1975a, 1975c; Nilsson, S. 1974b; Nishiguchi 1957: 69–73, 1959: 271; Nosek 1951: 107, 1952b: 98, 1959a: 118; Novak, P. 1952: 412; Nunberg 1930: 200; Nunberg & Wiackowski 1958: 130; Nuorteva 1956a: 17, 1957b: 49, 1959d: 201, 1961a, 1962b: 45, 1963b, 1964b: 1–17, 1967a, 1968a, 1970, 1971: 69; Nuorteva & Laine 1968; Nuorteva & Nuorteva 1968; Nuorteva & Saari 1980; Nuorteva & Salonen 1968: 49–55, 1969: 13; Nusslin 1927: 291, 300; Okolow 1963; Olofsson 1980; Palmen 1944: 60, 1946: 194; Park, K. N. & Lee 1972; Perris 1852: 493, 1853: 601, 1854a: 101, 1854b: 626, 1856a: 208, 1862: 177; Perttunen 1959: 65, 1960: 86; Perttunen & Boman 1965; Perttunen & Hayrinen 1969: 105–122, 1970: 41–46; Perttunen, Oksanen, & Kangas 1970: 249–250; Pfeffer 1923a: 330, 1928b: 2, 1933: 43, 1943b: 179; Pfeffer & Prihoda 1950: 1; Piou & Lieutier 1989; Pischik 1979, 1980a; Poinar 1972, 1975: 160; Prell 1925b: 166, 1926: 62; Ratzeburg 1869a: 60, 89; Reisch 1972; Rennerfelt 1951: 128; Rondani 1873: 151; Roubal 1934a: 86; Ruhm 1956b: 3, 1957: 351, 1960: 207, 1969; Rumbold 1931c: 848; Rummukainen 1954: 12; Rupertsberger 1893a: 216, 1893b: 290; Russo 1946a: 24, 26; Saalas 1917a: 18, 1928: 651, 1930: 118, 1949: 341, 353; Saarenmaa 1983, 1984, 1985a, 1985b, 1987; Salonen 1965: 88–96, 1968: 31–37, 1973; Sauvard 1989; Schedl 1936f: 161; Scheerpeltz 1935: 18; Scheucher 1959: 263; Schimitschek 1930a: 281, 1941a: 305, 1941b: 59, 1950: 46, 1955a: 29; Schonherr 1972; Schremmer 1956: 217; Schroeder & Eidmann 1986; Schuster 1918: 102; Schvester, Carle, & Riom 1970: 244; Schwerdtfeger 1929: 361, 1944a: 170, 175, 1950a: 67, 1950b: 49, 1957: 182; Sedlaczek 1908: 47, 1935a: 153; Shepherd 1966: 515; Sitowski 1930: 2; Smelyanets 1977; Smelyanets, Lopatina, & Lomakin 1981; Srot 1966a, 1968; Stammer 1933: 152; Stark 1925b: 80, 205–212, 300–301, 1926j: 125, 346, 1927: 15–19, 1931: 339–343; Stefanov 1946: 1, 1949a: 97; Struble 1930b: 116; Sukhovolskii 1982; Sunfor 1979; Sylven 1913: 144, 1916a: 157; Szczepanski 1960a: 407; Szyszko, Tracz, & Szpojda 1984; Templin & Templin 1974; Tenkacova & Mituch 1987; Thalenhorst 1958: 29; Thompson, W. R. 1943: 80; Thompson, W. R. &

Simmonds 1964: 30, 1965: 2; Titova 1966; Tomalak, Michalski, & Grocholski 1984; Toth 1971, 1976; Tragardh 1925a: 170, 1927a: 195, 1928: 773, 1941: 115; Triggiani 1983,1984; Tvermyr 1967; Vaartaja 1947: 44; Vietinghoft 1924: 327; Vite 1952a: 101; Vite & Pitman 1967: 683–701; Voolma 1978: 91; Voute 1957: 172; Wallace 1953: 164; Westerboer 1963: 349; Wiackowski 1957a: 43; Wichmann 1954a: 438, 1955a: 95, 101, 1958: 230; Wisniewski 1979b,1980; Wulker 1924: 9; Yanovskii & Korotkov 1984: Yasumatsu & Watanabe 1965: 69; Yasunaga 1962b; Yoshikawa et al. 1986; Zinovjev 1957: 332. (**hb**) Acatay 1943a: 62–63; Adelung 1905; Adkin 1918: 83; Agafonov & Kuklin 1979; Alkan 1946: 140; Altum 1879b, 1879c, 1881c: 253, 1883c, 1884, 1885b, 1886, 1887a, 1887c, 1889a, 1889c, 1890a, 1890b, 1890c, 1891, 1897; Andersen, J. & Nilssen 1983: 1459; Annila 1969: 187, 1971: 10, 1977; Annila & Petaisto 1978; Annila et al. 1972: 22; Anonymous 1866: 421, 1900d: 569, 1921q: 1, 1972b, 1972j, 1972r; Apfelbeck 1916b, 1917; Arndt 1920; Astiaso 1970; Aullo 1919; Awerkiew 1941; Bach 1864; Baeta Neves 1945, 1955; Bakke 1968a; Barbey 1901: 10, 19, 49, 1913, 1924a, 1925: 247, 1942; Barbina 1966,1967; Bargmann 1899b, 1900, 1907: 500–502; Barrere 1872: 53; Becker, G. 1950; Beffa 1949, 1961; Behlen 1826; Berg 1827; Bergman 1971; Bevan 1974: 304, 1987: 124; Binzer 1879, 1881a; Blanchere & Robert 1889; Blandford 1894b; Boas 1897b, 1898, 1900, 1923: 324; Bogdanova 1982; Bonnemaison 1953; Boocock 1959c; Borcea 1924; Brandes 1899, 1900, 1901; Brandt 1919, 1925, 1926, 1929a, 1930, 1948; Braun 1941c; Browne 1968: 691; Browne, J. M. & Bevan 1966; Budge 1949; Budkov 1897; Bukowsky 1930; Busse 1931; Butovitsch 1925a, 1925b: 41–43, 1930a, 1960a, 1972; Bykov 1987; Cabral 1959; Cecconi 1906, 1924; Chamberlin 1939: 215; Chararas 1957e, 1960a: 36, 1962a, 1962d, 1964a, 1968a; Charvat 1950; Chevandier 1851a, 1851b, 1851c; Chittenden 1890; Chorbadzhievo 1929; Clarinval 1926; Curtis 1846; Czech 1883; Dallimore & Munro 1922: 189–193; Demakov 1988; Demme 1925; Doebner 1862a; Dombrowsky 1887; Doom & Luitjes 1971a, 1971b; Drugesco 1980; Duda 1974; Eckstein 1889: 209–212, 1897, 1898d, 1913, 1915, 1926: 572, 1928, 1935, 1936, 1939a, 1939b, 1939c; Eckstein, F. 1939; Eichhoff, F. 1834a; Eichhoff, W. J. 1879, 1881a: 37, 101, 1882a: 241, 1882b: 707, 1882d: 337, 1882e: 322, 1883d: 674, 1883e: 50; Eidmann 1962: 161, 1965, 1974b; Eidmann & Klingstrom 1976: 240; Eidmann & Nuorteva 1968; Ellefsen 1980c; Elton et al. 1964; Escherich 1914: 182, 1923b: 429, 479, 519, 1930b; Everts 1900, 1903: 746; Feisthamel 1835; Ferguson 1924; Ferreira & Ferreira 1986, 1989; Feytaud 1927, 1946, 1950a; Fisher 1931; Floericke 1924; Flohrer 1948; Fransen 1948; Fritz 1896; Fuchs 1904a, 1905c: 340, 1907: 54, 1911b; Gabler 1955; Galaseva 1976; Galoux 1948a; Georgebits 1974; Gidazewski 1974; Gigglberger 1868; Gillanders 1906, 1908; Girard 1873; Gmelin 1787a; Gois 1944; Gornostaev 1916: 310; Grandi 1951; Grohmann 1913: 325–361; Gronberg 1914; Gyorfi 1957; Hagedorn 1903a, 1910c; Hallgren, Lekander, & Lonner 1972; Halperin 1978; Hanson, H. S. 1940b; Hartig 1811: 321, 331, 1820: 320, 330, 1832: 280, 288, 1861: 322, 330, 1877: 188, 195; Henneguy 1804; Hennings 1907a: 326, 1907c: 607, 1908b, 1908c: 215, 1908d; Henry 1905; Henschel 1876a: 92, 242, 1880b, 1895a: 139; Hess 1884, 1898: 383, 1907: 265; Hess & Beck 1914: 308, 1927: 308; Hickins 1963; Holmgren 1867: 113, 122; Hopkins 1899c: 311; Hoy 1830: 126; Hufnagel 1887: 512; Hufnagl & Puzyr 1951: 105; Inouye et al. 1955: 72; Jacobi 1906: 148; Jakubyuk 1927; Jamnicky 1956b, 1956c, 1961b; Janin & Lieutier 1988; Jester 1817; Joly 1949a: 7, 1976a, 1976b; Jotland 1975a; Judeich 1875a: 260, 1880: 150, 1886: 67; Judeich & Nitsche 1895: 447, 462; Juutinen 1978; Kailidis 1964c, 1966a; Kalandadze 1927; Kangas 1949c, 1954b, 1975; Karpinski 1933b: 24; Karpinski & Strawinski 1948: 154; Kauschinger 1883: 107, 1893: 146; Keller 1907a: 178, 1907b: 361; Kholodkovskii 1912: 278, 297; King, C. J. 1977b; Kleine 1908a: 98; Knoche 1900: 387, 1904: 5, 1905: 354, 1906: 266, 1907b: 150–156, 474, 1907e: 51, 1908a: 44; Knotek 1894a: 553; Kollar 1840: 257, 363; Konca & Gralicki 1977; Kostin 1960: 131; Kozikowsky & Nunberg 1925: 135; Kraemer 1950b: 382; Krausse 1922a: 550, 1922b: 28–30, 1922c: 770, 1925: 77–78, 1927: 87–88; Kudela 1981; Kurenzov 1948b: 105, 1950d: 197; L. 1896: 557; L. B. 1908: 620, 680; Lagerberg 1911: 382; Landin 1953: 24, 99; Lang 1893: 137; Langstrom 1975, 1979b, 1979c, 1983a, 1986: 351; Langstrom & Hellqvist 1985; Langstrom, Hellqvist, & Ehnstrom 1984; Larroche 1972, 1975; Lekander 1954b: 7, 1959a: 84, 1959b: 33, 1970; Lengerken 1939: 35, 1954: 76; Levieux, Lieutier, & Delplanque 1985b; Li & Zhou 1980: 68; Lieutier et al. 1984; Linde 1948: 16–22; Lindgren 1980a: 61; Lofting 1949: 14; Lohrenz 1907: 39; Loos 1896: 530, 1913: 412; Louzil 1961: 42; Lovendal 1890a: 131; Luitjes 1976; Lunardoni & Leonardi 1889: 423; Lunden 1980; Lutyk 1988; MacDougall 1899: 152, 1900a: 359, 1900b: 328, 1917: 125; MacGillavry 1906: 27; Madon 1930: 99; Magema, Gaspar, & Severin 1982; Marcu 1941: 402; Maslov & Demakov 1982; Masutti 1969; Mayewski, Z. 1965; McMullen & Atkins 1961: 197; Michalski 1959a: 291; Michalski & Witowski 1962; Molina 1964; Mozolevskaya 1979, 1985; Muchaschawria 1960; Mukhashabriia 1960: 205; Munro 1916b: 114, 1917b: 142, 1926: 52; Naegele 1928: 68; Naumann-Etienne 1978a; Negru & Pirvescu 1966: 148; Niisima 1908b: 18; Nilsson, S. 1974b, 1975b; Nordlinger 1856: 35, 1868: 262,

1870b: 261; Nosek 1959a: 118; Novak, V. Hrozinka, & Stary 1976: 57; Nunberg 1929: 97, 1929c: 117, 1946a: 1; Nuorteva 1954: 184, 1956c: 22, 1964b, 1967a, 1968a, 1970; Nusslin 1898: 277, 1904: 2, 1905a: 33, 1906a: 55, 1906b: 7, 1907: 613, 1913: 205, 1927: 291: 300; Oberdick 1927: 191–214; Oken 1836: 1682; Ossowski 1941: 75, 1942: 252; Park, K. N. & Lee 1972; Pauly 1894: 378; Perris 1852: 493, 1856a: 208, 1876b: 173; Petkov 1963: 217; Petrenko 1966; Peyerimhoff 1915: 61, 1919: 251; Pfeffer 1941b: 2, 1989a: 36; Portier 1959: 31; Postner 1974: 399; Prell 1926: 62–76, 1930c: 626, 1931: 367; Questienne 1979: 115; Ratzeburg 1834: 23, 1837: 132, 171, 1839: 157, 209; Regnander 1977; Rhumbler 1922: 280, 1927: 291; Rimski-Korsakov et al. 1949: 271; Ritchie 1915: 352, 1917: 213; Romanyk 1963a: 26; Rozhkov 1970: 136; Rudnev & Kozak 1974a, 1974b; Rupertsberger 1879: 231, 1880: 226, 1893: 290; Russo 1946a: 26, 1946b: 297–298; Saalas 1913a: 66, 77, 1949: 341, 353; Saarenmaa 1983, 1985a, 1985b, 1987, 1988a, 1988b, 1989; Salonen 1973; Salonen, Pulliainen, & Koponen 1968; Samal 1928: 141; Sandall 1975; Sauvard 1989; Sauvard, Lieutier, & Levieux 1987; Schenk 1952: 440; Schevyrew 1905b: 1098, 1905c: 192; Schimitschek 1930a: 281, 1944: 163, 1955a: 29; Schmidt 1881: 39; Schneider-Orelli 1947b: 156, 1947c: 94; Schoyen 1915: 140–149, 1917: 154–159; Schroder 1896: 357; Schroeder & Risberg 1989; Schulze 1927: 335; Schvester 1967; Schwappach et al. 1929: 186; Schwerdtfeger 1929: 361, 1944a: 170, 175, 1957a: 182, 1981: 188; Sedlaczek 1921: 339, 1935a: 153; Seitner 1911: 99; Severin 1901: 754, 766; Shepherd 1966: 515; Sinreich 1969; Soderkvist 1970; Sommerville 1890b: 255; Speight 1980; Spessivtsev 1913a: 59, 1923: 212, 1925d: 105, 1928a: 232, 1938: 159; Srot 1966: 563–576, 1968: 375–390; Stark 1926a: 333, 1927a: 15, 1952: 190; Stefanov 1949a: 97; Taschenberg 1880: 204; Thalenhorst 1958: 29; Toth 1971; Tragardh 1911: 24–30, 1914: 83, 1921e: 64, 1927c: 65, 1930c: 469, 1931: 55, 1939b: 151, 172; Triggiani 1984; Tschorbadjiev 1929: 161; Van Rossem, Burger, & Van de Bund 1974; Vite 1952a: 101; Voute 1942: 617; Voute & de Vries Broekman 1965; Wachtl 1901: 377, 381; Weber, H. 1926: 572; Wichmann 1924: 15, 1927b: 352; Wilson, G. F. & Becker 1960: 86; Wissman 1846: 24; Wolff 1920: 229, 1924: 166–170, 1927: 75; Wolff & Krausse 1922: 78; Yakubyuk 1959: 40; Yang 1989c; Yoshikawa et al. 1986; Zimmermann 1898: 344; Zinovjev 1957: 332; Zocchi 1959: 103. (**ds**) Acloque 1896, 1914; Alfken 1924: 365; Allen, A. 1951b; Ammann & Knabl 1913, 1923; Andersch 1851; Andersen, J. & Nilssen 1983: 1459; Androic 1966: 48; Angus 1964: 179; Anonymous 1928c: 202, 1967r, 1972j, 1978i, 1978w, 1979p, 1980g; Arru, Covassi, & de Bellis 1966: 33; Audras & Schaefer 1957; Avierezomb 1919: 829; Badoux 1921; Baeta Neves 1945, 1952a, 1955; Bakke 1960: 308; Balachowsky 1944b; Barbey 1914: 41–96, 1922a, 1924b, 1926; Barbina 1966,1967; Barlow 1966; Barthe 1896; Bau 1888; Baudisch 1899; Beck 1817; Bedel 1888b: 392, 409; Bednall 1960: 12; Beffa 1949; Behlen 1826; Bejer-Petersen & Jorum 1977: 19; Berg 1827; Bielz 1851, 1887; Binaghi 1967; Bistrom & Vaisanen 1988: 42; Blanchere & Robert 1889; Blandford 1894b, 1894c; Boas 1923: 324; Borcea 1924; Borchert 1951; Brakman 1966b: 204; Brancsik 1871, 1906; Browne 1968: 691; Bruggemann 1878; Brunden 1934; Budkov 1897; Bukowsky 1930; Buresh & Lazarov 1956; Butovitsch & Heqvist 1947; Cabral 1959; Calwer 1893; Capek et al. 1957; Carpelan 1944; Carpentier & Delaby 1908; Cecconi 1897, 1906; Chamberlin 1939: 215–216; Champion 1917: 173–174; Chapuis 1869: 33, 1873: 241; Chapuis & Candeze 1853; Chapuis & Eichhoff 1875; Chararas 1964a; Charvat 1950; Chittenden 1890; Cho 1955, 1957; Choo 1983: 53; Choo & Woo 1985: 164; Choo, Woo, & Nobuchi 1988a: 134; Choo, Woo, & Park 1983; Chorbadzhievo 1924d, 1925: 57–61, 1926: 175–241, 1929; Chrystal 1937; Crooke 1957; Crooke & Bevan 1957; Crotch 1863; Dallimore & Munro 1922; Debatisse 1945; Decaux 1890h; Dejean 1821, 1825; Doom 1949; Duffy 1945: 175; Duftschmidt 1825; Eckstein & Butovitsch 1939c; Eder 1934; Eggers 1904; Eidmann 1974b; Elton 1946, 1947, 1949a, 1949b, 1951; Elton & Blankwaardt 1953; Elton & Voute 1940; Endrodi 1958b; Ericson & Sandin 1893; Escalera 1919; Escherich 1914: 182, 1923b: 429, 479, 519, 1929, 1932b; Esterberg 1928, 1959; Everts 1900, 1922: 639, 1925; Eyquem 1891; Fauvel 1897; Favre 1890; Fedorov 1930; Feige 1918; Feytaud 1927; Fleischer et al. 1921a; Florov 1949: 62; Forster 1849: 440; Fowler 1882a, 1891; Frey 1937; Fricken 1889: 276; Friedrichs 1919; Fuchs 1904a, 1905a, 1905c: 340, 1907: 54, 1913; Fuge 1919: 252; Gabler 1949b; Ganglbauer 1904; Gaubil 1849: 127; Gaunitz 1928: 92; Georgebits 1974; Georghiou 1977: 73; Gillerfors 1966; Girard 1881c: 39; Gobang 1855: 745; Goeze 1777: 130; Gornostaev 1917: 308–315; Gozis 1875: 79; Grechkin 1962b: 707; Gredler 1866: 369; Grill 1895: 308; Grune 1979: 55; Gyllenhal 1827: 618; Gyorfi 1941b; Hagedorn 1903a, 1910d: 14; Halperin 1963: 83, 1976a, 1978; Hamilton 1894b: 407; Hansen, V. 1939, 1956, 1964: 459; Heinemann 1908a; Hellen 1947; Helliesen 1916: 83; Hennig 1954: 257, 261, 263; Henschel 1895a: 139; Heyden 1876: 297, 1898: 77; Heyden, Reitter, & Weise 1883: 181, 1891: 668, 1906: 709; Hickin 1963; Holdhaus 1923: 115; Holmgren 1867: 113, 122; Horegott 1960; Horion 1949, 1951; Hubault 1923b; Hukkinenn et al. 1936: 48; Ihssen 1939: 336; Illiger 1805: 130; Inouye 1949b; Jablokoff 1953: 327; Jacentkovsky 1912: 287, 1933: 271, 1934: 84–105,

1939: 76; Jamnicky 1960a; Janovsky & Tegshzhargal 1985: 407; Jansson 1935: 77, 1940: 63; Jemmett 1913: 1–44; Johnson & Halbert 1902: 819; Joly 1949b: 254, 1976; Judeich & Nitsche 1894: 447, 462; Kailidis 1966a: 56, 1985; Kailidis & Markalas 1988; Kaltenback 1874: 686; Kangas 1934a: 9–12, 1934c: 1–68, 1949c, 1967b; Karaman 1964; Karpinski 1925: 216, 1926: 82, 1931: 22, 24, 1932a: 100, 1933b: 24, 1948b: 229; Karpinski & Strawinski 1948: 154; Karppinen 1961b: 213; Kaszab 1977: 66; Keler 1923: 41–45, 1925b: 271; Kempers 1902: 67; Kersten 1933: 70, 72; Kestercanek 1881a: 12; Kevan 1946: 241; Kiefer et al. 1942: 528; Kienitz 1924: 1182; Klefbeck & Sjoberg 1960: 228; Kleine 1912a: 161, 262, 264, 267, 1912b: 169, 1913a: 34, 1914b: 249, 255, 1934a: 128; Kloft & Hinks 1945: 217; Knotek 1892a: 33, 1894a: 553; Ko 1969: 274; Koltze 1901: 152; Kontkanen 1932: 59; Koppen 1882: 236, 243; Koschitsky 1900: 83; Kostenko 1929; Kotula 1873b: 80, 1874: 24; Kraatz 1869: 59, 1876c: 107; Krausse 1920: 169; Krivolutskaya 1983; Krogerus 1921b: 115; Krol 1877: 34; Ku, K. 1964; Kurenzov 1937, 1950: 117, 122, 1965, 1967; Kurir 1947c: 7; Lacordaire 1866: 360; Langhoffer 1915c: 157; Larroche & Torossian 1971; Leclercq 1971; Lekander 1955b: 17; Leng 1920: 339; Lentz 1857: 138; Lesne 1913: 213; Liegel 1886: 43; Lindberg & Saris 1952: 58; Lindemann 1884b: 263; Linnaniemi 1935: 45; Lokaj 1868: 63; Lomnicki 1886a: 240, 1913b: 147; Loos 1913: 412; Lovendal 1890c: 210; Lucht 1987: 276; Luigioni 1929: 993; Luitjes 1957: 137; Luitjes et al. 1954: 127; Luna de Carvalho 1947: 15; Lunardoni & Leonardi 1889: 423; Lundblad 1950c: 114, 1958: 489; Malazgirt 1966: 64; Mandl 1931: 25; Marchant & Borden 1976; Marcu 1926c: 61; Matthews & Fowler 1883: 42; Mequignon 1936: 15, 24; Meves 1888a: 13; Michalski 1957: 163; Mirzoian 1950: 140; Mokrzecki 1928: 272; Mumford 1963: 21; Munro 1919: 1–35, 1922: 136, 1926: 1–27; Murayama 1929b: 2, 1929e: 42, 1930a: 1, 1930b: 8, 12, 30, 1934: 298, 1936a: 125, 1936b: 116, 125, 1939: 135–137, 1940a: 232, 1942a: 54, 1948a: 2, 1949a: 11, 1949c: 100, 1950b: 1291, 1951c: 3, 1953a: 7, 1953c: 148, 1954a: 4, 1955: 98; Murray 1853: 60; Nakane & Acane 1950: 123; Nakane et al. 1983: 382; Negru 1966: 148, 1966b: 400, 1968a: 455; Negru & Pirvescu 1966: 148; Niisima 1908b: 18; Nobuchi 1966d: 15, 1967: 19, 1985c: 5; Normand 1949: 104; Novak, P. 1952: 412; Nunberg 1928b: 88, 98, 1930: 200–208, 1954: 32; Nuorteva 1956b: 168, 1971: 66; Nusslin 1898: 277; Oliveira 1887: 327; Orest 1926c: 60; Pacher 1865: 151; Palm 1962a, 1962b; Palmen 1944: 60, 1946: 194; Pawlowski 1962: 241; Perris 1876a: 254, 1877a: 414; Peyerimhoff 1919: 251, 1933b: 363; Pfeffer 1924b: 471, 472, 1928b: 2, 1931b: 74, 1933: 3–54, 1935: 159, 1936: 90, 1947d: 126, 1947e: 15, 1950b: 73, 1984: 277, 1989a: 36; Pierce, W. D. 1917: 69; Pittioni 1943: 174; Pjatnitskii 1930a: 164; Platonoff 1940: 11, 1942: 63, 1943: 141; Pomerantzev 1907a: 177–192, 1907b: 423, 491, X; Poppius 1900: 108; Postner 1974: 399; Prossen 1913: 82; Pruffer 1948: 1; Rapp 1934: 720; Ratzeburg 1837: 132, 171, 1839: 157, 209; Razzauti 1921: 119; Redtenbacher 1858: 827, 1874: 368; Reitter 1869b: 153, 1894a: 53, 1916: 281; Revy & Siroki 1942: 82; Rimski-Korsakov et al. 1949: 271; Romanyk 1963b: 159, 1966; Roubal 1936b: 193, 1941: 259; Rozhkov 1970: 136; Rudnev 1965b; Ruskov 1928c: 61; Rye 1866a: 197, 1866b: 65, 1866c: 259, 1874: 205, 1890: 269; Saalas 1913a: 66, 77, 1917a: 18, 1930: 118, 1931: 168; Sahlberg 1900: 105, 1903b: 63; Sainte-Claire & Mequignon 1938: 444; Sasscer 1917: 221; Sawamoto 1940b: 141, 144; Schaschl 1854: 133; Schaufuss 1915: 1223; Schaum 1853: 295, 1859: 95, 1862: 100; Schedl 1959h: 99, 1961b: 184, 1963e: 154, 1964j, 1967c: 69, 1969g: 288, 1971d: 427, 1971f: 146, 1973c: 376, 1978e: 36, 1979i: 289, 1980a: 9, 1981b: 53; Scheerpeltz & Winkler 1930: 256; Schilsky 1909: 187; Schimitschek 1951a: 101; Schiodte 1873: 100; Schmitz 1898: 157; Schmidt 1959: 8–9, 1960: 83; Schwerdtfeger 1981: 188; Seidl 1876: 4; Seidlitz 1872: 391, 1891a: 559, 1891b: 605; Sharp & Fowler 1893: 34; Shiraki 1952; Siebke 1875: 282; Sierpinski 1966; Silva, F. A. E. & Serrao 1967; Souphieff & Scherbinovskaja 1937: 47, 102; Sparre-Schneider 1889: 60; Stark 1926a: 333, 1926b: 102, 1927a: 15–19, 1927b: 88, 1931a: 24, 1931d: 544, 1936e: 142, 1952: 190; Stein 1868: 113; Stein & Weise 1877: 163; Stephens 1829a: 147, 1830: 363, 1839: 209; Stierlin 1898: 432; Stierlin & Gautard 1871: 291, 1906: 205; Straby 1975: 8; Strand 1946: 596; Strand & Hanssen 1935: 70; Strauch 1861: 123; Sturm 1826: 156, 1843: 229; Thomson 1865: 354, 1868: 218; Tragardh 1914: 83, 1939b: 151, 172; Tredl 1907: 10; Tschorbadjiev 1929: 161; Ulanowski 1884: 6; Vappula 1965: 152; Villa & Villa 1833: 26; Villasenor 1966; Voute 1957: 173, 1963; Wachtl 1870: 259; Wadde-Love & Webb 1948: 109; Wegelius 1960: 106; Wessel 1877: 391; Westhoff 1882: 237; Wichmann 1924: 15, 1927a: 58, 1955a: 95, 101; Wiepken 1883: 89; Winter, T. G. 1983: 27; Wiren 1945: 43; Wolff 1927: 75; Yakubyuk 1959: 50; Yanovskii 1974, 1977a, 1989: 64; Yanovskii & Dmitrienko 1983; Yanovskii & Tegshzhargal 1985: 407; Zetterstedt 1828: 342, 1840: 191; Zinovjev 1955: 187; Zocchi 1959: 103; Zoufal 1920: 20. (**tx**) Acloque 1896; Alkan 1946: 140; Altman 1844; Aslam 1961: 441, 442, 459, 472; Aullo 1919; Bach 1854, 1864; Bakke 1960: 310; Balachowsky 1944b, 1949a: 135; Barbey 1901: 10, 19, 49; Bechstein 1818: 75, 189; Bechstein et al. 1805: 881; Bedel 1888b: 392, 409; Beffa 1949, 1961; Behlen 1826; Bertolini 1872; Bevan 1987: 116; Blanchere & Robert 1889; Blandford 1894b, 1894d; Boas 1923: 324; Brancsik 1871; Bruck 1936a; Burton et al. 1968:

191; Cabral 1959; Calwer 1858; Carpentier & Delaby 1908; Castelnau 1840; Ceballos 1945; Chamberlin 1939: 215–216; Chapuis 1869: 33, 1873: 241; Chapuis & Candeze 1853; Chapuis & Eichhoff 1875: 197; Chararas 1962c: 226; Charvat 1950; Chevrolat 1838; Choo 1983: 53; Chorbadzhievo 1924d; Csiki 1907; Dammerman 1950b: 13; DeGeer 1775: Dejean 1821, 1825; Doebner 1860, 1862a; Dombrowsky 1887; Duffy 1953: 11; Duftschmidt 1825; Eggers 1929c, 1929e: 43, 1929f: 103, 1933f: 56, 1943b: 50–51; Eichhoff 1864b: 25–26, 1878d: 400, 1881a: 37, 101, 1883a: 102, 124; Endrodi 1957b: 413; Erickson 1836: 48; Escalera 1919: 104; Escherich 1923b: 429, 479, 519; Escherich & Escherich 1897; Everts 1903: 746, 1922: 639; Fabricius 1775, 1787: 37, 1792: 367, 1801: 392; Fairmaire 1864: 149; Fankhauser 1912a; Fauvel 1889, 1906; Ferrant 1911; Fleischer 1905, 1927; Flohrer 1948; Formanek 1907: 20; Fransen 1948: 213–216; Fricken 1889: 276; Fuchs 1912a, 1913; Gabler 1949b, 1955; Gemminger & Harold 1872: 2671; Gillanders 1908; Girard 1873; Gmelin 1790: 1602; Goeze 1777: 130; Grune 1979: 54, 55; Gyllenhal 1813: 337, 1827: 618; Hagedorn 1910a: 56; Hansen, V. 1956, 1964: 459; Henry 1892: 15; Henschel 1876a: 92, 242, 1895a: 139; Herbst 1798: 106; Hopkins 1909a: 3, 1914: 117, 125, 131, 1915c: 220–221; Houlbert 1922a:pl. 1, 1922b: 251; Iablokoff-Khnzorian 1961: 105; ICZN 1963: 276; Illiger 1907: 321; Jacobi 1906: 148; Jacquelin du Val & Fairmaire 1868: 109; Joly 1976, 1976b: 243; Judeich & Nitsche 1895: 447, 462; Karpinski & Strawinski 1948: 154; Knotek 1892a: 33; Koch 1913: 10, 95, 1928: 78, 1932: 110; Krausse 1920: 169; Kuhnt 1913: 1051; Kurenzov 1941a: 120–121, 1948b: 105; Lacordaire 1866: 360; Latreille 1803: 204, 1804: 108; LeConte 1876: 386; Lekander 1959b: 33; Letzner 1891: 373; Leunis 1886: 179; Lieutier et al. 1984: 33; Lindemann 1879: 54; Linnaeus 1758: 355, 1767: 143; Louzil 1961: 105; Lovendal 1889b: 35, 1890c: 210, 1898: 70; Lucas 1920: 427; Lucht 1987: 276; Luigioni 1929: 993; Lunardoni & Leonardi 1889: 423; Marsham 1802: 57; Meixner 1937: 12, 14; Munro 1916b: 114, 1917b: 142; Murayama 1903b: 8, 1934e: 298, 1936a: 125, 1939: 137, 139, 1940a: 232, 1950b: 1291, 1953a: 7, 1954b: 159, 1955: 98; Nakane et al. 1963: 382, pl. 191; Negru 1966b: 400; Niisima 1909: 130, 1910a: 6, 1913a: 2; Nobuchi 1966d: 15; Nordlinger 1848: 249, 1856: 35; Novak, V., Hrozinka, & Stary 1976: 57; Nunberg 1928a: 140, 1929c: 117, 1954: 32; Nusslin 1911a: 155, 378, 1912c: 271; Olivier 1795b: 8; Panzer 1795a: 287; Paykull 1800: 152; Perris 1877a: 414; Pfeffer 1932b: 14, 1941b: 2, 1947e: 15, 1955a: 124, 1989a: 36, pls. 1–2, 1989a: 36; Portevin 1935: 318; Postner 1974: 399; Quaschik 1953: 35; Questienne 1979: 114; Ratzeburg 1837: 132, 171, 1839: 157, 209; Redtenbacher 1849: 364, 1849b: 27, 1858: 827, 1874: 368; Reitter 1894a: 53, 1913a: 48, 1916: 281; Rhumbler 1922: 280, 1927: 291; Ritchie 1915: 352, 1917: 213; Rupertsberger 1879: 231, 1880: 226; Saalas 1913a: 66, 77, 1949: 341, 353; Sahlberg 1836: 136; Sandhall 1975: 85; Sawamoto 1940b: 141–144; Schedl 1928: 109–111, 1934f: 1635, 1946b: 51–52, 1952f: 87, 1959h: 99, 1980a: 9, 1981b: 53; Scherb 1971; Schimitschek 1937c: 47, 1955c: 77; Schlechtendal & Wunsche 1879: 124; Seidlitz 1872: 391, 1891a: 559, 1891b: 605; Sokanovskii 1929: 521–526, 1936: 73–74, 1954: 15, 1959b: 93, 94; Speight 1980: 158; Spessivtsev 1913a: 59–60, 1919: 250–251, 1921a: 315, 1922a: 465–490, 1922b: 75–80, 1923: 200–214, 1925a: 165, 1925b: 9, 1925d: 105, 1928: 221–256, 1931: 37–38, 1938: 159–162; Stark 1952: 190; Stephens 1829a: 147, 1829b: 12, 1830: 363, 1839: 209; Stierlin 1898: 432; Stresemann et al. 1989: 352; Taschenberg 1880: 204; Thomas, J. B. 1967; Thomson 1865: 354, 1868: 218; Verhoeff 1896: 111; Westwood 1840: 39; Wilson, G. F. & Becker 1960: 86; Wissman 1846: 24; Zetterstedt 1828: 342, 1840: 191; Zivojinovic 1963: 448. (**ms**) Andersson, S. O. 1975; Anonymous 1971p, 1972i, 1974i, 1974r, 1975j, 1978n; Bevan 1964b; Boocock 1959b; Borgreve 1881; Brandes 1901; Burton et al. 1968: 190; Chararas 1959d, 1971a: 853; Chararas & Berton 1961; Crooke 1954; D. 1879; Eckstein 1898c, 1898d; Eichhoff 1880b: 367; Elsner 1963; Escherich 1932b; Fuchs 1911b; Gotz 1877; Hartig 1834: 412, 413; Hedstrom 1976; Heinemann 1908a; Henschel 1880b; Kalandadze 1927; Kalandra 1971: 106; Kangas 1958c: 93; Kholodkovskii 1893: 309; Kozikowsky 1929: 253; Kraatz 1876c: 107; Laudin 1953: 24, 99; Lekander 1959a: 84, 1971a, 1975b; Lieutier 1984a; Lovendal 1890a: 131; Lucas 1920: 427; Martinek 1974: 3; Maslov & Demakov 1982; Mastumura 1931; McFadden et al. 1982; Merino-Rodriguez 1966: 38; Michalski 1959a: 291; Mozolevskaya 1984; Olofsson 1975; Ratzeburg 1871b: 400; Ritter 1929: 553; Sandhall 1975; Schimitschek 1955b: 102; Schwappach 1924: 56; Schwerdtfeger 1946b: 62; Sedlaczek 1902a: 175, 1907: 82, 1936: 200; Sinreich 1962, 1969; Sunfor 1979; Vorontzov 1968; Wichmann 1961: 333; Yamane 1981: 470.

testaceus Fabricius 1787: 37 (*Bostrichus*). Syntypes, sex?; Europe; UZMC, Copenhagen. Synonymy: Ratzeburg 1837: 171, Hagedorn 1910d: 14.

References: (**cn**) Hartig 1811: 320, 330, 1820: 320, 330, 1832: 280, 288. (**ec**) Hartig 1832: 280, 288. (**hb**) Hartig 1811: 320, 330, 1820: 320, 330, 1832: 280, 288; Jester 1817. (**ds**) Beck 1817; Dejean 1821, 1825; Hagedorn 1910d: 14; Herbst 1793: 110; Stephens 1829a: 147; Sturm 1826: 156. (**tx**) Balachowsky 1949a: 136; Bechstein et al. 1805: 105; Dejean 1821, 1825; Eggers 1929e: 43; Fabricius 1787: 37, 1792: 367, 1801: 394; Fransen 1948: 216;

Gmelin 1790: 1603; Hagedorn 1910d: 14; Panzer 1795a: 288; Ratzeburg 1837: 171; Sahlberg 1836: 137; Schedl 1946b: 52; Stephens 1829a: 147; Villers 1879: 214.

abietinus Fabricius 1792: 367 (*Bostrichus*). Syntypes 2, sex?; Germaniae; UZMC, Copenhagen. Synonymy: Zimsen 1964: 189.
References: (**tx**) Eggers 1929e: 43; Fabricius 1791: 391, 1792: 367; Herbst 1793: 120; Jablonsky 1785: 120; Panzer 1795a: 286; Zimsen 1964: 189.

analogus LeConte 1868: 172 (*Hylurgus*). Holotype, sex?; New York [USA]; MCZ, Cambridge. Synonymy: LeConte 1876: 386.
References: (**ds**) Henshaw 1882: 269; Leng 1920: 339. (**tx**) Balachowsky 1949a: 136; Gemminger & Harold 1872: 2671; LeConte 1868: 172, 1876: 386; Schedl 1946b: 52.

major Eggers 1943b: 50 (*Blastophagus*). Syntypes 3, sex?; Kobe, Japan; 2 in MNB, Berlin, 1 in Hamburg Museum transferred to Eggers Collection, this syntype is now in NHMW, Wien. Synonymy: Schedl 1946b: 52.
References: (**tx**) Eggers 1943b: 50–51; Schedl 1946b: 52, 1955d: 273, 1979c: 145; Sokanovskii 1954: 290.

***puellus* (Reitter)** 1894a: 53 (*Myelophilus*). Syntypes, sex?; Permskoe, Siberia, USSR; NHMB, Budapest.
Distribution: Asia (Sakhalin Island, Siberia, Ussuri in E USSR).
Hosts: *Picea jezoensis, P. ajanensis, Pinus koraiensis*.
References: (**cn**) Kurenzov 1935c: 187, 1950a: 13, 1956a: 90. (**ec**) Kurenzov 1934a: 54. (**hb**) Budkov 1897; Krivolutskaya 1956: 828; Kurenzov 1935a: 28, 1948b: 109, 1950d: 197; Stark 1952: 193. (**ds**) Budkov 1897; Hagedorn 1910d: 15; Heyden 1898: 77; Kleine 1912b: 169, 1914b: 249; Krausse 1920: 169, 175; Krivolutskaya 1956: 828, 1983; Kurenzov 1934a: 54, 1935a: 28, 1935c: 187, 1936a: 113, 1936b: 351, 1938a: 64, 1963b: 115, 1965, 1967; Nobuchi 1985c: 5–6; Reitter 1894a: 53; Stark 1952: 193. (**tx**) Eggers 1929f: 103, 1933f: 56; Hagedorn 1910a: 56; Krausse 1920: 169, 175; Krivolutskaya 1956: 828, 1958: 115, 147; Kurenzov 1941a: 119–121, 1948b: 109, 1950: 219; Reitter 1894a: 53, 1913a: 48; Schedl 1934f: 1635, 1946b: 52, 58; Spessivtsev 1919: 23; Stark 1952: 193.

starki Eggers 1929f: 104 (*Blastophagus*). Lectotype, sex?; Ussuri, USSR; USNM, Washington, designated by Anderson & Anderson 1971: 31. Synonymy: Eggers 1933f: 56.
References: (**tx**) Anderson, W. H. & Anderson 1971: 31; Eggers 1929f: 103–104, 1933f: 56; Schedl 1934f: 1635, 1946b: 52, 58, 1979c: 236.

puellus orientalis Krivolutskaya 1956: 828 (*Blastophagus*). Holotype, sex?; Kraanogorak, near Krasnogorsk, Kotan River Valley, Sakhalin Island; not located.
References: (**ds**) Kurenzov 1967. (**tx**) Krivolutskaya 1956: 828, 1958: 115.

Genus *Dendroctonus* Erichson

DENDROCTONUS ERICHSON 1836: 52. Type-species: *Bostrichus micans* Kugelann, subsequent designation by International Commission on Zoological Nomenclature 1963b (China 1963a: 276–278).
Keys: Hopkins 1909a: 69, Wood 1963: 26, 1982b: 151; Yin, Huang, & Li 1984: 56 for China.
References: (**ay**) Lanier 1968: 4167; Nobuchi 1969a: 50; Schofer & Lanier 1970; Schonherr 1970b. (**bv**) Anonymous 1972w; Bakke 1971b, 1973; Chapman, J. A. 1957: 3–4; Kangas 1981; Kinser et al. 1969: 477–478; Pitman 1969: 905–906; Pitman et al. 1968: 168–169, 1969: 363–366; Schonherr 1970b; Schurig et al. 1983; Stark, R. W. 1968b. (**cn**) Annand 1947: 15; Bailey 1958: 2–3; Barbey 1901: 55; Becker, G. 1951: 186–209, 1952: 170–177, 1953: 339–373; Bigger 1945: 32–36; Craighead 1925: 340–354, 1928: 886–887, 1941: 367–392; Craighead et al. 1931: 1001–1018; Felt 1906: 337; Garcia de Viedma 1963: 257–277; Gobeil 1939: 71–89; Hewitt 1914: 501–518; Inda 1930: 173–178; Johnson 1940: 773–776; Judeich & Nitsche 1895: 445–446; Kangas 1981; Kataev 1968a; Keen 1949: 427–432; Klotz 1958: 31, 50–52; Krantz 1965: 145–153; Lunn 1925: 162; Maskew & Strong 1920: 721–735; Matson & Hain 1985; McGraw & Farrier 1969: 162; Nelson 1934: 327–353; Preston 1925: 49–61; Price 1955: 18; Rumbold 1931: 847–873; Schmitz & Taylor 1969: 8; Shull 1944: 5–6; Silver & Ross 1955: 118; Snyder 1927: 46; Swaine 1924: 1–26, 1925: 261–266; Torrent & Romanyk 1967: 84; Wickman 1965: 14; Yasinski & Pierce 1957: 1–18; Yates 1910: 517. (**ec**) Ashraf & Berryman 1969: 12–14; Chapman 1962b: 88; Chararas & Berton 1961: 235–243; Johnson, M. A. & Croteau 1987; Lindquist 1970a: 980; McCain, Koehler, & Tjosvold 1987; Rice 1968: 53–56; Richmond & McGuffin 1945: 43; Vite & Luhl 1975: 178. (**hb**) Anderson, R. F. 1960: 214; Bright & Stark 1973: 28; Burgos & Saucedo 1983: 55; Hopkins 1909b: 1–169; Miller, J. M. & Keen 1960: 51; Schwerdtfeger 1955: 1; Wood, S. L. 1963, 1982b: 150, 1986a: 42. (**ds**) Allison 1978; Bright & Stark 1973: 28; Burgos & Saucedo 1983: 55; Chamberlin 1918: 1–40, 1939: 144–168, 1958: 64–79; Hagedorn 1910d: 19–23; Harrington 1884: 278; Herrick 1910; Hopping 1922: 128–134; McGugan et al. 1958: 32, 75, 1959: 1–114; Provancher 1877: 572; Scheerpeltz & Winkler 1930: 250; Swaine 1909: 95; Wood, S. L. 1963: 1–117, 1982b: 150, 1986a: 42. (**tx**) Anderson, R. F. 1960: 214; Arnett 1960: 1041; Balachowsky 1949a: 133; Beal & Massey 1945: 58; Blackman 1922b: 56–57; Blandford 1895b: 143–146; Bright 1976d: 53; Bright & Stark 1973: 28; Bruck 1936a: 41; Chamberlin 1939: 144–168, 1958: 64–79; Chapuis 1869: 34,

1873: 242; China 1963a: 276–278; Dietz 1890: 27; Dodge 1938: 26–27; Eichhoff 1864b: 26, 44, 46, 1881a: 125; Erichson 1836: 52; Hagedorn 1910a: 59–60; Hopkins 1902: 3, 1909a: 1–164, 1909b: 1–169; ICZN 1963b; Krivolutskaya 1958: 115; Kurenzov 1941: 116–117; Lacordaire 1866: 360; LeConte 1876: 384; LeConte & Horn 1883: 523; Lyon 1958: 82; Munro 1923: 192; Nunberg 1954: 30–31; Pfeffer 1955: 121–123, 1989a: 34; Reitter 1894: 53, 1913a: 47; Saalas 1914: 304–306; Schedl 1938: 40, 1940a: 339, 1955g: 4, 1981b: 53; Schimitschek 1937; Spessivtsev 1931: 86; Swaine 1914: 13–35, 1918a; Thatcher, T. O. 1957: 28; Thomas, J. B. 1965: 375–400; Wood, S. L. 1961: 43, 319–321, 1963: 1–117, 1982b: 150, 1986a: 42; Yin & Huang 1981: 556; Yin, Huang, & Li 1984: 56; Zimmermann 1868: 148–149. (**ms**) Chararas 1971a: 853; Kongkathip, Kongkathip, & Sookkho 1987; Schurig et al. 1983.

adjunctus **Blandford** 1897a: 147. Lectotype ♂; Totonicipan, Guatemala; BMNH, London, designated by Wood 1982b: 167.

Figures: Schwerdtfeger 1959a: 44 (adult, galleries), Wood 1963: 7, 13.

Distribution: North America (Guatemala/ Chihuahua, Mexico, Morelos, Puebla in Mexico/ Arizona, Colorado, New Mexico, Utah in USA).

Hosts: *Pinus ayacahuite, P. hartwegii, P. leiophylla, P. montezuma, P. ponderosa, P. pseudostrobus, P. rudis, P. tenuifolia.*

References: (**ay**) Barras & Perry 1971a; Farris 1969: 528; Francke-Grosmann 1966c; Hopkins 1909a: 157; Lanier, Hendrichs, & Flores 1988b; Lyon 1958: 582–584; Payne et al. 1973; Stock, M. W., Gregoire, & Furniss 1987; Thomas, J. B. 1967. (**bv**) Barr, B. A. 1969: 640; Du 1987; Hughes, Renwick, & Vite 1976; Johnson, N. E. & Pettinger 1961a: 6; Klassen, Ridgway, & Inscoe 1982; Livingston, W. H. et al. 1983; Lucht, Frye, & Schmid 1974; Payne & Wood 1981: 491; Schmid 1974; Schwerdtfeger 1960c. (**cn**) Alatorre Rosas 1978; Anonymous 1968p, 1969e, 1970h, 1970t, 1971v, 1972p, 1972t, 1974v, 1975e, 1976f, 1977g; Baker, B. H. 1969; Beatty 1980: 4; Becker, G. 1951: 9, 1952a; Buffam & Flake 1971; Cahill & Lister 1971; Celaya 1978; Chansler 1967; Chansler & Pierce 1966: 1357–1359; Cibrian & Campos 1980; Flake & Germain 1970: 24; Frye 1971b: 25; Fuller & Hostetler 1980; Gentry, G. R. et al. 1979: 808; Germain, Weiss, & Loomis 1973a,1973b: 41; Hamel 1980: 782; Islas-Salas 1968,1974; Johnson, D. W. & Creasap 1978a; Johnston 1939; Kinzer & Reeves 1985; Klein, W. H. 1968; Klein, W. H. & Parker 1970: 17; Klein, W. H. & Stipe 1971: 15; Klein, W. H. & Tegethoff 1970; Klein, W. H. et al. 1973: 25; Lessard 1978; Lessard & Walters 1978: 24; Lister & Cahill 1970: 22; Lowe & Mover 1980; Lucht 1966: 29; Massey & Rodriguez 1967b; McGregor 1977b; Neal 1979: 808; Parker, D. L. 1971a, 1973b, 1974; Parker, D. L., Stipe, & Tegethoff 1972; Parker, D. L. et al. 1977: 35; Payne & Wood 1981: 491; Ragenovich 1979,1980b: 20; Reeves, J. M. & Kinzer 1978; Rogers, T. J. 1981; Schwerdtfeger 1953a: 120, 1954: 280, 1955: 63, 1956b: 41, 1957b: 584–637, 1959a: 42, 54, 1960c; Smith, R. H., Trostle, & McCambridge 1977; Stevens, Brewer, & Leatherman 1980: 21,1982: 22; Stevens & Flake 1974; Walters, J. W. & Lessard 1978: 11. (**ec**) Barras & Parry 1971a; Becker, G. 1952b, 1953, 1954, 1955; Berryman 1966b: 519; Carlson 1979: 1114; Chansler 1967; Cibrian & Campos 1980; Davidson 1978; Francke-Grosmann 1966c; Furniss, R. L. & Carolin 1977: 347; Kaarik 1973; Livingston, R. L. 1980; Livingston, R. L. & Berryman 1972: 1793; Livingston, R. L. et al. 1983; Mason, W. R. M. 1978; Massey 1966a, 1966c: 424–440; Massey, Lucht, & Schmid 1977; Perusquia 1982; Poinar 1975: 151; Schwerdtfeger 1960c: 1; Villa Castillo 1985. (**hb**) Atkinson et al. 1986: 15; Becker, G. 1951, 1952a, 1953, 1954, 1955; Chansler 1967: 760–767; Cibrian & Campos 1980; Cooper, M. E. & Stephen 1978: 574; Furniss, R. L. & Carolin 1977: 347; Hopkins 1909a: 157; Hughes, Renwick, & Vite 1976; Islas-Salas 1968: 21, 1974; Lucht, Frye, & Schmid 1974; Martinez, G. 1978; Massey 1966c; Massey, Lucht, & Schmid 1977; Massey & Rodriguez 1967b; Schmid 1974; Schwerdtfeger 1956b: 41, 1959a: 42, 54, 1960c; Stevens, Brewer, & Leatherman 1980: 21, 1982: 22; Wood, S. L. 1963: 51, 1982b: 167. (**ds**) Acciavatti & Walters 1977; Acciavatti & Weiss 1974; Anonymous 1968p, 1969e, 1970h, 1972t, 1975e, 1977g; Atkinson & Equihua 1985a: 73, 1985b: 229; Atkinson et al. 1986: 16; Baker, B. H. 1969; Bates 1832; Becker, G. 1951: 186–209, 1952a, 1953, 1954: 41–57; Blackwelder 1947; Chansler 1967; Choo, Woo, & Kim 1981: 202; DeLeon 1938; Dominguez & Carrillo 1976: 141; Furniss, R. L. & Carolin 1977: 347; Hagedorn 1910d: 19; Hopkins 1909a: 157; Hughes, Renwick, & Vite 1976; Kleine 1912b: 176, 1914b: 358; Lanier, Hendrichs, & Flores 1988b; Massey & Rodriguez 1967b; Perusquia 1978; Schedl 1963c: 156, 1977e: 42; Schwerdtfeger 1959: 43–44; Thomas, J. B. 1966; Wood, S. L. 1963: 51, 1982b: 167. (**tx**) Blandford 1895b: 147, 1897a: 147; Chamberlin 1939: 144; DeLeon 1938; Hagedorn 1910a: 60; Hopkins 1909a: 157; Lanier, Hendrichs, & Flores 1988a, 1988b; Perusquia 1978; Schedl 1955g: 8; Thomas, J. B. 1965c, 1967; Wood, S. L. 1963: 7, 13, 51, 1982b: 167. (**ms**) Anonymous 1972p; Thalenhorst 1962: 347.

convexifrons Hopkins 1909a: 87. Holotype ♀; Williams, Arizona [USA]; USNM, Washington. Synonymy: Wood 1963: 52.

References: (**ay**) Hopkins 1909a: 87–90; Lyon 1958: 583. (**bv**) Barr, B. A. 1969: 640; Bedard, W. D. Jr., Silverstein, & Wood 1970; Bedard,

W. D. Jr. et al. 1969. (**cn**) Anonymous 1958a: 6, 1960i, 1960j: 18, 1961h, 1962h, 1964d; Beal 1939; Blackman 1931c: 29–30; Bongberg 1956a, 1962; Doane et al. 1936; Escherich 1912a, 1913; Essig 1926: 513, 1958: 513; Felt 1924: 252–259, 1926: 249, 252, 1930a: 249, 252; Hopkins 1908d: 549, 1909b: 53–56; Keen 1938: 102, 1952c: 135; Lucht & Moore 1963: 19; Pearson 1950: 154; Price 1958: 61–63; Swaine 1925: 261–266; Yasinski 1957: 1–3; Yasinski & Pierce 1957: 4. (**ec**) Anonymous 1964d, 1964w; Blackman 1931c; Davidson 1961: 354; Hopkins 1909b: 53–56; Keen 1938: 102; Massey 1961: 354; Swaine 1925c: 263; Thompson, W. R. 1965: 14; Thompson, W. R. & Simmonds 1964: 27. (**hb**) Anonymous 1963a; Beal 1939: 11–12; Blackman 1931c; Bongberg 1959a; Chamberlin 1939: 158–159; Doane et al. 1936; Essig 1926: 513, 1958: 513; Felt 1926: 249, 252, 1930a: 249, 252; Hopkins 1909a: 87–90, 1909b: 53–56; Keen 1938: 102, 1952c: 135. (**ds**) Anonymous 1958a: 6, 1960: 12; Blackwelder 1947; Bongberg 1956a; Bongberg & Bennett 1960: 1; Chamberlin 1925, 1939: 158–159; DeLeon 1938; Essig 1926: 513, 1958: 513; Felt 1926: 249, 252, 1930a: 249, 252; Ferrer 1942; Hagedorn 1910d: 20; Hopkins 1909a: 87–90, 1909b: 53–56; Keen 1929a: 17, 1938: 102, 1952c: 135; Kleine 1912b: 176, 1914b: 386, 1934a: 132; Leng 1920: 338. (**tx**) Chamberlin 1939: 158–159; DeLeon 1938; Hagedorn 1910a: 60; Hopkins 1909a: 87–90; Keen 1929a: 17; Muesebeck 1942: 95, 1950: 131; Schedl 1940a: 339; Wood, S. L. 1963: 51–52. (**ms**) Bongberg 1959a; Swaine 1925c: 263.

***approximatus* Dietz** 1890: 28, 31. Lectotype ♀; Colorado [USA]; Philadelphia Academy of Science, designated by Hopkins 1909a: 102.

Figures: Wood 1963: 7, 13 (as *parallelocollis*).

Distribution: North America (Guatemala/ Honduras/ Chiapas, Chihuahua, Distrito Federal, Durango, Guerrero, Mexico, Michoacan, Morelos, Oaxaca, Puebla, Tlaxcala, Veracruz in Mexico/ Arizona, Colorado, New Mexico, Utah in USA).

Hosts: *Pinus ayacahuite, P. chihuahuana, P. engelmannii, P. hartwegii, P. leiophylla, P. montezumae, P. ponderosae, P. rudis, P. teocote.*

Notes: (3) Wood 1982a: 164 (from 1909 to 1969 this species was erroneously cited by all authors as *D. parallelocollis*).

References: (**ay**) Hopkins 1909a: 104; Lanier, Hendrichs, & Flores 1988a, 1988b; Lyon 1958: 583; Stock, M. W., Gregoire, & Furniss 1987. (**cn**) Anonymous 1958a: 6, 1975d; Beal 1939: 11–12; Blackman 1931c: 30; Bongberg 1956a; Burke 1908: 115; Craighead et al. 1931; Doane et al. 1936; Felt 1906: 249, 254, 1926: 248, 251–254; Felt & Rankin 1932: 405; Hopkins 1899c: 392, 1903a: 61, 1903e: 281; 1904a: 44, 1905b: 81, 1905c: 11, 1909b: 75–80; Keen 1938: 102, 1952c: 135; Schwarz 1902: 32; Schwerdtfeger 1957b: 585, 1959a: 43, 56; Stevens, Brewer, & Leatherman 1982: 23; Swaine 1925: 261–266; Yasinski 1956: 1–3; Yasinski & Pierce 1957: 4. (**ec**) Blackman 1931c; Furniss, R. L. & Carolin 1977: 348; Hopkins 1903: 281, 1909b: 75–80; Keen 1938: 102; Massey 1961: 358; Swaine 1925c: 263; Thompson, W. R. & Simmonds 1965: 27. (**hb**) Atkinson et al. 1986: 16; Blackman 1931: 30; Burke 1908; Chamberlin 1939: 159; Doane et al. 1936; Felt 1926: 248, 254, 1930a: 248, 254; Felt & Rankin 1932: 405; Furniss, R. L. & Carolin 1977: 348; Hopkins 1899c: 392, 1903: 281, 1904a: 44, 1909a: 104, 1909b: 77; Keen 1938: 102, 1952c: 135; Pierce 1907: 294; Schwerdtfeger 1959a: 43, 56; Stevens, Brewer, & Leatherman 1982: 23; Wood, S. L. 1982b: 164. (**ds**) Anonymous 1958a: 6, 1975d; Atkinson & Equihua 1985a: 73, 1985b: 229; Atkinson et al. 1986: 16; Bongberg 1956a; Chamberlin 1925, 1939: 159; Cockerell et al. 1907; Fall & Cockerell 1907: 218; Felt 1926: 248, 254, 1930a: 248, 254; Felt & Rankin 1932: 405; Ferrer 1942; Furniss, R. L. & Carolin 1979; Hagedorn 1910d: 19; Hendricks & Enkerlin 1979; Henshaw 1895: 44; Hopkins 1903a, 1909a: 104, 1909b: 75–80; Keen 1929a: 17, 1938: 102, 1952c: 135; Kleine 1912b: 175, 1914b: 386, 1934a: 132; Lanier, Hendrichs, & Flores 1988a, 1988b; Leng 1920: 338; Schedl 1955g: 11; Swaine 1909: 95; Wickham 1896a: 310; Wood, S. L. 1957c: 396, 1982b: 164. (**tx**) Chamberlin 1939: 159; Dietz 1890: 28, 31; Hagedorn 1910a: 60; Hopkins 1905b: 80, 1909a: 104; Keen 1929a: 17; Lanier, Hendrichs, & Flores 1988a, 1988b; Muesebeck 1942: 95, 1950: 130; Schedl 1940a: 339; Swaine 1909: 95; Wood, S. L. 1957c: 396, 1969c: 121, 1982b: 164.

***armandi* Tsai & Li** 1959: 80. Holotype, sex?; North China; IZAS, Beijing.

Figures: Tsai & Li 1959: 82, Li, Dang, & Shi 1977: 186; Li & Zhou 1980: 186.

Distribution: Asia (Shanxi, Sichuan, Yunnan in China).

Hosts: *Pinus armandii, P. tabulaeformis.*

References: (**cn**) McFadden et al. 1982; Yang 1989c. (**ec**) Li & Zhou 1980: 67; Yang 1987, 1989c. (**hb**) Li & Zhou 1980: 67; Yang 1989c. (**tx**) Li, Dang, & Shi 1977: 67; Tsai & Li 1959: 80, 82. (**ms**) McFadden et al. 1982.

prosorovi Kurenzov & Kononov 1966: 29. Holotype, sex?; Yunnan Province, China; Institute of Soil Biology, Academy of Science, Far Eastern Branch, Novosibirsk USSR. Synonymy: Wood 1988a: 34.

References: (**tx**) Kurenzov & Kononov 1966: 29; Tsai & Li 1959: 80; Wood, S. L. 1988a: 34.

***brevicomis* LeConte** 1876: 386. Holotype ♀; middle California [USA]; MCZ, Cambridge.

Figures: Bright & Stark 1973: 149, Swaine 1914: 13 (adult), 1918a:pl. 12 (adult), Wood 1963: 5, 11, 13, 16.

Distribution: North America (British Columbia in Canada/ Chihuahua in Mexico/ Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, W Texas, Utah, Washington in USA).

Hosts: *Pinus ponderosa, P. coulteri*, rarely other *Pinus* spp.

Notes: (1) It is obvious from LeConte's treatment of this species that the intended original spelling of the name was *brevicornis*; however, the misspelling is so widely established that a correction should not be attempted.

References: (**ay**) Borden 1969: 874; Cerezke 1964: 488; Francke-Grosmann 1966c; Godbee & Franklin 1978: 1087; Hopkins 1909a: 81–85; Hughes 1973c; Hughes & Renwick 1977a; Lanier, Hendrichs, & Flores 1988a, 1988b; Lyon 1958: 583; Miller, J. M. & Keen 1960; Paine & Birch 1983; Payne 1970, 1975; Payne et al. 1973; Renwick 1967; Renwick et al. 1976; Smith, R. H. 1965b, 1966e; Stock, M. W., Gregoire, & Furniss 1987; Sturgeon & Robertson 1985; Tate & Bedard 1967: 1618; Thomas, J. B. 1967. (**bv**) Annila 1971a: 14; Anonymous 1968a; Bakke 1973; Barlow 1966; Barr, B. A. 1969: 640; Bedard, W. D. Jr. 1980; Bedard, W. D. Jr. & Wood 1974b, 1981; Bedard, W. D. Jr. et al. 1969, 1980, 1985; Bellas, Brownlee, & Silverstein 1969; Borden 1967: 1182; Borden et al. 1980: 108; Browne, L. E. 1978; Browne, L. E. et al. 1979; Byers 1982, 1983a, 1983c, 1987, 1988a, 1988b, 1989; Byers & Wood 1980,1981b; Byers et al. 1984; Callaham & Shifrine 1960: 146; Chararas 1979b; Chararas et al. 1982: 1095; Christiansen & Huse 1980: 473; Coke, Williams, & Natarajun 1977; Daterman 1979; DeMars & Roettgering 1982; DeMars et al. 1986; Du 1987; Dudley 1971; Eaton & Lejeune 1967; Ferrell 1971: 1722; Franklin 1968; Gara & Coster 1968: 77–86; Gara & Vite 1962; Gargiullo & Berisford 1981: 392; Goheen et al. 1985; Gore, Pearce, & Silverstein 1976; Gustafson 1972; Gustafson, Bedard, & Wood 1971; Hawksworth 1985; Hughes 1973c; Hughes & Pitman 1970: 329–336; Hughes & Renwick 1977a; Hughes, Renwick, & Vite 1976: 1167; Hynum & Berryman 1980: 185; Inscoe 1982; Inscoe & Beroza 1976: 169; Jacobson 1965, 1972; Johnson, Philip C. 1966a; Kinzer et al. 1969; Klassen, Ridgway, & Inscoe 1982; Knolle & Schafer 1975; Kocienski & Ostrow 1976; Kohnle & Vite 1984b; Kozlowski 1969: 121; Lanier et al. 1972: 1922; Libbey et al. 1974a; Lindgren et al. 1983: 307; Look 1976b; McGregor & Miller 1989; McMullen & Atkins 1962b: 1321; McNew 1970; Meyer 1977; Miller, J. M. & Keen 1960; Miller, M. C. et al. 1989; Moeck, Wood, & Lindah 1981; Moore 1972: 62; Mori 1974a, 1974b, 1976d; Mundy, Lipkowitz, & Dirks 1975; Ohmart & Voight 1982: 340; Paine & Birch 1983; Payne 1970, 1974b, 1975; Payne & Wood 1981: 479; Pitman 1966b, 1969a, 1969d; Pitman & Vite 1969: 147, 1971; Raffa & Berryman 1982a: 97; Renwick, Pitman, & Vite 1976; Renwick & Vite 1968: 65–68, 1970; Rodin et al. 1971; Roelofs 1978; Roettgering 1973; Rudinsky 1973a: 511, 1973b: 581, 1979a: 408; Rudinsky & Michael 1973, 1974; Rudinsky et al. 1974: 90, 1976; Ryker 1988; Seu & Mori 1986; Shepherd 1965: 212; Silverstein 1969, 1970a, 1970b, 1971b, 1974, 1977; Silverstein & Young 1976: 2; Silverstein et al. 1968: 889–891; Smith, R. H. 1961b, 1966a: 1–12, 1967a: 1746–1747, 1969: 1–13, 1977; Stark, R. W. 1966; Stark, R. W. et al. 1968; Stephen & Dahlsten 1976a; Stewart, T. E. et al. 1977; Sturgeon 1980a; Tilden & Bedard 1985, 1988; Tilden et al. 1979, 1981, 1983, 1987; Trostle 1971; Vite 1962, 1969, 1970b: 249–350, 1975; Vite & Pitman 1967, 1968: 168–170, 1969a, 1970; Wasserman & Barber 1969; Weaver, N. 1978a; Whitesell & Buchanan 1986; Wood, D. L. 1962a: 473, 1967b, 1968, 1970a, 1970b, 1976b, 1978, 1979a, 1980b; Wood, D. L. & Bedard 1974a, 1974b, 1977; Wood, D. L. & Bushing 1963: 1077; Wood, D. L. & Silverstein 1970; Wood, D. L. & Stark 1964; Wood, D. L. & Vite 1961: 80; Wood, D. L. et al. 1976; Wright, R. H. 1974: 135; Yadav, Vidyasagar, & Reddy 1986. (**cn**) Amman & Rasmussen 1969: 63; Anderson, R. F. 1948: 596, 1960: 218; Andrews & Monts 1978: 2; Annand 1941, 1942, 1943, 1944: 7, 1945, 1948, 1949; Anonymous 1940i: 580, 1951i: 812, 1955g: 30, 1955h: 49, 1955j: 4, 8, 1958a: 3, 5, 1959j: 2, 1960i, 1960j: 1, 1960q, 1960r, 1961e, 1961h, 1961i, 1961s, 1962h, 1962i, 1962p, 1963j, 1963k, 1963y, 1964h, 1964i, 1964u, 1965b, 1965c, 1965r, 1966f, 1966u, 1967f, 1967h, 1967t, 1968g, 1968h, 1968p, 1969e, 1969f, 1969m, 1970h, 1970k, 1970t, 1971e, 1971i, 1971v, 1972h, 1973c, 1973n, 1974f, 1974v, 1975d, 1975e, 1975g, 1975t, 1976f, 1976g, 1976h, 1977g, 1977h, 1977i, 1977x, 1978a, 1978b: 34, 1978f, 1978g, 1978h: 4, 1978z, 1979a, 1979e: 4, 1979f, 1979g, 1980a, 1980m: 30, 1981g, 1981j, 1982c, 1983d, 1983f, 1984d, 1984f, 1985i, 1986b: 5, 1987e: 3, 1987f, 1987g, 1988b, 1988f; Bailey 1957: 29–31; Baker 1924: 599; Baker, B. H. 1969; Bakke 1973; Balch, Webb, & Fettes 1955b; Barlow 1966; Beal 1950, 1951: 59; Beal et al. 1955; Beatty 1980: 3, 1983; Becker, G. 1951; Bedard, W. D. Jr. & Wood 1974a, 1974b; Beeson 1918; Bega et al. 1966: 439–440; Benedict 1959: 245–249; Bennet 1983; Berryman 1967b; Berryman, DeMars, & Stark 1970; Bongberg 1947, 1956a, 1957, 1962; Boone 1925: 7, 58; Bousfield, Hagle, & Kohler 1988; Boyce 1923, 1928; Browne, F. G. 1968b: 223; Browne, L. E. 1978; Browne, L. E. et al. 1979; Buckhorn 1955: 1–3, 10, 1957; Buckhorn & Orr 1961: 17, 1962: 1415; Burke 1917: 88, 1926: 57; Bushing & Wood 1964: 510; Cahill & Lister 1971;

Carter 1942: 46; Caverhill 1925: 16; Caylor & Thorley 1970; Ceballos & Cordoba 1945b; Chamberlin 1920b, 1920c, 1922: 69–71, 1924, 1927a, 1927b, 1927c, 1939: 153–154, 1958: 67–71; Chrystal 1949: 3–11; Ciesla, Dewey, & Tunnock 1971: 21; Cottrell 1967: 98; Coulson, R. N. & Witter 1984: 520; Cowlin 1955: 34; Coyle 1940: 90–91; Craighead 1925a, 1925c: 341–346, 1927: 6–7, 1930: 5, 1931, 1942a: 368–383, 1944, 1952; Craighead & Middleton 1930; Craighead et al. 1931; Currie 1905: 74; Curtis & Hadfield 1977a, 1977b; Curtis & Johnson 1975; Curtis & Tegethoff 1978; Dahlsten 1976a; Dahlsten & Rowney 1983; Daterman 1979; DeGryse 1938: 27, 1947: 3, 1949b; DeMars 1963: 1112–1116; DeMars & Roettgering 1982: 4; DeMars et al. 1980; DeNitto & Pierce 1983; DeNitto & Wenz 1983; Doane et al. 1936; Dolph 1971, 1977; Dolph & Pettinger 1968: 33, 1969: 7, 1971: 5; Downing 1954; Dudley 1971; Dyer 1952; Eaton 1956, 1959; Eaton & Lejeune 1967; Ebeling 1929: 652; Elliott 1924: 43; Ernst 1950; Essig 1926: 513, 1958: 514; Evenden 1924, 1926b, 1940: 949–955; Felt 1920: 249, 250, 1924: 250, 1930a: 249, 250; Forest, Lyon, & Wickman 1960; Friend 1943; Fuller & Hostetler 1980; Furniss, R. L. 1943: 33–34; Furniss, R. L. & Struble 1946: 20–21; Geiler 1975; Gentry, G. R. 1979: 810; Gibson 1923: 16, 1927: 444; Gordon 1938: 70–74; Graham, D. A. 1979; Graham, K. 1963; Graham, S. A. 1939b, 1952; Greene, L. 1983; Gregg, Filip, & Hadfield 1980: 38; Gregg, Goheen, & Bridgwater 1978: 43; Gregg & Hadfield 1978; Gustafson 1972; Gustafson, Bedard, & Wood 1971; Hagle et al. 1987: 36; Hall, R. C. 1946: 54, 62, 1958a: 341–347, 1958b, 1961; Hall, R. W., Shea, & Haverty 1982; Hamel 1980: 784; Hart, D. 1984; Hatch 1938: 193; Haverty, Shea, & Hall 1985; Hawley 1937: 91; Hawthorne 1962, 1963, 1964, 1965b; Hayes 1959: 1–54; Heisley 1933: 23; Helzner & Moyer 1979; Herrick 1935: 250; Hetrick 1949b; Hewitt 1915: 29, 1916: 851–876; Hodges et al. 1979: 892; Hofacker & Loomis 1982: 12, 1983: 14; Hofacker, Loomis, & Gilstrap 1988: 19; Hofacker, Loomis, & Tucker 1984: 23, 1987; Hofacker, Loomis, & Worral 1989; Hoffman et al. 1988: 7; Holland & Tkacz 1984; Hopkins 1899b: 11, 20, 26, 1901a: 251, 1902d: 21, 1902e: 3, 1903: 281, 1904a: 18, 1906c: 632, 1907c: 515, 1908c: 162, 1909b: 42–49, 1909c: 59, 1910f: 2, 1910g: 59, 1912b: 3, 5, 1919: 504; Hopping 1915, 1921: 9, 1922: 129, 132, 1924a, 1925b, 1934; Hosmer 1930: 716–717, 739–740; Howard 1906: 15, 1916: 1–24, 1920: 1–36, 1922: 24, 1923: 30, 1924a: 410; Hoyt 1952: 40, 1953: 19, 22; Huffaker, Shoemaker, & Gutierrez 1978; Hynum & Berryman 1981: 845; Ishikura 1966; Jaenicke 1920: 1, 1921a: 447–450, 1921b: 37; Jemison 1955: 30–31; Jemison et al. 1956: 50; Johnson, Philip C. 1940, 1949, 1951a: 32–37, 1954b: 1, 1967, 1968; Keen 1923: 689, 1926: 178, 1927a: 1–20, 1929: 31, 1931: 428, 1936: 919–927, 1938: 99, 1939: 5, 1943: 249–253, 1945: 4, 1946: 2–6, 1949a: 48, 1949b: 427, 1950: 186–187, 1952c: 129, 132, 1955c: 1–4, 1958b: 174, 1966; Keen & Furniss 1937: 482–504; Keen & Patterson 1927: 599; Keen & Salman 1942: 854; Klein, W. H. 1966: 17, 1967, 1968; Klein, W. H. & McGregor 1966; Klein, W. H. & Parker 1970: 17; Klein, W. H. & Stipe 1971: 16; Klein, W. H. & Tegethoff 1970; Kliejunas 1985; Kliejunas & Pierce 1986; Klotz 1958: 31; Knapp 1985; Knapp et al. 1989: 6; Knight 1976; Knopf, J. 1978, 1981; Knopf, J. et al. 1978: 30, 31; Kondo & Moody 1987: 112; Kowal 1961c; Krauch 1930: 1085–1097; Lang et al. 1978; Leach et al. 1937: 318; Lessard 1978; Lessard & Walters 1978: 24; Liebhold et al. 1986: 325; Lindgren 1980a: 61; Linnane 1984; Lister 1971a, 1971b, 1972a, 1972b, 1973a, 1973b, 1973c, 1973d, 1973e, 1973f, 1973g, 1973h, 1973i, 1981, 1982; Lister & Cahill 1970: 22; Lively 1954: 205–206; Livingston 1987b; Livingston et al. 1988: 4; Loomis, Hofacker, & Tucker 1985: 39, 1986; Lowe & Moyer 1980; Lyon 1959b: 323–327, 1960, 1965: 59, 1971; Lyon & Swain 1968: 4; Lyon & Wickman 1960; MacDaniels 1940: 506–508; Marlatt 1928: 1–34, 1929: 1–39, 1931: 45–47, 1933: 22–23, 1934: 28–29; Martin 1937: 122, 144; Martorell 1943: 132; Massey 1956a: 23; Mattson & Haack 1987; McCambridge 1978; McPherson, Wilson, & Stehr 1970b: 1018; Metcalf & Flint 1951: 797; Miller, J. M. 1921a: 40, 1921b: 37, 1926: 897, 1929: 994, 1939: 4, 1945: 14; Miller, J. M. & Keen 1960: 1; Miller, J. M. & Patterson 1927: 597; Molnar et al. 1969: 117; Mokrzecki 1926b: 3; Moody 1988: 86; Moore 1957: 548; Morris, E. V. & Monts 1976: 3; Mote 1945b: 98; Mothershead & Stacey 1965: 307–336; Moyer 1977; Munns et al. 1928: 334; Neal 1979: 810; Ogle 1920: 81; Ollieu & Mason 1967: 10, 1968: 13; Ollieu, Stipe, & Hoffman 1980: 26; Orr, P. W. 1942: 44, 1954: 2–3, 1963a, 1963b; Osborne 1962: 1; Otvos 1965: 1184–1199, 1970: 4650–4651; Overhulser 1986; Owen 1986: 4; Packard 1890: 722; Paine 1984a, 1984b; Patterson 1923: 38, 1927c: 3, 1929: 1–19; Payne & Wood 1981: 479; Peirson 1922: 629, 1946: 273; Perry 1951: 159; Pettinger 1979; Pettinger & Dolph 1967: 26, 1969, 1970: 10, 1971: 7; Pettinger & Johnson 1973a: 13, 1973b: 9, 1974; Pierce & Kliejunas 1981; Pierce, J. R. 1966: 13, 1971: 10; Pierce, J. R. & Srago 1973: 15; Pierce, J. R., Srago, & Fujii 1970: 14; Pierce, J. R., Wood, & Fujii 1977: 15; Pitman 1970; Prebble 1944: 34; Preston 1925: 51; Price 1957: 99; Pronin 1952: 186; Raffa & Berryman 1982b: 806; Ragenovich 1979, 1980b: 20; Richmond 1947: 112; Ringle 1940: 348–349; Robinson, L. A. & Dooling 1978: 11; Roelofs 1978; Roettgering 1973; Rogers, T. J. 1981; Rogers, T. J. & Hessburg 1985; Rogers, T. J. & Maffei 1987: 2,

1988: 2; Rosecrans 1947: 8; Ross 1954: 142; Rudinsky 1960a, 1979a: 408; Rudinsky & Terriere 1959: 485; Ruppel 1967: 32; Ryker & Rudinsky 1979: 209; Salman 1933, 1933a: 136, 1934: 1016–1017, 1937: 1, 1938a: 613, 1938b: 120; Salman & Baumhofer 1931: 776; Salman & Bongberg 1942: 533; Sand & Bryan 1989: 28; Schatt 1959: 1–40; Scheller 1961; Schmid 1976b; Schultz & Kliejunas 1984; Seal 1964; Shea, P. J., Haverty, & Hall 1984; Silver & Ross 1958: 75, 1959: 88, 1960: 98, 1961: 98, 1962b: 111, 1963a: 109, 1965a: 116; Smith, A. 1978, 1980, 1981; Smith, R. F. & Huffaker 1973: 36, 1974; Smith, R. H. 1961c, 1963b, 1967, 1970, 1979, 1981, 1982, 1986, 1989; Smith, R. H., Trostle, & McCambridge 1977; Smith, R. H. et al. 1981; Smith, R. S. Jr. & Roettgering 1982; Smith, R. S. Jr. et al. 1984; Snyder 1925: 311; Sowder 1951: 1; Stark, R. W. 1966, 1968b: 689–697, 1973; Stark, R. W. & Cobb 1969; Stark, R. W. & Dalleske 1970; Stark, R. W. & Waters 1985; Stephen & Dahlsten 1976a; Stevens 1959a: 2, 1981; Stevens, Brewer, & Leatherman 1980: 21, 1982: 22; Stipe et al. 1987; Stipe, Valcarce, & Tegethoff 1977: 22; Stodieck 1937: 10; Strong 1935: 23, 1936: 27, 1940: 23; Struble 1937d: 9, 1948: 129, 1955: 1; Struble & Hall 1955: 3; Sugden & Ross 1960a; Swaine 1910d: 42, 1913: 41–43, 90, 1914: 13, 1915: 89, 1918a: 60, 62, 1920b: 642, 1928b: 501; Swezey & Dahlsten 1983; Swezey et al. 1982; Tanimoto 1978; Teillon et al. 1973; Telfer 1982; Thatcher, T. O. 1961; Thier & Hoffman 1983; Tilden et al. 1979, 1983; Tragardh & Butovitsch 1937: 294; Treece & Hamilton 1957: 15; Tripp, Ross, & Van Sickle 1978: 78; Tunnock & Dooling 1977: 28; Van Den Bosch 1968; Van Den Bosch & Telford 1964; Villarreal Martinez 1957: 11; Vite 1961, 1962, 1969, 1970b; Vite & Pitman 1970: 1132–1135; Vite & Rudinsky 1962; Vite & Wood 1961; Wallace 1941: 169; Wallace & Beard 1943: 291; Walters, J. 1958: 326; Walters, J. W. & Lessard 1978: 11; Waters 1985b; Waters, Stark, & Wood 1985; Wear 1979; Wear & Buckhorn 1955: 13; Weaver 1934: 101, 1943: 8; Webb 1905: 632, 1906: 515; Whiteside 1951: 1–11, 1957: 2–3, 17, 31–40; Whitnall 1944: 20; Wickman & Lyon 1962: 395; Wood, D. L. 1979a, 1979b, 1980a, 1980b; Wood, D. L. & Bedard 1974a; Wood, D. L. et al. 1985; Wood, R. O. & Doidge 1972: 10; Wright, K. H. 1965; Wygant 1959: 274; Yuill 1941: 702–709. (**ec**) Annila 1969: 182; Annila & Perttunen 1964: 42; Ashraf & Berryman 1969: 11, 1970: 201; Barras & Hodges 1969: 492; Beal 1931: 575, 1934: 1132–1139, 1953; Bedard, W. D., Jr. 1966a: 936, 1980b; Bedard, W. D. Jr. & Wood 1974a; Bega et al. 1956, 1966; Berryman 1964, 1965a, 1965b: 1225, 1966a, 1966b: 519, 1967a: 1009–1014, 1967b: 260–262, 1970a, 1974: 583; Berryman, Stark, & Dudley 1970; Berryman et al. 1970; Borden 1967: 1182; Bovey 1970; Browne, L. E. et al. 1979; Burks 1979: 799; Bushing 1965: 458, 1968b: 2886; Bushing & Bright 1965: 202; Byers, J. A. 1989a, 1989b; Byers, J. A. & Wood 1980; Byers, J. A. et al. 1977; Callaham 1953: 1–2; Callaham & Shifrine 1960: 146; Carter 1933; Chamberlin 1939: 153–154; Chararas 1958b; Cobb 1968; Cobb & Stark 1970; Cobb et al. 1968; Craighead et al. 1927; Dahlsten 1970; Dahlsten & Bushing 1970; Dahlsten & Herman 1965: 8–10; Dahlsten & Rowney 1980; Dale & DeNitto 1986; Davidson 1966; DeGryse 1947b; DeMars 1966a, 1966b: 3552; DeMars, Dahlsten, & Stark 1970; DeMars & Roettgering 1982; DeMars et al. 1970, 1986; Eaton 1959; Edmunds 1973: 776; Felix, Uhrenholdt, & Parmeter 1971: 1697; Francke-Grosmann 1966c; Froggatt 1923; Fry 1989: 16; Furniss, M. M. & Hallin 1955; Furniss, R. L. & Carolin 1977: 348; Galoux 1947b; Garigiullo & Berisford 1981: 392; Geiler 1975; Goheen & Cobb 1975, 1980; Goheen et al. 1985; Graham 1939b, 1952; Green, L. 1983; Haget 1950; Haliburton 1943; Hanover 1975; Hawksworth 1985; Helms, Cobb, & Whitney 1971; Hetrick 1949b; Hirschmann & Wisniewski 1982; Hoffard & Coster 1976: 130; Holst 1936: 513–518; Hopkins 1903: 281, 1909b: 42–49; Hopping 1915, 1928b; Howard 1927: 24; Hurlbutt 1967; Johnson, Philip C. 1966a, 1966b, 1967, 1968; Keen 1929b: 735, 1929d: 108, 1936: 919, 1938: 99, 1943: 249, 1946: 2, 1950: 186, 1953b: 720, 1958b: 174; Keen & Furniss 1937: 482; Keen & Patterson 1927: 599; Keen & Salmon 1942: 854; Kinn 1970a, 1971; Leach et al. 1937: 318; Livingston, R. L. & Berryman 1972: 1793; Lu et al. 1957: 336; Mason, W. R. M. 1978; Massey 1957: 32, 1966c: 424; Mathre 1964a, 1966; Mattson & Haack 1987; Metcalf & Flint 1951: 797; Miller, J. M. 1929: 994, 1930: 17, 1931: 303, 1933: 443; Miller, J. M. & Keen 1960: 1–391; Miller, J. M. & Patterson 1927: 597; Munns et al. 1928: 334; Nelson & Beal 1929: 1101; Nickle 1963: 386–389; Nickle & Welch 1984: 638; Nishiguchi 1970; Orr 1945: 739; Otvos 1965, 1970a, 1970c, 1977, 1979; Otvos & Stark 1985; Owen et al. 1987; Paine 1984a, 1984b; Paine & Birch 1983; Parmeter et al. 1989; Patterson 1927c: 3, 1929: 18; Person 1928: 565, 1931: 696, 1940: 390–396, 1950: 154; Pettey & Shaw 1986; Pitman 1969d, 1973; Pitman & Vite 1971; Poinar 1970, 1975: 153; Reid 1957d: 445, 1963a: 234; Reid & Gates 1970: 621; Renwick 1967: 355–360; Rice 1968, 1969: 386; Rudinsky 1962b, 1962c, 1973b: 581; Rumbold 1931c: 847, 851, 1936: 419; Salman 1934: 1016, 1938a: 613; Salman & Bongberg 1942: 533; Schmitt 1959: 35; Shifrine & Phaff 1956: 52; Smith, R. H. 1963b, 1966a, 1966b, 1966e: 63–68, 1977; Smith, R. H., Peloquin, & Passof 1969; Sowder 1942d: 841, 1951: 1; Stark, R. W. 1970; Stark, R. W. & Cobb 1969: 13–15; Stark, R. W. & Dahlsten 1970; Stark, R. W. et al. 1968; Stephen & Dahlsten 1976a, 1976b; Stevens 1981; Stevens & Hawksworth 1970; Struble 1930b: 106, 1942a:

98, 1942d: 841; Sturgeon 1979, 1980a; Sugden & Ross 1960a, 1960b; Swaine 1925c: 262; Swezey & Dahlsten 1983; Swezey et al. 1982; Thomas, G. M. & Poinar 1973: 275; Thompson, W. R. & Simmonds 1964: 29, 1965: 14; Thong & Webster 1972a, 1972b, 1983; Vite & Pitman 1969; Wallace & Beard 1943: 291; Waters 1985b; Weaver 1959: 15; Webb 1906b: 17, 1945: 70; Webber & Gibbs 1989; Westveld 1939: 472–473, 500; Wheeler 1940: 636; Whitney & Cobb 1972; Wickman 1977; Wood, D. L., Parmeter, & Dahlston 1988; Wood, D. L. & Stark 1968: 148; Woodring & Moser 1970. (**hb**) Anderson, N. H. & Anderson 1968: 29; Anderson, R. F. 1948, 1960: 218; Annila 1969: 187; Ashraf & Berryman 1969: 6; Beatty 1983; Berryman 1967a, 1969a, 1970a, 1970c, 1974: 581; Berryman, DeMars, & Stark 1970; Berryman, Stark, & Dudley 1970; Bongberg 1959a; Bright & Stark 1973: 29; Browne, L. E. 1972; Callaham & Shifrine 1960: 146; Chamberlin 1939: 153–154, 1958: 67–71; Cooper & Stephen 1978: 574; Coulson, R. N. & Witter 1984: 522; Coulson, R. N. et al. 1976b: 357, 1978: 476, 1985; Craighead 1953; DeMars 1963, 1966a, 1966b, 1970; DeMars, Dahlsten, & Stark 1970; DeMars & Roettgering 1982; DeMars et al. 1970, 1980, 1986; Doane et al. 1936; Dudley 1971, 1981b; Eaton 1956, 1959; Eaton & Lejeune 1967; Eidmann 1962: 161; Essig 1926: 513, 1942: 605, 1958: 514; Evan 1952: 140; Felt 1926: 249–250, 1930a: 249–250; Foltz et al. 1976: 342; Froggatt 1923; Furniss, R. L. & Carolin 1977: 348; Gara & Vite 1962; Geiler 1975; Graham 1939b, 1952, 1963; Green, Beroza, & Hall 1960: 142; Hagle et al. 1987: 36; Herrick 1935: 250; Hopkins 1899b: 11, 20, 26, 1901e: 66, 1903: 281, 1904a: 18, 1909a: 81–85; Hughes & Pitman 1971; Johnson, N. E. 1960a: 8; Johnson, Philip C. 1967; Keen 1929: 31, 1933b: 297, 1938: 99, 1952c: 129, 132, 1955c: 1–4, 1966; Kozlowski 1969: 121; Lindgren 1980a: 61; McPherson, Wilson, & Stehr 1970b: 1018; Metcalf & Flint 1951: 797; Miller, J. M. 1933: 443; Miller, J. M. & Keen 1960: 1; Morstatt 1924: 54; Nishiguchi 1970; Person 1928: 565; Pierce 1907: 294; Reid 1957d: 445, 1963a: 229; Roettgering 1973; Ryker & Rudinsky 1979: 209, 210; Salman 1933a: 136; Stark, R. W. 1966, 1968a, 1970; Stark, R. W. & Dahlsten 1970; Stephen & Dahlsten 1966b, 1976a; Stevens, Brewer, & Leatherman 1980: 21, 1982: 22; Struble 1937d: 9, 1955: 1; Struble & Hall 1955: 3; Swaine 1918a: 60, 62; Thatcher, T. O. 1961; Vite 1962; Vite, Gara, & Scheller 1964: 461–470; Wagner et al. 1979: 1129; Waters 1985b; Webb 1906b: 17; White, R. E. 1983: 329; Whiteside 1951: 1; Wood, D. L. & Bedard 1974a, 1977; Wood, S. L. 1963: 29, 1982b: 154; Yuill 1941: 703. (**ds**) Acciavatti & Walters 1977; Acciavatti & Weiss 1974; Anderson, R. F. 1960: 218; Annand 1944: 7; Anonymous 1958a: 3, 5, 1962i, 1963j, 1963k, 1963y, 1964h, 1964u, 1965b, 1965r, 1966f, 1966u, 1967f, 1967t, 1968g, 1969e, 1969f, 1969m, 1970h, 1973c, 1973n, 1974f, 1975d, 1975e, 1975g, 1975t, 1976f, 1976g, 1976h, 1977g, 1977h, 1977i, 1977x, 1978a, 1978b: 34, 1978f, 1978g, 1978h: 4, 1978z, 1979a, 1979f, 1979g, 1980a, 1980m: 30, 1981g, 1981j, 1982c, 1983d, 1983f, 1984d, 1984f; Baker, B. H. 1969; Berryman 1967; Berryman & Stark 1962a; Bongberg 1956a, 1957; Bongberg & Bennett 1960: 1; Bright & Stark 1973: 29; Browne 1968b: 223; Bushing & Wood 1964: 511; Chamberlin 1917: 324, 1925, 1939: 153–154, 1958: 67–71; Choo, Woo, & Kim 1981: 202; Craighead 1953; Currie 1905; Curtis & Johnson 1975; DeLeon 1938; DeMars & Roettgering 1982; Downing 1963: 6; Dudley 1971; Dyer 1952; Eaton 1956; Eaton & Lejeune 1976; Essig 1926: 513, 1958: 514; Evans, D. 1983: 31; Evans, J. W. 1952: 140; Evenden 1924; Fall 1906: 203; Felt 1926: 249–250, 1930a: 249–250; Furniss, R. L. & Carolin 1977: 348; Gast et al. 1989: 385; Gredley et al. 1922; Hagedorn 1910d: 20; Hall & Eaton 1960: 8; Hendricks & Enkerlin 1979; Henshaw 1882: 269, 1885: 147; Hopkins 1909a: 81–85, 1909b: 42–49; Hopping 1922, 1924b: 125–128; Ishikura 1966; Keen 1929: 31, 1929a: 16, 1929d: 108, 1933: 297, 1938: 99, 1952c: 129, 132, 1955c: 1–4, 1966; Kleine 1912b: 176, 1914b: 390, 1934a: 132; Lanier, Hendrichs, & Flores 1988; Lejeune, McMullen, & Atkins 1961; Leng 1920: 338; Lyon 1958: 582; Marchant & Borden 1976; McPherson, Wilson, & Stehr 1970: 1018; Mendel & Argaman 1986; Miller, J. M. & Keen 1960: 1; Patterson & Hatch 1945: 149; Perry 1951: 149, 159; Perusquia 1978; Powell, J. A. & Hogue 1979: 312; Powell, J. M. 1969: 2; Reid 1963a: 229; Rosecrans 1947: 8; Ruppel 1967: 32; Smith, G. S. 1930; Smith, R. H. 1961b; Stephen & Dahlsten 1976a; Struble 1955: 1; Sugden & Ross 1960a; Swaine 1909: 96, 1913: 90, 1914: 13; Swezey et al. 1982; Thatcher, T. O. 1961; Vite 1961; Wood, S. L. 1963: 29, 1972a: 404, 1982b: 154. (**tx**) Anderson, R. F. 1960: 218; Benoit 1985: 89; Berryman 1967: 260–262 (as *brevicornis*); Bright & Stark 1973: 149; Bruck 1936a; Chamberlin 1939: 153–154, 1958: 67–71; DeLeon 1938; Dietz 1890; Essig 1942: 605; Evans, D. 1983: 31; Hagedorn 1910a: 60; Hopkins 1902e, 1909a: 81–85, 1915c: 199; Hughes, Renwick, & Vite 1976: 1167; Keen 1929a: 16; Lanier, Hendrichs, & Flores 1988a; LeConte 1876: 386; Miller, J. M. & Keen 1960; Muesebeck 1942: 95, 1950: 131; Perusquia 1978; Powell, J. A. & Hogue 1979: 312; Ryker & Rudinsky 1979: 209; Swaine 1909: 96, 1918a: 60, 62; Thomas, J. B. 1965c, 1967; Wood, S. L. 1963: 5, 11, 13, 16, 29–38, 1972a: 404, 1982b: 154–159. (**ms**) Amman & Rasmussen 1969; Anonymous 1959j: 2; Beal 1950, 1953; Beal et al. 1955; Bellas, Brownlee, & Silverstein 1969; Bernardi & Grasselli 1981; Berryman 1964, 1970c; Berryman & Stark 1962a; Bongberg 1956b, 1959a; Brand &

Scott 1985; Browne, L. E. 1972; Brownlee & Silverstein 1968; Burke 1930; Byers 1988a; Callahan 1953a; Carter 1933; Caylor & Thorley 1970; Chamberlin 1927a, 1927b, 1927c; Chararas 1971a: 853; Coke, Williams, & Natarajan 1977; DeMars 1963,1965; Ernst 1950; Essig 1931: 685; Graham, D. A. 1979; Hatch 1938: 193; Hughes & Pitman 1971; Keen 1923: 689, 1927a: 1–20, 1952b: 49; Klotz 1958: 31; Knolle & Schaffer 1975; Kocienski & Ostrow 1976; Lipkowitz & Mundy 1976; Lipkowitz, Mundy, & Geeseman 1973; Lipkowitz, Mundy, & Matsko 1976; Lively 1954: 205; Look 1976b; Masaki et al. 1982; Matteson, Sadhu, & Peterson 1986; McNew 1970; Meyer 1977; Mori 1974a, 1974b, 1976d; Mothershead & Stacey 1965; Mundy, Lipkowitz, & Dirks 1975; Person 1931: 696; Pettinger 1979; Prebble 1944: 34; Rodin et al. 1971; Rohwer 1950: 195; Schmitt 1959: 35; Seu & Mori 1986; Silverstein 1970b; Smith, R. F. & Huffaker 1973: 36; Smith R. H. 1961a, 1961b; Stark, R. W. 1966, 1968a; Stewart, T. E. et al. 1977; Swaine 1925c: 262; Trehan, Kad, & Gupta 1986; Wasserman & Barber 1969; Wear 1979; Whitesell & Buchanan 1986; Whitnall 1944: 20; Yadav, Vidyasagar, & Reddy 1986.

barberi Hopkins 1909a: 85. Holotype ♀; Williams, Arizona [USA]; USNM, Washington. Synonymy: Wood 1963: 31.
References: (**ay**) Hopkins 1906b: 147, 1909a: 85–87; Lyon 1958: 583. (**bv**) Miller & Keen 1960: 3. (**cn**) Anonymous 1955j: 9, 1956p: 110, 1958a: 6, 1960g, 1960j: 18; Bailey 1957: 37; Blackman 1931c: 32–33; Bongberg 1956a, 1957; Burke 1908; Craighead & Middleton 1930: 5; Craighead et al. 1931: 1008; Doane et al. 1936; Essig 1926: 512, 1958: 513; Felt 1924: 251–254, 1926: 249–251, 1930a: 249–250; Hopkins 1909b: 49–52; Keen 1938: 100, 1952c: 133; Massey 1956b: 110, 1957: 29–34, 1958: 90, 1960a: 1, 1960b, 1961: 1–9, 1961: 354–359; Miller, J. M. & Keen 1960: 3; Miller, J. M. & Wales 1929: 436; Orr 1954: 3; Pearson 1950: 154; Price 1956: 23, 27, 1957: 95–99, 1958: 61–62; Swaine 1919: 62; Yasinski 1956: 1–3; Yasinski & Pierce 1957: 4. (**ec**) Becker, G. 1952b; Blackman 1931c; Hopkins 1909b: 49–52; Keen 1938: 100; Massey 1957: 31, 1961, 1964: 37–40; Miller, J. M. & Keen 1960: 103. (**hb**) Beal 1939: 10–11; Blackman 1931c; Bongberg 1959a, 1960: 62; Burke 1908; Chamberlin 1939: 155–156; Doane et al. 1936; Essig 1926: 512, 1958: 513; Felt 1926: 249, 251, 1930a: 249–250; Hopkins 1909a: 85, 87; Keen 1938: 100, 1952c: 133; Massey 1961: 354; Miller, J. M. & Keen 1960: 3. (**ds**) Anonymous 1958a: 6, 1960: 12; Bongberg 1956a, 1957; Bongberg & Bennett 1960: 1; Chamberlin 1925, 1939: 155–156; Craighead & Middleton 1930; Essig 1926: 512, 1958: 513; Felt 1926: 249, 251, 1930a: 249–250; Hagedorn 1910d: 20; Hopkins 1909a: 85–87, 1909b: 49–52; Keen 1938: 100–102, 1952c: 133; Kleine 1912b: 176, 1914b: 385; Leng 1920: 338; Massey 1961f. (**tx**) Chamberlin 1939: 155–156; Hagedorn 1910a: 60; Hopkins 1909a: 85–87; Hughes, Renwick, & Vite 1976: 1167; Jacques 1951: 350; Muesebeck 1942: 95, 1950: 131; Wood, S. L. 1963: 29–31. (**ms**) Bongberg 1959a.

***frontalis* Zimmermann** 1868: 149. Holotype ♂; Carolina [USA]; MCZ, Cambridge.
Figures: Kowal 1961b: 10, Smith 1962: 5, Wood 1963: 5, 11, 13.
Distribution: North America (Honduras/ Guatemala/ Chiapas, Guerrero, Nuevo Leon in Mexico/ Alabama, Arizona, Arkansas, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, West Virginia in USA).
Hosts: *Pinus echinata, P. engelmannii, P. glabra, P. oocarpa, P. palustris, P. ponderosa, P. rigida, P. strobus, P. taeda, P. virginiana.*
Notes: (3) Hopkins 1902e: 3 (*pinicida,* nomen nudum). Lanier, Hendrichs, & Flores 1988a gave the distribution in eastern Mexico as extending from Nuevo Leon to Guatemala, but cited only three localities two of which require confirmation.
References: (**ay**) Anderson, W. W., Berisford, & Kimmich 1979; Anonymous 1962z, 1973r; Barras 1967: 485, 1975; Barras & Hodges 1974; Barras & Perry 1972; Barras & Taylor 1973; Bennett, W. H. 1966b; Bridges 1982, 1983; Brotschol et al. 1977; Dickens & Payne 1977, 1978a, 1978b; Farris 1969: 527; Florence & Kulhavy 1981; Florence, Johnson, & Coster 1982; Francke-Grosmann 1965, 1966c; Hedden & Billings 1977; Hodges & Barras 1974; Hodges, Barras, & Mouldin 1968a: 1462–1472; Hopkins 1894g, 1909a: 90–95; Hughes 1973c; Kudon & Berisford 1981; Lanier, Hendrichs, & Flores 1988a, 1988b; Lyon 1958: 583; Miller, M. C. 1979a, 1979b, 1981; Miller, M. C. et al. 1978, 1979; Mizell & Nebeker 1979b; Namkoong 1979; Namkoong et al. 1979; Osgood & Clark 1963: 1106; Payne 1970, 1971, 1975, 1980a; Payne & Dickens 1976; Payne et al. 1973, 1982; Renwick 1967; Renwick & Hughes 1975; Renwick, Hughes, & Tanletin 1973; Renwick et al. 1976; Roberds, Hain, & Nunnally 1987; Stock, M. W., Gregoire, & Furniss 1987; Thomas, J. B. 1964; Tomescu & Clark 1976; Van Sambeek & Bridges 1980,1981; Vite et al. 1974; White, R. E., Franklin, & Agosin 1979; Willis, N. P. & Hodgson 1970. (**bv**) Alexander, Skelly, & Webb 1981; Anderson, R. F. 1961; Andryszak et al. 1982; Anonymous 1968a, 1971ff, 1979a; Baker, W. L. 1972: 240; Bakke 1973; Barr, B. A. 1969: 640; Barras 1967; Belanger & Price 1979; Belanger 1979b; Belanger, Osgood, & Hatchell 1979; Belanger & Wiseman 1979; Bennett, W. H. 1968,

1971; Bennett, W. H. & Ceisla 1971; Bennett, W. H. & Ostmark 1972; Berisford & Payne 1988a, 1988b; Berryman 1988; Billings 1984b, 1988a, 1988b; Billings, Gara, & Hrutfiord 1976: 117; Birch 1978b; Birch & Svihra 1979b; Birch et al. 1980; Borden et al. 1981: 561; Brand et al. 1976, 1977; Bridges 1982; Bridges & Guinn 1980; Brown & Franklin 1977; Bunt, Coster, & Johnson 1980; Cameron, R. S. 1987; Chararas et al. 1982: 1095; Ciesla 1966; Clark & Osgood 1966; Cook & Hain 1985a; Copony & Morris 1972; Coster 1969: 1008–1011, 1970b, 1970c: 1186–1187, 1972; Coster & Gara 1968: 69–76; Coster & Johnson 1979a, 1979b; Coster & Payne 1974; Coster & Vite 1972; Coster et al. 1977a, 1978; Coulson, R. N. et al. 1972, 1973a, 1974, 1975, 1976a, 1976b, 1976c, 1977, 1978, 1986; Coyne & Critchfield 1974; Davis & Nagel 1956: 210–211; Deangelis, Nebeker, & Hodges 1986; DeMars & Hain 1980; Dickens 1977a, 1977b; Dickens & Payne 1977, 1978a; Dixon & Osgood 1961; Dixon & Payne 1979b, 1980; Drew 1977; D'Silva & Peck 1972; Du 1987; Dyer 1973, 1975: 979; Dyer & Safranyik 1977: 77; Fares, Sharpe, & Magnuson 1980a, 1980b; Fargo, Wagner, & Coulson 1985; Fargo et al. 1978, 1979; Flamm, Coulson, & Payne 1988; Florence, Johnson, & Coster 1982; Foltz et al. 1976b; Franklin 1968, 1969b; Gammill, Fitzpatrick, & Neel 1978; Gara 1967b: 349; Gara & Coster 1968: 77–86; Gara, Vite, & Cramer 1965; Gargiullo & Berisford 1981; Goeden & Norris 1965b: 776; Gollod 1980; Gore, Pearce, & Silverstein 1976; Hain et al. 1978; Hedden & Billings 1979; Hedden & Reed 1980; Heikkenen 1977; Hetrick 1960; Hicks, R. R. 1980; Hicks, R. R., Coster, & Watterston 1979; Hicks, R. R. et al. 1980a; Hodges & Pickard 1971; Hodges et al. 1979; Hoffmann & Anderson 1945; Hughes 1973c, 1975, 1976; Hurst, G. D. & Matteson 1986; Hyche 1975; Hynum 1980; Inscoe & Beroza 1976: 169; Jacobson 1965,1972; Johnson, Paul C. & Coster 1980; Johnson, Philip C. & Coster 1978, 1979; Kalkstein 1974c, 1976; Kinn 1986b; Kinzer et al. 1969; Klassen, Ridgway, & Inscoe 1982; Kohnle & Vite 1984b; Kowal 1960c; Ku, T., Sweeney, & Shelburne 1976, 1977; Kushmaul & Cain 1981; Kushmaul et al. 1979; Lashomb & Nebeker 1979; Lewis 1971b, 1973; Look 1976b; Lorio 1966b, 1976; Lorio & Yandle 1978; MacGowan 1980; Magnus & Roy 1978; Maki, Hazel, & Hall 1981; Mawby 1984; McCarty et al. 1980; McClelland, Hain, & Mawby 1979; McGregor & Miller 1989; Meister & Scharf 1983; Miller, M. C. et al. 1989; Moore, G. E., Taylor, & Smith 1979; Mori 1975b, 1976d; Moser, J. C. & Dell 1979; Moser, J. C. et al. 1987; Mundy et al. 1971; Nebeker et al. 1988; Nijolt 1973b: 589; O'Donnell, Payne, & Walsh 1986; Orr, W. W. & Rodriguez 1967; Payne 1970: 249–350, 1971, 1973, 1974a, 1974b, 1974c, 1975, 1980a, 1980b, 1981b, 1983, 1984a, 1984b, 1986; Payne & Billings 1988; Payne, Coster, & Johnson 1977, 1979; Payne & Coulson 1985; Payne, Coulson, & Thatcher 1974; Payne & Dixon 1976; Payne, Dixon, & Richerson 1984; Payne & Richerson 1979a, 1979b, 1985; Payne & Wood 1981: 479; Payne et al. 1976, 1978, 1982, 1985, 1988; Pitman 1969a; Pitman & Vite 1969: 147; Pitman et al. 1968: 168–169; Plummer et al. 1976; Pope, D. N. et al. 1980; Reeve, Coster, & Johnson 1980; Renwick 1968: 65–68, 1970b, 1972; Renwick, Hughes, & Tanletin 1973; Renwick, Hughes, & Vite 1975; Renwick & Vite 1968, 1969: 1222–1223, 1970: 249–350; Richerson, B. A. 1978; Richerson, J. V., McCarty, & Payne 1980; Richerson, J. V. & Payne 1978, 1980; Roberts, E. A. et al. 1982; Roelofs 1978; Rose-Chaffin 1967b; Rudinsky 1973a, 1973b: 584, 1979a: 408; Rudinsky & Michael 1973, 1974; Rudinsky et al. 1974; Ryker 1988; Ryker, Libbey, & Rudinsky 1979: 793; Schmitt et al. 1988; Schnell 1976; Schowalter 1981; Schowalter, Coulson, & Crossley 1981; Silverstein 1970a, 1970b; Silverstein & Young 1976: 20; Stein & Coster 1977; Stephen & Kinn 1980; Stewart, T. E. et al. 1977; Svihra 1982; Svihra, Payne, & Birch 1980; Thatcher, R. C. & Connor 1985; Thatcher, R. C., Coster, & Payne 1978; Thomas, H. A. 1981; Tomescu et al. 1978; Trostle 1971; Tsao 1966: 11–16; Tsao & Yu 1967: 13–20; Turnbow & Franklin 1980; Vite 1968, 1969, 1970b: 249–350, 1974, 1975; Vite & Crozier 1968: 87–93; Vite, Gara, & von Scheller 1964: 461–470, 1985; Vite, Hughes, & Renwick 1976; Vite & Pitman 1967: 683–701, 1968, 1969: 117; Vite & Renwick 1968: 61–68, 1971a; Vite et al. 1974, 1985; Wagner, Flamm, & Coulson 1985; Wagner, T. L. et al. 1981, 1982; Watterson, Payne, & Richerson 1982; Weaver, N. 1978a; Weber & Schurig 1984; White, J. D. 1981; White, J. D. & Richmond 1979; White, R. A. 1980b; Whitesell & Buchanan 1986; Wood, D. L. 1967b, 1967c, 1978, 1979a; Wood, D. L. & Silverstein 1970: 557–558; Wright, R. H. 1974: 135; Yu & Tsao 1967. (**cn**) Alatorre 1978; Alatorre Rosas 1978; Aldrich et al. 1958: 200–202; Alexander, Skelly, & Webb 1981; Alvarado 1939a; Amman & Rasmussen 1969: 631; Anderson & Bremer 1967: 71–73; Anderson, N. H. 1967a; Anderson, R. F. 1947: 2–6, 1948: 596, 1960: 216, 1966, 1971b, 1977: 17; Anderson, R. L. et al. 1982: 189; Anderson, W. C., Guildin, & Vasievich 1985,1987; Anonymous 1919c: 43, 1924c: 10, 1924f: 40, 1933b: 21, 1939: 644, 1941i: 812, 1943a: 1, 1950f: 4, 1952h: 6, 1955j: 14, 1958a: 4, 7, 1960a, 1960c, 1960f, 1960j: 1, 1960m, 1960n, 1961f, 1961g, 1961h, 1961i, 1961q, 1961s, 1962f, 1962h, 1962v, 1962w, 1962x, 1962z, 1963c, 1963i, 1963j, 1963v, 1963w, 1963y, 1964g, 1964h, 1964s, 1964u, 1965b, 1965p, 1965r, 1966f, 1966h, 1966u, 1967b, 1967c, 1967f, 1967t, 1968c, 1968g, 1968p, 1969b, 1969e, 1969m, 1970a, 1970g, 1970h,

1970j: 2, 1970t, 1971e, 1971m: 2, 1971v, 1971aa, 1971ab, 1971ad, 1971af, 1971bb, 1971dd, 1971gg, 1972a, 1972f, 1972n, 1972t, 1973b, 1973j, 1973k, 1973n, 1974e, 1974t, 1974v, 1974w: 3, 1975b, 1975f, 1975r, 1975t, 1976e, 1976f, 1976k, 1977b, 1977d, 1977f, 1977g, 1977m, 1977u, 1977v, 1977w, 1977x, 1978a, 1978c, 1978e, 1978y, 1978z, 1979a, 1979d, 1979v, 1979w, 1979x, 1979y, 1979z, 1980h, 1980n, 1980p, 1980r, 1980s, 1980t, 1980u, 1980w, 1980y, 1980aa, 1981b, 1981c, 1981d, 1981k, 1981m, 1981n, 1981p, 1981q, 1981r, 1981t, 1981u, 1981v, 1982a, 1982m, 1982n, 1983, 1985: 47, 1987, 1988f; Appleby 1976: 48; Ascencio 1979; Atkinson & Wilkinson 1979; Bailey 1976; Baker, B. H. 1963; Baker, W. L. 1972: 240; Bakke 1973; Balch, Webb, & Fettes 1955: 453–465; Barber 1975; Barber & Bassett 1976; Barker 1954: 1–2; Barker & Nettles 1954: 1–2; Barnhill 1947: 221–222; Barras 1973; Barron 1970b: 2, 1971: 57–59; Barry 1972, 1975a, 1975b, 1976, 1977a, 1977b, 1980, 1981, 1985; Barry & Bassett 1969a, 1970a, 1970b, 1970c, 1972, 1976; Barry, Bassett, & McDowell 1976; Barry, Bassett, & Peterson 1972; Barry, Bassett, & Wilson 1970; Barry & Flavell 1969, 1970, 1973; Barry & Landgraf 1969, 1970; Barry, Landgraf, & Wilson 1969; Barry & McDowell 1968, 1969a, 1969b, 1969c, 1969d, 1970a, 1970b, 1970c, 1970d, 1971a, 1971b, 1972, 1973, 1974a, 1974b, 1976; Barry, McDowell, & Bassett 1968, 1969; Barry, McDowell, & Gentry 1973; Barry & Ragenovich 1976; Barry & Remion 1970; Barry & Terry 1972; Barry, Ward, & McDowell 1972, 1973; Barry & Wilson 1969, 1971; Barry, Wilson, & McDowell 1969a, 1969b; Barry et al. 1968; Bassett 1974, 1980a, 1980b, 1980c; Bassett, McDowell, & Landgraf 1970; Beal 1933: 328–336, 1948, 1956, 1966; Beal et al. 1952, 1955, 1964: 31; Bean 1963: 26, 1966: 41; Becker 1951; Beeson 1918; Belanger 1979a, 1980a, 1980b, 1981c, 1989; Belanger, Hedden, & Tainter 1986; Belanger & Malac 1980; Belanger, Porterfield, & Rowell 1980; Belanger & Price 1979; Belanger et al. 1979, 1983; Bell & Bassett 1966a, 1966b, 1966c, 1966d, 1966e, 1966f, 1967, 1968, 1968a, 1968b, 1968c, 1968d, 1970; Bell, Bassett, & Ciesla 1965a, 1965b, 1965c, 1966, 1968; Bell, Bassett, & Franklin 1965; Bell, Bassett, & Wilson 1968a, 1968b, 1968c; Bell & Ciesla 1966; Bell, Ciesla, & Bassett 1967; Bell, Ciesla, & Franklin 1965; Bell & Clerke 1967; Bell, Clerke, & Wilson 1968a, 1968b; Bell, Drake, & Overgaard 1967; Bell, Flavell, & Ciesla 1966; Bell, Knighten, & Ciesla 1966a, 1966b; Bell, Lambert, & Ciesla 1965, 1966; Bell, Lambert, & Wilson 1968; Bell, McDowell, & Bassett 1970; Bell, McDowell, & Wilson 1969, 1970; Bell, Plaugher, & Ciesla 1966; Bell, Rauschenbarger, & Ciesla 1966; Bell, Wilson, & Lambert 1967; Bennett, W. H. 1954, 1955: 2–12, 1956a: 3–6, 1956b, 1966b, 1968, 1971, 1972; Bennett, W. H. & Ciesla 1971; Bennett, W. H. & Ostmark 1966, 1968, 1972; Bennett, W. H. et al. 1958: 1–35; Bentley 1931: 104–105; Berisford 1980; Berisford & Brady 1981, 1986; Berisford, Brady, & Ragenovich 1981; Berisford & Payne 1988a, 1988b; Berisford et al. 1980, 1981, 1986; Berryman 1988; Biesbrock, Woodard, & Downs 1976; Billings 1974b, 1977a, 1977b, 1979, 1980a, 1980b, 1982a, 1982b, 1984a, 1988a, 1988b; Billings & Bryant 1982, 1983, 1983a; Billings, Bryant, & Wilson 1985; Billings & Doggett 1980a, 1980b; Billings & Goyer 1987; Billings & Hynum 1980; Billings & Pase 1979a, 1979b; Birch & Svihra 1979b; Blackman 1950; Blanche et al. 1985; Bongberg 1956a, 1957, 1962; Brady et al. 1980; Branham et al. 1985; Brender 1977; Bridges 1981; Briegleb 1955: 66, 1957: 68, 1958: 5–8; Brodie & Degroot 1976; Brown, M. W., Nebeker, & Honea 1987; Browne 1968b: 224; Bryant 1985; Buchanan 1964, 1965: 34; Buckhorn 1957; Buhyoff, Leuschner, & Arndt 1980; Buhyoff, Leuschner, & Wellman 1979a, 1979b; Buhyoff & Riesenman 1979; Buhyoff & Wellman 1980; Buhyoff, Wellman, & Daniel 1982; Bush, P. B. et al. 1987; Caird 1935: 709–733; Cameron, R. S. 1987; Cann 1952: 150–153; Carothers 1980b, 1980c; Carruth 1941: 6; Ceballos & Cordoba 1945a; Chaffin 1967; Chamberlin 1939: 165–167; Chellman & Wilkenson 1975, 1980; Chittenden 1897: 67–75, 1899: 55–61; Chrystal 1949b: 3–11; Ciesla 1966: 397, 1968, 1969, 1979; Ciesla, Bassett, & Franklin 1967; Ciesla, Bell, & Curlin 1967; Ciesla, Bell, & Franklin 1965c; Ciesla, Lambert, & Franklin 1965b; Clark 1974; Clark & Osgood 1964: 1–4; Cleland et al. 1982; Clerke 1969, 1973; Clerke, Barry, & Wilson 1973a, 1973b; Clerke & Bassett 1969a; Clerke, Bassett, & Applegate 1970; Clerke, Bassett, & Knighton 1968; Clerke, Bassett, & Lambert 1968; Clerke, Bassett, & Wilson 1969; Clerke, Bell, & Wilson 1968; Clerke & Gentry 1973; Clerke, Hanson, & Barry 1971; Clerke, Landgraf, & Bassett 1968a, 1968b, 1968c; Clerke, Landgraf, & McDowell 1969; Clerke & Marshall 1972; Clerke & McDowell 1969, 1972a, 1972b, 1972c, 1972d, 1973a, 1973b; Clerke, Price, & Wilson 1972; Clerke & Raffa 1974a, 1974b; Clerke & Ward 1972a, 1979; Clerke & Wilson 1970, 1973, 1974; Coleman 1974, 1976, 1982; Cook & Hain 1985b, 1986b, 1986c; Copony & Morris 1972; Coster 1977a, 1978, 1979, 1980; Coster & Hertel 1980; Coster & Johnson 1980; Coster & Ragenovich 1976; Coster & Searcy 1979; Coster et al. 1973; Coulson, J. R. 1981: 7; Coulson, R. N. 1973, 1975b, 1980a, 1984b; Coulson, R. N., Graham, & Lovelady 1988; Coulson, R. N., Pulley, & Edson 1979; Coulson, R. N. & Witter 1984: 520; Coulson, R. N. & Stark 1982; Coulson, R. N. et al. 1972, 1973a, 1973b, 1975a, 1976, 1979, 1980, 1980a, 1985, 1989; Coyne & Lott 1976; Coyne et al. 1954: 89–99; Craighead 1925a: 577–586, 1925b: 976–979, 1925c: 349–351, 1927: 9,

1935: 134, 1942b, 1951; Craighead & Middleton 1930; Craighead & St. George 1928: 2, 11, 1930: 433–435, 1938: 26–34, 1940; Craighead et al. 1930: 4; Crawford 1963, 1967; Crisp et al. 1981; Cruishank 1944: 58–59; Crutchfield 1976a, 1976b; Currie 1905: 100; Daniels et al. 1979; Daniels, Leuschner, & Burkhart 1976; Davis & Nagel 1956: 210–211; Demmon 1955: 70–73, 1956: 71–74; de Steiguer & Hedden 1988; de Steiguer, Hedden, & Pye 1987; DeMars, Hain, & Slaughter 1979; DeMars et al. 1982; Dixon & Osgood 1961: 1–34; Doane et al. 1936; Doggett 1971; Downing, Ciesla, & Rauschenberger 1968; Downing, Ward, & Ciesla 1970: 25; Drake 1970, 1974; Drew 1978; Drooz 1985: 343; Dull 1980, 1982: 8; Dyer 1973; Dyer et al. 1953: 8, 19; Dziadzio 1978; Ebel, Merkel, & Kowal 1964, 1971, 1975, 1977, 1980; Ebel et al. 1959; Eikenbary, Arnold, & Pinkston 1974; Elliot & Mobley 1938: 332–335; Elmagraby et al. 1986; Erickson 1978; Escherich 1912a; Essig 1926: 513, 1958: 514; Fargo et al. 1978; Fatzinger & Dixon 1965: 451–455; Felt 1905: 6, 1924: 252, 1926: 252, 1930a: 241, 252, 1937b; Felt & Bromley 1943: 326–327; Felt & Rankin 1932: 405; Ferguson 1977; Fiske 1908: 24–26; Fitzpatrick & Lashomb 1979; Flamm, Coulson, & Payne 1988; Flavell 1969; Flavell & Bassett 1966, 1967, 1969a, 1969b, 1969c; Flavell & Bell 1966a, 1966b; Flavell, Bell, & Bassett 1968; Flavell, Bell, & Ciesla 1966a, 1966b; Flavell & Lambert 1971; Flavell & Wilson 1969; Flory, Nettles, & Barker 1955: 10–12; Flory et al. 1947: 26–27; Foltz 1979; Foltz, Pulley, & Pope 1980; Foltz et al. 1976, 1977; Folweiler 1951; Forbes 1930: 103; Ford 1951; Foster, D. 1982; Foster, J. H. 1912; Franklin 1967: 43–44, 1967: 355–360, 1969: 117–125, 1969: 119–120, 1970a: 53–57, 1970b, 1970c: 175–182; Franklin, Astin, & Lambert 1963; Franklin & Green 1965: 202–203; Friend 1942b: 144–145, 1943; Gambliel et al. 1985; Gara 1966a, 1966b, 1967b: 355–360; Gaumer & Gara 1967: 373–377; Geiler 1975; Gentry, G. R. et al. 1979: 802; Gerhart & Ahler 1949: 636–639; Ghent 1979a, 1979b; Ghent & Barry 1977; Ghent & Ragenovich 1976; Goehring 1980; Gold, Mawby, & Hain 1980a; Golden 1975; Goldhammer, Stephen, & Paine 1989; Goyer & Finger 1980; Graham 1939b, 1952; Gunter 1957; Hagedorn 1910d: 20; Hain & Cook 1988a, 1988b; Hain & Matson 1984; Hain & McClelland 1980; Hain et al. 1978, 1979, 1983; Haines, Haines, & Liles 1976; Halperin 1976a; Ham & Hertel 1984; Hamel 1980: 776; Hammerle 1952; Hammond 1980; Hanson, J. B., Barry, & Baker 1971, 1973; Hanson, S. 1940; Harrison 1956; Hastings, A. R. & O'Brien 1973: 65; Hastings, F. L., Brady, & Jones 1989; Hastings, F. L. & Coster 1981; Hastings, F. L. & Jones 1976; Hastings, F. L., Jones, & Franklin 1981a, 1981b, 1981c; Hastings, F. L., Jones, & Kislow 1977; Hastings, F. L. et al. 1981; Hay, E. 1976; Hazel, Hall, & Maki 1977; Hedden 1978b, 1979, 1985; Hedden, Barras, & Coster 1981; Hedden & Lorio 1985; Heller et al. 1955: 483–487, 1959: 595–606, 695; Heller, R. C. 1968: 387–434; Hepting 1952; Hertel 1980, 1981; Hertel, Branham, & Swain 1985; Hertel & Mason 1984; Hertel & Wallace 1983; Hetrick 1940b: 554–555, 1941, 1943: 30, 1949b, 1960; Hicks,R. R., Coster, & Mason 1987; Hicks,R. R., Coster, & Watterston 1978, 1979; Hicks,R. R. & Mason 1982; Hicks,R. R. et al. 1980a, 1980b, 1981; Hinds 1912: 15; Hitchings & Levi 1981; Hodges 1966; Hodges & Lorio 1970: 1651–1671; Hodges & Pickard 1971; Hodges & Thatcher 1976; Hodges et al. 1979, 1985; Hofacker & Loomis 1982: 26, 1983: 28; Hofacker, Loomis, & Gilstrap 1988: 4; Hofacker, Loomis, & Tucker 1984: 44, 1987; Hofacker et al. 1989: 6; Hoffard 1980a, 1980b, 1980c, 1980d, 1981a, 1981b, 1985; Hoffard, Carothers, & Wilson 1980; Hoffard & Ghent 1979; Hoffard & Johnson 1980; Hoffard & Lambert 1980a, 1980b, 1980c; Hoffard, Lambert, & Barry 1981; Hoffard, St. Clair, & Ianniello 1980; Hoffard & Williams 1983; Hoffard et al. 1979; Hoffmann & Anderson 1945: 436–439; Honea, Nebeker, & Straka 1987; Hopkins 1892a: 353, 1892b: 64, 1892c, 1893a: 143, 1893c: 187, 1894b: 213, 1894c, 1894d: 126, 1894g: 280, 1896d: 246, 250, 1897a: 35, 1897b: 94, 147, 1897c: 41, 29, 1898a: 104, 1899a: 343, 1899b: 13–14, 27, 1899c: 245, 250, 394, 448, 1901a: 250, 1901b: 8, 1902e, 1903b: 59, 1903e: 270–275, 1904a: 41, 44, 46, 1904b: 270–275, 1905b: 80, 1906c: 632, 1907c: 515, 1908: 131, 1908c: 163, 1908d: 549, 1909b: 56–72, 1909c: 58, 1909d: 574, 1910a, 1910f: 1, 1910g: 58, 1911b: 5, 1911c: 66, 1919: 43, 1919: 503, 1921: 1–15; Hough 1882: 259; Howard 1906: 14, 1920: 1–36, 1923: 31, 1924a: 411; Hoyt 1951b: 17; Huber & Barry 1981; Huber, Hoffard, & Ghent 1983; Huber & Williams 1983; Huffaker 1964; Hyche 1965, 1975, 1976, 1977; Hyland 1971; Ifju, Ferguson, & Oderwald 1977; Ifju et al. 1979; Islas-Salas 1968; Jackson et al. 1954: 25; Jones, A. S., Hastings, & Kislow 1980; Jones, G. D. & Ford 1953: 1–6; Jump & Tsao 1972, 1973; Kalkstein 1976; Kelley, W. 1986; Kellogg 1951: 796; Kelly, M. W. et al. 1982; Kerr 1957: 36, 38; Ketcham 1964a, 1964b; Kirby 1954: 5; Kline & Graham 1979; Knox & Schroeder 1963; Knull 1934b: 716–718; Koenigs & Beers 1980; Kowal 1953: 106, 1956a: 4, 1957b: 19, 1957d: 175, 1957e: 7, 1958a: 399, 1959a: 39, 1959b: 161, 1960c: 1–6, 1961b, 1961d, 1962, 1964; Kowal & Coyne 1952: 91; Kowal & Ebel 1971; Kroll & Reeves 1978; Ku, T., Shelburne, & Sweeney 1979; Ku, T., Sweeney, & Shelburne 1976, 1977, 1980, 1981a, 1981b; Kucera 1969; Kucera & Barry 1973; Kucera & Nachod 1972; Kucera & Pierce 1974; Kulhavy 1984, 1986; Kulhavy, Mitchell, & Conner 1988a, 1988b; Kushmaul & Cain 1981; Kushmaul et al. 1979; Landgraf 1966b; Landgraf, Barry, &

McDowell 1969; Landgraf & Bassett 1968; Landgraf, Grady, & Rauschenberger 1969; Landgraf, Knighten, & McDowell 1969; Landgraf & McDowell 1969a, 1969b; Landgraf et al. 1969; Lara,R. R. 1966; Lassen 1975; Lathrop 1961; Leach et al. 1937: 318; Lee 1954a: 5, 1954b: 767; Lee & Coyne 1955: 4; Leng 1920: 338; Leuschner 1979a, 1980; Leuschener & Maine 1980; Leuschner & Newton 1974; Leuschener, Newton, & Neal 1974; Leuschener, Shore, & Smith 1979; Leuschener & Young 1978; Leuschner et al. 1978; Levi 1978, 1981, 1982; Levi & Dietrich 1976; Lewis, Payne, & Coulson 1973; Lih & Stephen 1983; Linit & Stephen 1978, 1982; Loomis, Hofacker, & Tucker 1985: 4, 1986; Lorio 1966b, 1968a: 565–566, 1978a, 1978b, 1980a, 1980b, 1984, 1986; Lorio & Bennet 1974; Lorio & Branham 1988; Lorio, Mason, & Autry 1982; Lorio & Sommers 1980, 1981, 1985, 1986; Lorio & Zarnoch 1984; Lugger 1899a: 315; Lutken 1930: 23; MacDonald et al. 1989; MacGowan 1980; Maine & Leuschner 1978; Maine, Leuschner, & Tipton 1980; Maki, Hazel, & Hall 1981; Marlatt 1933: 29, 47–48; Marshall & Barry 1973; Mask 1982; Mason, A. B. 1911: 30, 35; Mason, G. N. 1979, 1980a, 1980b; Mason, G. N. & Bryant 1984; Mason, G. N., Hertel, & Thatcher 1982, 1983; Mason, G. N. & Howard 1980; Mason, G. N. & Jones 1969: 2; Mason, G. N. et al. 1981, 1985; Mathews 1978; Mattoon 1915a: 35, 1915b: 25, 1926: 21, 1940: 42, 1954: 42; Mattson & Haack 1987; Mawby 1980a; Mawby & Gold 1984b; Mawby & Hain 1985a, 1985b; Mawby, Hain, & Doggett 1989; Mayyasi et al. 1975; McArdle 1956: 3, 12; McCambridge & Kowal 1957: 2–4; McCambridge & Rossell 1957: 12; McCambridge et al. 1958: 2–7; McClelland, Hain, & Mawby 1979; McDowell & Clerke 1973; McDowell & Ward 1971; McMinn 1965; McNab 1983; Mead 1973c: 2, 3; Merkel 1956: 130, 1957: 119, 1979; Merkel & Kowal 1956: 2–5; Merkel & Kulman 1955: 2; Merkel et al. 1955: 60, 62; Metcalf & Flint 1951: 797; Middleton 1924: 148, 1928a: 375, 1928b: 423; Miller, M. C. 1979a, 1979b; Miller, M. C. et al. 1978, 1979; Millers 1971: 37; Mizell, Neel, & Lashomb 1981; Mokrzecki 1926b: 3; Moody, C. W. 1980; Moore 1932: 21; Moore, G. E. 1970a, 1973, 1978, 1980, 1981; Moore, G. E., Hertel, & Bhattacharyyd 1980; Moore, G. E. & Layman 1978; Moore, G. E. & Taylor 1976; Moore, G. E., Taylor, & Smith 1979; Moore, G. E. & Thatcher 1973a, 1973b; Morris, C. L. 1975, 1976, 1979; Morris, C. L. & Copony 1974; Morris, C. L. & Wain 1978; Moser & Pickard 1964; Moser, J. C. & Browne 1978; Mumford 1966: 20; Munns et al. 1928: 336; Murphy 1917: 27; Nagel 1959: 1; Nagel & Davis 1956: 20–21; Nagel et al. 1956: 20, 1957: 894–898; Neal 1979: 802; Nebeker 1979, 1981; Nebeker, Hackney et al. 1978; Nebeker, Hocking et al. 1978; Nebeker & Hodges 1985; Nebeker et al. 1985; Nettleton, Conner, & Ryan 1985; Newton, C. M. & Leuschner 1973; Nieland 1943: 8–9; O'Byrne 1946b: 12, 1946c: 1–5; O'Donnell, Payne, & Walsh 1986; Ollieu 1969; Ollieu & Mason 1967: 5, 1968: 4; Ollieu & Williamson 1965; Orr, L. W. & Kowal 1956: 654; Orr, W. W. & Rodriguez 1967; Osgood 1957: 1–19; Ostmark & Bennett 1969a, 1969b; Overgaard 1970: 1016–1017; Packard 1890: 722; Page & Ruffin 1940: 3–4; Paine 1983; Paine, Stephen, & Cates 1988, 1988b; Paine, Stephen, & Mason 1985; Paine, Stephen, & Taha 1984; Paine et al. 1985; Pase & Fagala 1980; Patterson, D. W. 1978; Payne 1980a, 1980b, 1988; Payne & Billings 1988, 1989; Payne, Coster, & Johnson 1979; Payne, Coulson, & Thatcher 1974; Payne & Richerson 1979a, 1979b; Payne & Wood 1979: 479; Payne et al. 1985; Paz 1975; Pechanec 1958: 43–47; Perry 1951: 159; Phelps 1977; Plumb 1958: 9; Pope, D. N. et al. 1980; Poterfield & Rowell 1981; Powell, J. M. 1969: 2; Price, T. S. 1980, 1987; Price, T. S. & Doggett 1978; Price, T. S. & Godbee 1974; Price, T. S. & Thomas 1979; Pulley, Coulson, & Foltz 1979; Pulley, Flamm, & Coulson 1988; Pulley et al. 1976, 1977; Raffa & Berryman 1983: 806; Ragenovich 1976a, 1976b, 1976c, 1976d, 1977b, 1977c, 1977d, 1978a, 1978b, 1978c; Ragenovich & Coster 1974; Rauschenberger 1968: 30–31; Rauschenberger & Barry 1971; Rauschenberger & Bell 1968; Rauschenberger, Marshall, & Wilson 1973; Rauschenberger & McDowell 1969b, 1969c, 1971; Rauschenberger & Wilson 1972; Reamer 1964; Reed, Burkhart, & Leuschner 1979, 1980; Reed et al. 1980, 1981; Reed, Hedden, & Daniels 1982; Richerson, B. A. 1978; Remion 1980; Richerson, J. V., McCarty, & Payne 1980; Richerson, J. V. & Payne 1980; Richmond et al. 1978; Riesenman 1977; Riley 1893: 140; Robertson, F. D. 1987; Robertson, R. L. & Whitefield 1968a: 1–6; Robinson, J. V. 1981; Rodriguez 1966: 8–11, 1968: 73; Roelofs 1978; Rogers, T. J. 1977a, 1977b, 1978a, 1978b, 1978c: 23; Rose-Chaffin 1964a, 1964b, 1966a, 1966b, 1967b: 1481–1482, 1968: 53–63; Ross & Mattoon 1939: 45–48; Roton 1987; Rudinsky 1979a: 408; Rush & Knauer 1975; Rykiel et al. 1984; Sader & Miller 1976; Salazar 1982; Sambeek 1982; Sand & Bryan 1947: 28; Sauders et al. 1985; Schaufuss 1892a: 316; Schnell 1976; Schoene 1924: 5–27, 1926: 4, 23; Schowalter, Coulson, & Crossley 1981; Schowalter et al. 1981, 1982; Schreuder et al. 1980; Schroeder 1965; Schuder 1969: 79; Schwarz 1898: 81; Shamoun 1978; Shamoun & Levi 1985; Sharpe & Hsin-i 1985; Sharpe et al. 1985; Shea 1985; Shore & Leuschner 1977, 1978; Sinclair, S. A. 1978a, 1979, 1980; Sinclair, S. A. & Ifju 1977, 1979; Sinclair, S. A., Ifju, & Heikkenen 1977a, 1977b; Sinclair, S. A., McLain, & Ifju 1979a, 1979b; Skelley et al. 1988; Smith, D. P. 1987; Smith, J. D. 1977a, 1977b, 1978a, 1978b; Smith, J. D. &

Twardus 1979; Smith, J. L. & Mead 1981; Smith, R. F. 1961, 1962; Smith, R. F. & Huffaker 1973: 36, 1974; Smith, R. K. 1961, 1962b: 113–116, 1963; Snow et al. 1989; Snyder 1923: 134, 1936: 19; Snyder et al. 1923: 414; Speers 1956: 130; Speers et al. 1955: 100; St. George 1924: 37–38, 1925: 50–51, 1928: 15, 1929b: 1–8, 1930: 825–828, 1931: 16; St. George & Beal 1929: 17, 37; Stark, R. W. 1973; Steiguer & Hedden 1988; Stephen 1983; Stephen & Coulson 1980; Stephen & Kinn 1980; Stephen & Lih 1985; Stephen, Lih, & Wallis 1988, 1989; Stephen & Paine 1984, 1985b; Stephen, Paine, & Lih 1983; Stephen, Searcy, & Hertel 1980; Stephen & Taha 1976, 1979a, 1979b; Stephen et al. 1988, 1988a; Stephenson 1956: 220; Sterrett 1914: 10; Stevens 1981; Stevens, Brewer, & Leatherman 1982: 22; Stimac & Cambell 1980; Struble 1937d: 9; Stultz 1977; Swain, K. M. & Fox 1979; Swain, K. M. & Remion 1981; Swaine 1925: 261–266; Taha & Stephen 1981, 1984; Taha, Stephen, & Motamedi 1980; Taylor, J. F. & Moore 1978; Thatcher, R. C. 1957: 13, 1973, 1974, 1977, 1979a, 1979b, 1980a, 1980b, 1982, 1984; Thatcher, R. C. & Barry 1982; Thatcher, R. C., Coster, & Payne 1978; Thatcher, R. C., Mason, & Hartel 1985; Thatcher, R. C. & Pickard 1964, 1966: 556; Thatcher, R. C. et al. 1980, 1982; Thatcher, T. O. 1961; Thomas, G. M. & Poinar 1973: 275; Thomas, H. A. et al. 1975; Thompson, W. H. 1985; Thompson, J. H., Barry, & Gentry 1976; Thompson, J. H. & Bassett 1975, 1976a, 1976b; Thompson, J. H. & Bradburn 1976; Thompson, J. H. & McDowell 1976a, 1976b; Thompson, J. H., McDowell, & Brooks 1975, 1976; Toko & Landgraf 1979; Turnbow 1982; Turnbow, Franklin, & Nagel 1978; Turnbow et al. 1982, 1983; Twardus 1976, 1977a, 1977b, 1977c, 1978; Twardus & Hertel 1978b; Twardus, Hertel, & Ryan 1978; Uhler 1980; Underhill & Fronk 1947: 33; Upton 1945: 100–101; Valentine, H. T. 1981; Van den Bosch 1968; Van Sambeek 1982; Vasievich & Thompson 1985; Vite 1968, 1969, 1970b, 1972; Vite & Coster 1973; Wagner et al. 1979; Walker 1956: 1–8; Walker, L. C. 1968, 1980; Walters, E. 1981, 1982; Walters, E. & Weldon 1978, 1982a, 1982b; Walters, F. C. & Leuschner 1978, 1979; Walters, J. W. & Lessard 1978: 11; Ward et al. 1985; Ward, J. D. G. 1971a, 1971b, 1974, 1975a, 1975b, 1975c, 1975d; Ward, J. D. G. & Barry 1972a, 1972b, 1975; Ward, J. D. G. & Bassett 1970; Ward, J. D. G., Bassett, & Erickson 1973; Ward, J. D. G., Bassett, & Lambert 1975; Ward, J. D. G., Bassett, & McDowell 1970a, 1970b, 1974, 1975a, 1975b; Ward, J. D. G., Bassett, & Wilson 1970a, 1970b; Ward, J. D. G. & Clerke 1970, 1972a, 1972b; Ward, J. D. G. & Gentry 1974; Ward, J. D. G., Kucera, & Downing 1971: 27; Ward, J. D. G., Knauer, & Barry 1970; Ward, J. D. G. & Marshall 1973a, 1973b; Ward, J. D. G. & McDowell 1970, 1971, 1973a, 1973b, 1973c; Ward, J. D. G., McDowell, & Bassett 1970a, 1970b; Ward, J. D. G., McDowell, & Bradburn 1974; Ward, J. D. G., McDowell, & Wilson 1972, 1973; Ward, J. D. G. & Mistretta 1978: 49; Ward, J. D. G., Rush, & McDowell 1975; Ward, J. D. G. & Thompson 1975; Ward, J. D. G., Thompson, & Bassett 1975; Ward, J. D. G. & Wilson 1970a, 1970b, 1971, 1972, 1973a, 1973b, 1973c, 1973d; Ward, J. D. G., Wilson, & Barry 1973; Ward, J. D. G., Wilson, & Knighten 1972; Ward, J. D. G., Wilson, & McDowell 1972, 1973; Ward, J. D. G. et al. 1974; Waters, W. E. 1973, 1974, 1985b; Waters, W. E., Stark, & Wood 1985; Webb 1908: 117; Weitzman 1975; Westbrook, Hertel, & Searcy 1981; Williams, I. L. 1980; Williams, T. M. et al. 1989; Williamson, D. L. 1971a, 1971b, 1972; Williamson, D. L. & Vite 1971; Williston, Rogers, & Anderson 1980; Wilson, E. T., Clerke, & Ward 1974; Wilson, M. C., Schuder, & Provonsha 1982: 119; Wood, D. L. 1979a; Wood, D. L. et al. 1985; Wood, J. R. 1977, 1979; Woodard & Biesbrock 1976; Woodson 1985; Wootten 1963; Wygant 1959: 274; Wykoff et al. 1947: 34; Wyman 1932: 47; Yates 1977: 103; Young, R. L. & Leuschner 1977; Zarnoch, Lorio, & Sommers 1984; Zavitz 1905: 632, 1906a: 126, 1906b: 515, 1907: 549, 1908: 574. (**ec**) Alexander 1977; Alexander, Skelly, & Webb 1981; Alexander et al. 1980; Anderson, N. H. & Brewer 1976; Anderson, R. F. & Doggett 1980; Anderson, R. L., Hoffard, & Mistretta 1982; Anonymous 1924f: 40, 1963c, 1963v, 1964c, 1964q; Atkinson & Wilkensen 1979; Baker, W. L. 1972: 240; Barras 1969, 1970: 1187–1190, 1972, 1973, 1975; Barras & Hodges 1969: 489–493; Barras & Marler 1974; Barras & Perry 1972; Barras & Taylor 1973; Beal 1927c, 1933, 1934, 1953; Beal et al. 1952: 48–50; Belanger 1980a; Belanger & Hatchell 1981; Belanger, Hedden, & Lennartz 1988; Belanger, Hedden, & Tainter 1986; Belanger & Price 1979; Bennett & Ciesla 1971; Bennett & Pickard 1966: 404; Berisford 1974: 869, 1980; Berisford, Turnbow, & Brady 1982; Berryman 1966b: 519, 1974: 583, 1988; Biel et al. 1977; Billings 1985; Billings & Cameron 1984; Birch 1978b; Birch & Svihra 1979b; Blackwell et al. 1986; Blanche et al. 1983; Borden 1983; Borden et al. 1981: 561; Bramble & Holst 1935, 1940: 881–889; Brand & Barras 1977; Brand et al. 1977; Bridges 1978, 1979, 1983, 1985, 1987a, 1987b; Bridges, Marler, & McSparrin 1984; Bridges & Moser 1983, 1984, 1986; Bridges, Nettleton, & Conner 1985; Bridges & Perry 1985, 1987; Burks 1979: 774; Bushing 1965: 458; Caird 1935; Callaham 1955c; Callaham & Shifrine 1960: 146; Cameron & Billings 1988; Camors & Payne 1972, 1973; Campbell & Smith 1978, 1980; Carruth 1941; Cary 1932; Chamberlin 1939: 165–167; Clark 1964, 1965a, 1973b, 1974; Clark & Osgood 1964c; Clark, Webb, & Franklin 1979; Clausen 1931, 1956: 67, 1978: 294; Clerck

& Mahan 1978; Cook, S. P. & Hain 1985b, 1986a, 1987a, 1987b, 1988a, 1988c; Cook, S. P., Hain, & Nappen 1986; Coster, Geer, & Johnson 1981; Coster, Hicks, & Watterston 1978; Coster & Payne 1974; Coster & Ragenovich 1976; Coster & Searcy 1979, 1981; Coster et al. 1977a, 1977b, 1978; Coulson 1984a; Coulson, Hain, & Payne 1974; Coulson, Pulley, & Edson 1979; Coulson et al. 1974, 1975a, 1975b, 1976, 1980a, 1983, 1985; Coyne & Critchfield 1974; Craighead 1925a; Craighead & St. George 1940; Craighead et al. 1927; Crawford 1912; Cross & Moser 1971; Deangelis, Hodges, & Nebeker 1986; DeMars & Hain 1980; DeMars, Hain, & Slaughter 1979; Dix & Franklin 1974, 1977, 1978, 1981, 1983; Dixon & Osgood 1961: 1–34; Dixon & Payne 1979a, 1979b, 1980; Doggett 1971; Drew 1977; Dwinell 1988; Ebel, Merkel, & Kowal 1968; Egan 1978b; Fares, Goeshi, & Sharpe 1981; Fares, Sharpe, & Magnuson 1980a; Fares et al. 1980; Fargo, Wagner, & Coulson 1985; Fargo et al. 1978; Felix, Uhrenholdt, & Parmeter 1971: 1697; Finger 1978: 50; Fiske 1908; Flamm, Coulson, & Payne 1988; Flamm et al. 1986, 1987; Flavel et al. 1970; Floves & Enkerlin 1978; Foltz et al. 1976b; Ford 1951: 3–4; Francke-Grosmann 1965: 143, 1966c; Franklin 1969a, 1969b, 1970a, 1970b, 1970c; Franklin & Green 1965; Franklin, R. H. 1967: 43; Frazier et al. 1981; Fry 1989: 16; Furniss, R. L. & Carolin 1977: 351; Gagne et al. 1980, 1982; Galoux 1947d; Gambliel et al. 1985; Gara, Vite, & Cramer 1966: 55–66; Gargiullo & Berisford 1981; Gaumer & Gara 1967; Geer, Coster, & Johnson 1981; Geiler 1975; Goldhammer 1988; Goldhammer, Stephen, & Paine 1989; Gosling, D. C. L. 1980; Goyer & Finger 1980; Goyer & Smith 1981; Goyer et al. 1980, 1985; Graham 1939b, 1952, 1967: 115; Green 1903a; Grissell 1979: 764; Grossmann 1931a; Hain & Ben Alya 1985; Hain et al. 1979, 1985; Haliburton 1943; Ham & Hertel 1984; Hammerle 1952: 8; Hanson, Baker, & Barry 1973; Hanson, Barry, & Baker 1971; Happ, Happ, & Barras 1975, 1976; Hare 1969; Harrar & Elis 1940; Harrar & Martland 1940a: 8, 1940b: 211; Hazel, Hall, & Maki 1977; Hedden 1978a; Hedden & Belanger 1985; Hedden & Billings 1979; Hedden & Reed 1980; Hemingway, McGraw, & Barras 1977; Hertert 1976; Hetrick 1941: 168, 1949a: 93–94, 1949b: 466–468, 1949c, 1960; Hicks,R. R. 1980; Hicks,R. R., Coster, & Watterston 1979; Hicks,R. R. et al. 1978, 1981; Hirschmann 1972a, 1972b, 1972e, 1972f; Hirschmann & Wisniewski 1982, 1983; Hodges 1966; Hodges, Elam, & Watson 1977; Hodges & Lorio 1969, 1973, 1975; Hodges & Pickard 1971; Hodges et al. 1985, 1989; Holst 1936: 513–518, 1937: 676; Hopkins 1892a, 1893f, 1894i, 1897a: 35, 1897c: 29, 41, 1901b: 8, 1903: 270–275, 1909b: 56–72; Howe et al. 1971; Hunter & Moser 1968: 119–124; Hunter, Rosario, & Moser 1989; Hurlbutt 1967; Hyche 1977; Hyland 1971; Jennings & Pase 1986; Johnson, Paul C. & Coster 1979, 1980; Joye & Perry 1976; Kalkstein 1974b, 1974c, 1976, 1981a, 1981b; Kaya 1984; King 1972; Kinn 1976, 1978, 1979, 1980, 1982, 1983a, 1983b, 1984b, 1984c, 1986: 114; Kinn & Stephen 1981; Kinn & Witcosky 1977, 1978; Knell & Allen 1979; Kowal 1960c; Kroll, Conner, & Fleet 1980a, 1980b; Kroll & Fleet 1979; Kroll & Reeves 1978; Ku, T., Sweeney, & Shelburne 1976, 1980, 1981a; Kudon 1979b; Kudon & Berisford 1980, 1981a, 1985; Kulhavy, Mitchell, & Conner 1988a, 1988b; Kushmaul & Cain 1981; Lanier et al. 1972: 1922; Leach et al. 1937: 318; Leuschner et al. 1976; Leuschner, Matney, & Burkhart 1977; Lewis 1971b, 1973; Lindquist 1970a: 983, 1970b, 1971, 1975b: 427; Lindquist & Hunter 1965; Linit & Stephen 1983; Lorio 1968a, 1968b, 1973, 1988; Lorio & Bennett 1974; Lorio & Hodges 1968a, 1968b, 1974, 1977; Lorio, Howe, & Martin 1972; Lorio & Hughes 1971; Lorio & Sommers 1980; MacGuidwin & Smart 1979; MacGuidwin, Smart, & Allen 1980; MacGuidwin et al. 1980; Majewski, T. & Wisniewski 1978b; Maki, Hazel, & Hall 1981; Marler & Barras 1978b; Marsh 1979: 148; Martinat 1987; Mason,R. R. 1971; Mason, W. R. M. 1984; Massey 1956: 14–24, 1957: 31, 1958: 30, 1966a, 1966c: 424; Matthews 1970; Mattoon 1926: 21, 1954: 42; Mattson & Haack 1987; Mayyasi et al. 1976; McClelland & Hain 1979; McGregor & Miller 1989; Mead et al. 1979; Merkel 1956: 130; Metcalf & Flint 1951: 797; Michaels 1984; Michaels, Sappington, & Stenger 1985, 1986; Michaels, Stenger, & Sappington 1986; Miller, J. M. 1931: 303; Miller, J. M. & Keen 1960: 144; Miller, M. C. 1983; Miller, M. C. et al. 1978; Mizell, Frazier, & Nebeker 1984; Mizell & Nebeker 1978, 1981, 1984; Moore, G. E. 1970a, 1970b, 1971: 28–37, 1972a, 1972b, 1972c, 1973b, 1977b, 1981; Moore, G. E. & Layman 1978; Moore, G. E. & Thatcher 1973a; Moser & Thompson 1986; Moser, J. C. 1975, 1976a, 1976b, 1979, 1981; Moser, J. C. & Branham 1988; Moser, J. C. & Bridges 1983, 1986; Moser, J. C. & Cross 1975; Moser, J. C. & Dell 1980; Moser, J. C. & Roton 1971; Moser, J. C., Thatcher, & Pickard 1971; Moser, J. C. & Vercammen-Grandjean 1979; Moser, J. C., Wilkinson, & Clark 1974; Moser, J. C. et al. 1978; Mott & Thomas 1977; Muesebeck 1938: 285; Munns et al. 1928: 336; Nebeker & Mizell 1980; Nebeker & Purser 1980; Nebeker et al. 1978, 1988; Nelson 1934: 327; Nelson & Beal 1929: 17, 37; Orr, W. W. & Rodriguez 1967; Otvos 1979; Overgaard 1968: 1197–1202, 1970; Pabst & Skorowski 1980; Paine, Birch, & Svihra 1981; Paine, Cates, & Stephen 1988; Paine & Stephen 1987b, 1987c, 1987d, 1988; Paine, Stephen, & Cates 1985, 1988a, 1988b; Palmer & Coster 1968; Payne 1980a, 1984a; Payne, Coulson, & Thatcher 1974; Payne, Dickens, & Richerson 1984; Payne

& Richerson 1979a, 1979b, 1985; Payne & Stephen 1987a; Perusquia 1982; Pickard 1965; Poinar 1975: 154; Poinar & Deschamps 1981: 87; Porterfield & Rowell 1981; Powell, J. M. 1969: 2; Pulley, Flamm, & Coulson 1988; Ragenovich 1977a, 1980a; Reeve, Coster, & Johnson 1980; Reid 1957d: 445; Reid & Gates 1970: 621; Rhumbold 1931: 851–862, 1932: 17; Richerson, B. A. 1978; Richerson, J. V. & Borden 1972a; Richerson, J. V., McCarty, & Payne 1980; Richerson, J. V. & Payne 1979; Rippen 1982; Rodriguez 1968; Rodriguez, L. 1962; Rose-Chaffin 1967b; Rose-Chaffin, Genel, & Krogstad 1966; Roton 1978; Rumbold 1931c: 847, 1936: 419; Ryker, Libbey, & Rudinsky 1979: 793; Schmitt 1980; Schmitt & Goyer 1983a, 1983b; Schowalter, Coulson, & Crossley 1981; Schowalter et al. 1981; Sikorowski, Pabst, & Tomson 1979; Singh 1977: 96; Skelly 1976; Skelly, Alexander, & Webb 1981; Slaby 1947: 379; Smiley & Moser 1970, 1974, 1975, 1976; Smith, M. T. & Goyer 1980, 1982; Smith, R. K. 1962, 1963; St. George 1928: 15; Stakman 1957: 245; Stark, R. W. 1975; Stein & Coster 1977; Stephen & Kinn 1980; Stephen, Lih, & Wallis 1989; Stephen & Paine 1985b; Stephen, Paine, & Lih 1985; Stephen & Taha 1976; Stephen et al. 1988; Stevens 1981; Stultz 1977; Swaine 1925c: 262; Taylor, J. F., Pederson, & Moore 1977; Tejada & Patton 1979; Thatcher, R. C. 1960: 1–25, 1973; Thatcher, R. C. & Pickard 1964: 840–842, 1966: 955–957, 1967; Thatcher, R. C. et al. 1980; Thompson, W. A. & Moser 1986; Triplehorn 1970; Turnbow 1980; Turnbow & Franklin 1979, 1982; Turnbow, Franklin, & Nagel 1978; Van Sambeek 1978; Verrall 1941: 552; Vite & Crozier 1968; Vite & Renwick 1968; Vite & Williamson 1970: 233–239; Wagner, Flamm, & Coulson 1985; Wagner, T. L. et al. 1981, 1982, 1984a, 1984b; Waters 1985b; Webb 1906b: 20, 1945: 70; Webb & Franklin 1978; Webber & Gibbs 1989; Welbourn 1983: 115; White, J. D. 1981; White, R. E. & Franklin 1976; Whitney 1971: 1502; Williamson, D. L. 1971a, 1971b; Williamson, D. L. & Vite 1971; Woodring 1966b: 86, 1966c: 115; Woodring & Moser 1970, 1975; Wright 1935: 536; Younan 1979. (**hb**) Alvarado 1939a; Anderson, R. F. 1948, 1960: 216, 1961; Andryszak et al. 1982; Anonymous 1971w, 1971y, 1971ae, 1971ee, 1975u, 1977e, 1977w, 1979a, 1981c, 1981t, 1985k: 47; Ascencio 1979; Baker, W. L. 1972: 240; Barras & Hodges 1969, 1974; Barras & Perry 1972; Beal, Bennett, & Ketcham 1964; Beal & Massey 1945, 1964; Beeson 1918: 114–124; Belanger 1981a; Belanger & Wiseman 1979; Bennett, W. H. 1955, 1956a, 1960b, 1966b; Bennett, W. H. & Ciesla 1971; Bennett, W. H. & Kite 1970; Bennett, W. H. & Ostmark 1972; Berryman 1969a, 1974: 583, 1988; Billings 1979; Billings & Kibbe 1978; Blackman 1922b: 57–59, 1950; Bongberg 1959a; Borden 1983; Bridges, Thoeny, & Tiarks 1988a, 1988b; Browne 1968: 224; Burkhart & Daniels 1980; Chamberlin 1939: 165–167; Chittenden 1897b, 1899a; Ciesla 1966, 1969; Clark & Osgood 1964c, 1966: 305–310; Clarke, A. L., Webb, & Franklin 1979; Clausen 1978: 294; Coleman 1974, 1976; Cook & Hain 1985a, 1989; Cooper & Stephen 1978; Coster & Gara 1968; Coster, Geer, & Johnson 1981; Coster, Hicks, & Watterston 1978; Coster & Johnson 1979a, 1979b; Coster & Vite 1972; Coster et al. 1977b; Coulson 1974, 1977, 1979, 1980b, 1984b; Coulson & Witter 1984: 520; Coulson et al 1975, 1976a, 1976b, 1976c, 1977, 1978, 1979, 1980a, 1985, 1989; DeMars & Hain 1980; Dillon & Dillon 1961: 808; Dixon & Osgood 1961; Dixon & Payne 1979a; Doane et al. 1936; Drooz 1985: 343; Eikenbary, Arnold, & Pinkston 1974; Elmagraby et al. 1986; Essig 1926: 513, 1958: 514; Fargo, Wagner, & Coulson 1985; Fargo et al. 1978, 1979, 1982; Fatzinger & Dixon 1965; Feldman, Curry, & Coulson 1980, 1981; Feldman et al. 1981; Felt 1926: 252, 1930a: 241, 252; Felt & Rankin 1932: 405; Flamm & Coulson 1988; Flamm, Coulson, & Payne 1988; Florence, Johnson, & Coster 1982; Foltz 1976; Foltz et al. 1976b; Frank 1974; Franklin 1970b; Franklin, R. H. 1967; Fronk 1947: 7; Furniss, R. L. & Carolin 1977: 351; Gagne et al. 1980, 1981, 1982; Gara 1967; Gara & Coster 1968; Geer, Coster, & Johnson 1981; Geiler 1975; Gold, Mawby, & Hain 1980b; Goldhammer 1988; Goldman & Frankin 1977; Gonzales 1988; Goyer & Finger 1980; Graham 1939b, 1952; Gunter 1957; Hain 1980; Hain et al. 1978; Ham & Hertel 1984; Happ, Happ, & Barras 1971; Hedden & Billings 1979; Hedden & Reed 1980; Hicks et al. 1980a; Hicks,R. R., Coster, & Watterston 1979; Hines, G. S. 1979b; Hines, G. S., Stephen, & Taha 1980; Hines, G. S., Taha, & Stephen 1980; Hodges & Thatcher 1976; Hoffmann & St. George 1949: 70; Hopkins 1894g, 1899a: 343, 1899c: 245, 290, 394, 448, 1901b: 8, 1903: 270–275, 1904a: 41, 44, 46, 1909a: 90–95; Hyland 1971; Hynum 1980; Johnson, P. C. & Coster 1980; Kalkstein 1976; Ketchum 1964b; Kinn 1981, 1986b; Kinn & Witcosky 1978; Kowal 1960c; Kowal & Ebel 1971; Kozikowsky 1913: 346, 347; Kroll & Reeves 1978; Lara,R. R. 1966; Lashomb & Nebeker 1979; Lewis 1973; Lorio & Hodges 1977; Lugger 1899a: 315; MacDonald et al. 1989; Marler & Barras 1978a; Mawby & Gold 1984a, 1984b; Mawby, Hain, & Doggett 1989; Mayyasi et al. 1976; McClelland & Hain 1979; Metcalf & Flint 1951: 797; Michaels 1984; Mizell & Nebeker 1978, 1979a, 1979b; Moore, G. E. 1978, 1980; Morris, C. L. & Swain 1978; Morstatt 1924: 40; Moser, J. C. 1976a, 1983; Moser, J. C. & Browne 1978; Moser, J. C. & Dell 1979; Mott, Thomas, & Namkoong 1977, 1978; Namkoong 1979; Nebeker 1985; Nebeker, Hackney, & Hocking 1981; Nebeker et al. 1978b; Orr, W. W. & Rodriguez 1967; Osgood & Clark 1963; Page, R. H. & Millsaps

1941; Paine, Cates, & Stephens 1988; Paine, Stephen, & Cates 1988a; Paine, Stephen, & Taha 1984; Palmer & Coster 1968; Payne 1980a; Paz 1975; Pickard 1965; Pierce 1907: 294; Plumb 1958: 9; Pope, D. N. et al. 1980; Price, T. S. & Godbee 1974; Pulley, Flamm, & Coulson 1988; Pulley et al. 1977; Reamer 1964; Reeve, Coster, & Johnson 1980; Reid 1957d: 445; Richerson, B. A. 1978; Richerson, J. V., McCarty, & Payne 1980; Richerson, J. V. & Payne 1979; Robertson, R. L. & Whitehead 1968a; Rodriguez, L. 1962; Rose-Chaffin 1967b; Rose-Chaffin, Genel, & Krogstad 1966; Ryan, G. W. et al. 1980; Sambeek & Bridges 1980, 1981; Sambeek & Kile 1981; Schowalter et al. 1981; Skelly et al. 1988; Smith, R. K. 1962: 1–168, 1962b; St. George 1929b: 1; Stein & Coster 1977; Stephen & Kinn 1980; Stephen, Lih, & Wallis 1989; Stephen & Taha 1976; Stephen et al. 1988a; Stevens, Brewer, & Leatherman 1982: 22; Strong 1938: 17; Struble 1937d: 9; Taha & Stephen 1981; Taha, Stephen, & Motamedi 1980; Thatcher, R. C. 1960, 1967: 599; Thatcher, R. C. & Barry 1982; Thatcher, R. C. & Conner 1985; Thatcher, R. C., Coster, & Payne 1978; Thatcher, R. C. & Pickard 1967; Thatcher, R. C. et al. 1980, 1982; Thatcher, T. O. 1961; Thompson & Moser 1986; Turnbow & Franklin 1982; Van Sambeek & Kile 1981; Vite, Huges, & Renwick 1976; Wagner, Flamm, & Coulson 1985; Wagner, T. L. et al. 1979, 1980, 1981, 1982, 1984a; Waters 1985b; Watterson, Payne, & Richerson 1982; Webb 1906b: 20; Webb & Franklin 1978; White, R. E. 1983: 329; Williams, I. L. 1980; Wood, S. L. 1963: 39, 1982b: 159; Yates, H. O. 1972b; Younan 1979; Yu & Tsao 1967: 95. (**ds**) Acciavatti & Walters 1977; Acciavatti & Weiss 1974; Anderson, R. F. 1960: 216; Anderson, R. L. & Barry 1980: 43; Anonymous 1958a: 4, 7, 1963j, 1963y, 1964e, 1964h, 1964u, 1965b, 1965r, 1966f, 1966h, 1966u, 1967f, 1967t, 1968g, 1968p, 1969e, 1969m, 1970h, 1972t, 1973b, 1973j, 1973p, 1973r, 1973y, 1974e, 1975d, 1975t, 1976e, 1977f, 1977g, 1977u: 39, 1977v: 41, 1977x, 1978e, 1978z, 1979a, 1979d; Barras 1973; Barras & Hodges 1969; Beal & Massey 1945; Bennett 1954; Bennett & Ciesla 1971; Berryman 1988; Blackman 1922b: 57–59, 1950; Blatchley & Leng 1916: 653; Bongberg 1956a, 1957; Bongberg & Bennett 1960: 1; Browne 1968b: 224; Camors & Payne 1973; Chamberlin 1925, 1939: 165–167; Chittenden 1897b, 1899a, 1903; Choo, Woo, & Kim 1981: 202; Clark 1974; Cooper & Stephen 1978; Coster & Johnson 1979; Coster & Ragenovich 1976; Coster et al. 1977; Coulson, R. N. et al. 1974, 1976, 1976a, 1977, 1978, 1979b; Craighead & Middleton 1930; Currie 1905; Dixon & Osgood 1961; Drooz 1985: 343; Essig 1926: 513, 1958: 514; Fargo et al. 1978, 1979; Felt 1926: 252, 1930a: 241, 252; Felt & Rankin 1932: 405; Ferrer 1942; Flamm, Coulson, & Payne 1988; Foltz et al. 1976b; Furniss, R. L. & Carolin 1977: 351; Gagne et al. 1980, 1981; Goyer & Finger 1978; Gredley et al. 1922; Halperin 1976a; Hendricks & Enkerlin 1979; Henshaw 1885: 147; Hodges & Pickard 1971; Hodges et al. 1979; Hoffmann & St. George 1949: 70; Hopkins 1893a: 143–144, 148, 1903a, 1909a: 90–95, 1909b: 56–72; Hynum 1980; Kalksten 1976; Karpinski 1932b: 55, 1933: 52–56; Keen 1949b: 427; Kellogg 1951: 796; King 1972; Kirk 1969, 1970; Kleine 1912b: 176, 1914b: 383, 1934a: 132; Knull 1934: 716–718; Kowal 1960c; Kudon & Berisford 1981; Lanier, Hendrichs, & Flores 1988a, 1988b; Lashomb & Nebeker 1979; Linit & Stephen 1983; Marchant & Borden 1976; Mayyasi et al. 1976; McClelland, Hain, & Mawby 1979; Mendel 1986b; Merkel 1957: 119; Merkel & Kowal 1956: 2; Mizell & Nebeker 1978; Moore 1972; Mumford 1966: 20; Nagel 1959: 1; Nebeker, Hackney, & Hocking 1981; Nebeker et al. 1978b; Orr, W. W. & Rodriguez 1967; Perry 1951: 159; Perusquia 1978; Pulley et al. 1977; Reeve, Coster, & Johnson 1980; Richerson & Payne 1979; Roton 1978; Rudinsky 1973a; Rudinsky et al. 1974: 91; Sambeek & Bridges 1980, 1981; Schedl 1940a: 339, 1977: 42, 1978e: 37; Schuder 1969: 79; Smith, R. K. 1962; Stein & Coster 1977; Stephen & Taha 1976; Swaine 1909: 96–97; Thatcher, T. O. 1961; Thomas, J. B. 1966; Turnbow & Franklin 1980; Upton 1945: 100; Wagner et al. 1979, 1982; Webb & Franklin 1978; Wilkenson 1975; Wood, S. L. 1963: 39, 1982b: 159. (**tx**) Anderson, R. F. 1960: 216; Beal & Massey 1945: 82–85; Benoit 1985: 89; Blackman 1922b: 57–59; Blatchley & Leng 1916: 653; Chamberlin 1939: 165–167; Dietz 1890; Dillon & Dillon 1961: 808; Dixon & Osgood 1961; Eikenbary, Arnold, & Pinkston 1974; Gemminger & Harold 1872: 2671; Hagedorn 1910a: 60; Hopkins 1902e, 1905b: 80, 1909a: 90–95, 1915c: 203–204; Jacques 1951: 350; Kowal 1961b: 10; Lanier, Hendrichs, & Flores 1988a, 1988b; LeConte 1868: 173, 1876: 384, 386; Muesebeck 1942: 95, 1950: 131; Perusquia 1978; Smith, R. K. 1962: 5; Swaine 1909: 86; Thomas, J. B. 1965c, 1967; Vite, Coster, & Cameron 1978; Wood, S. L. 1963: 5, 11, 13, 39, 1982b: 159; Yates, H. O. 1972b; Zimmermann 1868: 149. (**ms**) Allen, D. C., Cleland, & Kocaoglu 1982; Amman & Rasmussen 1969; Anderson, N. H. & Bremer 1967; Anderson, R. F. 1966; Anderson, R. F. et al. 1980; Anonymous 1968c, 1971w, 1973k, 1975n, 1975u, 1977m, 1978ae, 1980r, 1980z, 1981d, 1981s, 1985k: 47, 1987, 1988f, 1988k; Barras 1972; Beal 1927a, 1948, 1953, 1956, 1961: 81; Beal et al. 1955; Belanger et al. 1979; Billings 1984a; Billings & Hynum 1980; Billings, Roberts, & Payne 1981; Bongberg 1956b, 1959a; Branham et al. 1985; Bridges 1979; Bridges & Guinn 1980; Bridges, Thoeny, & Tiarks 1988a, 1988b; Buhyoff & Leuschner 1978; Buhyoff, Leuschner, & Arndt 1980; Buhyoff & Riesenman 1979; Chamberlin

1931; Chararas 1971a: 853; Ciesla, Bell, & Curlin 1967; Clark, E. W. 1964, 1965a, 1965b; Clark, E. W. & Osgood 1964a, 1964c, 1966; Cleland et al. 1982; Clerke & Mahan 1978; Coulson 1984b; Coulson et al. 1972, 1975a, 1975b; Coyne 1954b; Coyne et al. 1954; Craighead 1942b; Craighead & St. George 1930; D'Silva & Peck 1972; Daniels et al. 1979; Eckstein 1900c; Fatzinger & Dixon 1965; Feldman, Curry, & Coulson 1980; Feldman et al. 1985; Ferguson 1977; Folweiler 1951; Ford 1951; Franklin, R. H. 1967; Gammill, Fitzpatrick, & Neel 1978; Gara 1966a, 1966b, 1967a; Gold, Mawby, & Hain 1980a, 1980b; Goyer et al. 1980; Green et al. 1980; Hain 1980; Hedden & Reed 1980; Heller 1955; Heller et al. 1959: 595; Hertel 1980; Hines, G. S. 1979b; Hines, G. S., Stephen, & Taha 1980; Hines, G. S., Tara, & Stephen 1980; Hitchings & Levi 1981; Holst 1937; Hopkins 1910a; Hurst, G. D. & Matteson 1986; Hyche 1976; Hynum 1980; Johnson, Philip C. 1977; Johnson, Philip C. & Coster 1978; Kerr 1957: 36–38; Ketcham & Shea 1977, 1982; Kinn 1981; Kirby 1954: 5; Knox & Schroeder 1963; Kowal 1957b: 19; Kroll & Reeves 1978; Kucera 1969; Kucera & Nachod 1972; Kulhavy & Johnson 1983; Lassen 1975; Lee 1954a: 5, 1954b: 767; Lee & Coyne 1955: 4; Leuschener et al. 1977; Levi 1981, 1982; Levi & Dietrich 1976; Lewis, Payne, & Coulson 1973; Linit & Stephen 1978; Lintner 1894: 292; Look 1976b; Lorio & Branham 1988; Lorio & Zarnoch 1984; Magnus & Roy 1978; Marler & Barras 1978a; Mask 1982; Mason, G. N. 1979; Mathews 1978; Mawby 1980a, 1980b; Mawby & Gold 1984a, 1984b; Mayyasi et al. 1976; Meister & Scharf 1983; Michaels, Sappington, & Stenger 1986; Michaels, Stenger, & Sappington 1986; Miller, M. C. 1983; Moore, G. E. & Taylor 1976; Moore, G. E. & Thatcher 1973b; Mori 1975b, 1976b; Moser, J. C. & Branham 1988; Moser, J. C. & Browne 1978; Mott & Thomas 1977; Mott, Thomas, & Namkoong 1977; Mundy et al. 1971; Nance, Polmer, & Keith 1975; Nebeker 1981; Nebeker & Mizell 1980; Nebeker et al. 1978; Osgood 1957: 1; Ostmark & Bennett 1969a, 1969b; Paine 1985a; Pase & Fagala 1980; Payne 1973; Payne et al. 1976, 1978; Plumb 1958: 9; Pulley et al. 1976; Redlich et al. 1987; Reed, Burkhart, & Leuschner 1979; Reed, Hedden, & Daniels 1982; Reed et al. 1980, 1981; Rippen 1982; Robinson, J. V. 1981; Ryan, G. W. et al. 1980; Rykiel et al. 1984; Schreuder et al. 1980; Schroeder 1965; Shamoun & Levi 1985; Silverstein 1970b; Sinclair, S. A. 1980; Sinclair, S. A. & Ifju 1977, 1979; Sinclair, S. A., Ifju, & Heikkenen 1977b; Sinclair, S. A., McLain, & Ifju 1979a, 1979b; Skelley et al. 1988; Smith, J. L. & Mead 1981; Snyder et al. 1923: 414; Stephen & Paine 1985a; Stewart, T. E. et al. 1977; Stimal & Cambell 1980; Swaine 1925c: 262; Taylor, J. F. & Moore 1978; Thalenhorst 1972: 36; Thatcher, R. C. 1957: 13, 1974, 1977, 1980a, 1982, 1984; Thatcher, R. C. & Wilson 1982; Thatcher, R. C. et al. 1981; Thomas, H. A. 1981; Tomescu & Clark 1976; Turnbow 1982; Turnbow et al. 1983; Uhler 1980; Valentine, H. T. 1981; Vite 1968; Vite & Coster 1973; Wagner, T. L. et al. 1984a; Walker, L. C. 1980; Walters, F. C. & Leuschner 1979; Warren 1985; Waters, W. E. 1973; Weber, R. & Schurig 1984; Whitesell & Buchanan 1986; Wiseman 1979; Woodward & Biesbrock 1976; Younan 1979; Zarnoch, Lorio, & Sommers 1984.

arizonicus Hopkins 1909a: 95. Holotype ♀; Williams, Arizona [USA]; USNM, Washington. Synonymy: Wood 1963: 41, 1973c: 188.
References: (**ay**) Hopkins 1909a: 95–97. (**cn**) Bongberg 1956a; Doane et al. 1936; Essig 1926: 512, 1958: 513; Felt 1924: 251–254, 1926: 249, 254, 1930a: 249, 254; Hopkins 1902e, 1904a: 42, 44, 46, 1909b: 72–73; Keen 1938: 102, 1952c: 135. (**ec**) Hopkins 1909b: 72–73; Keen 1938: 102; Swaine 1925c: 263. (**hb**) Chamberlin 1939: 158; Doane et al. 1936; Essig 1926: 512, 1958: 513; Felt 1926: 249, 254, 1930a: 249, 254; Hopkins 1904a: 42, 44, 46, 1909a: 95–97, 1909b: 70; Keen 1938: 102, 1952c: 135. (**ds**) Bongberg 1956a; Chamberlin 1925, 1939: 158; Essig 1926: 512, 1958: 513; Felt 1926: 249, 254, 1930a: 249, 254; Hagedorn 1910d: 20; Hopkins 1909a: 95–97, 1909b: 72–73; Keen 1929a: 17, 1938: 102, 1952c: 135; Kleine 1912b: 176, 1914b: 386, 1934a: 132; Leng 1920: 338. (**tx**) Chamberlin 1939: 158; Hagedorn 1910a: 60; Hopkins 1902e, 1909a: 95–97; Keen 1929a: 17; Muesebeck 1942: 95, 1950: 131; Wood, S. L. 1963: 41, 1973c: 188. (**ms**) Swaine 1925c: 263.

***jeffreyi* Hopkins** 1909a: 114. Holotype ♀; Little Yosemite, California [USA]; USNM, Washington.
Figures: Wood 1982b: 174.
Distribution: North America (Baja California Norte in Mexico/ California, S Oregon in USA).
Hosts: *Pinus jeffreyi*, accidental in *P. ponderosa*.
References: (**ay**) Higby 1981; Higby & Stock 1982; Hopkins 1909a: 114–116; Lyon 1958: 583; Smith, R. H. 1965a; Stock, M. W., Amman, & Higby 1984. (**bv**) Barr, B. A. 1969: 640; Hawksworth 1985; Inscoe 1982; Klassen, Ridgway, & Inscoe 1982; Lanier & Wood 1968: 527; McPherson, Wilson, & Stehr 1970b: 1018; Pitman 1969a; Renwick & Pitman 1979; Silverstein & Young 1976: 20; Smith, R. H. 1961b: 359–365, 1963: 827–831, 1969: 1–13, 1971: 1–7. (**cn**) Anderson, R. F. 1960: 221; Anonymous 1940i: 580, 1941i: 812, 1955h: 49, 1955j: 3, 1958a: 3, 6, 1960i, 1960j: 1, 10, 1960q, 1960r, 1961e, 1961h, 1961i, 1961s, 1962h, 1962i, 1963k, 1963y, 1964i, 1964u, 1965c, 1966i, 1967h, 1968h, 1969e, 1969f, 1971i, 1972h, 1973c, 1974f, 1975g, 1976f, 1976g, 1977h, 1978a, 1978b: 35, 1978f, 1979g, 1980a, 1980m: 30,

1981g, 1982b, 1982c, 1983d, 1984d, 1986b: 5, 1987e: 3; Bongberg 1956a, 1957; Burke 1919: 123; Craighead 1927: 8, 1930: 5; Craighead & Middleton 1930; Craighead et al. 1931: 1016; DeNitto 1984; DeNitto & Pierce 1981, 1983; Downing 1954; Eaton 1956: 1–7, 1959: 1–33; Essig 1924: 256, 1926: 513, 1958: 514; Felt 1924: 256, 1926: 248, 256, 1930a: 248, 256; Gentry et al. 1980: 806; Hall, R. C. 1958b, 1961; Hamell 1980: 780; Hawthorne 1962, 1963, 1964; Helzner & Moyer 1979; Hofacker & Loomis 1982: 15, 1983: 17; Hofacker, Loomis, & Gilstrap 1988: 39; Hofacker, Loomis, & Tucker 1984: 31, 1987; Hofacker, Loomis, & Worral 1989; Hoffman et al. 1988: 7; Hopkins 1909b: 101–103, 1909d: 574, 1912b: 4–5; Hopping 1922: 130, 1925b; Johnson, Philip C. 1940: 773–776, 1949; Keen 1929: 37, 1938: 107–109, 1949b: 427, 1952c: 140; Knapp et al. 1989: 6; Loomis, Hofacker, & Tucker 1985: 47, 1986; McPherson, Wilson, & Stehr 1970b: 1018; Miller, J. M. 1929: 997; Moyer 1977; Neal 1979: 805; Ollieu, Stipe, & Hoffman 1980: 26; Patterson 1923: 9, 1945: 14; Pierce, J. R. 1971: 12; Pierce, J. R. & Srago 1973: 16; Pierce, J. R., Srago, & Fujii 1977: 14; Pierce, J. R., Wood, & Fujii 1977: 15; Pronin 1952: 186; Pronos, Dale, & Borrecco 1981; Rosecrans 1947: 9; Ryker & Rudinsky 1979: 211; Salman 1933a: 134, 1938: 119–123; Schuder 1969: 78; Schultz & Allison 1981, 1982; Schultz, DeNitto, & Allison 1981; Schultz & Pronos 1982; Seal 1964; Smith, R. H. 1961c, 1971a, 1982, 1983b; Smith, R. H. & Roettgering 1982; Smith, R. H. et al. 1981; Stevens 1959a: 2; Swartz & Dahlsten 1980; Teillon et al. 1973; Thier & Hoffman 1983; Tkacz 1986; Vite & Wood 1961: 68; Vogler & Schultz 1985; Wenz 1984; Wenz & DeNitto 1983; Wenz & Smith 1983. (**ec**) Burke 1919: 123; Callaham & Shifrine 1960: 146; Craighead et al. 1927; Eaton 1959; Furniss, R. L. & Carolin 1977: 352; Hawksworth 1985; Hopkins 1909b: 101–103; Keen 1938: 107; Kinn 1971; Lindquist 1970b, 1971; Mathre 1964: 353–388, 1966; Miller 1929: 997; Shifrine & Phaff 1956: 45; Smith, R. H. 1965a; Swaine 1925c: 262; Thompson, W. R. 1943: 39. (**hb**) Anderson, R. F. 1960: 221; Bongberg 1959a; Bright & Stark 1973: 32; Chamberlin 1939: 159, 1958: 72–73; Eaton 1956, 1959; Essig 1926: 513, 1958: 514; Felt 1926: 248, 256, 1930a: 248, 256; Furniss, R. L. & Carolin 1977: 352; Higby 1981; Higby & Stock 1982; Hopkins 1909a: 114–116; Keen 1929: 37, 1938: 107, 1952c: 140; Ryker & Rudinsky 1979: 211; Smith, R. H. 1971a; Swartz & Dahlsten 1980; Wood, S. L. 1982b: 177. (**ds**) Anderson, R. F. 1960: 221; Anonymous 1958a: 3, 6, 1962i, 1963k, 1963y, 1964u, 1969e, 1969f, 1973c, 1974f, 1975g, 1976f, 1976g, 1977h, 1978a, 1978b: 35, 1978f, 1979g, 1980: 30, 1980a, 1981g, 1982b, 1982c, 1983d, 1984d; Bongberg 1956a, 1957; Bonberg & Bennett 1960: 1; Bright & Stark 1973: 32; Chamberlin 1917, 1925, 1939: 159, 1958: 72–73; Craighead & Middleton 1930; Downing 1963: 8; Eaton 1956; Essig 1926: 513, 1958: 514; Felt 1926: 248, 256, 1930a: 248, 256; Furniss, R. L. & Carolin 1977: 352; Hagedorn 1910d: 20; Hall & Eaton 1960; Hopkins 1909a: 114–116, 1909b: 101–103, 1922; Keen 1929: 37, 1929a: 17, 1938: 107, 1949a: 93, 1952c: 140; Kleine 1912b: 176, 1914b: 390, 1934a: 132; Lange 1937: 172; Lanier & Wood 1968: 527; Leng 1920: 338; McPherson, Wilson, & Stehr 1970b: 1018; Renwick & Pitman 1979; Rosecrans 1947: 9; Salman 1933a: 134; Schuder 1969: 78; Smith, R. H. 1961b, 1971a; Wood, S. L. 1982b: 177. (**tx**) Anderson, R. F. 1960: 221; Chamberlin 1939: 159, 1958: 72–73; Hagedorn 1910a: 60; Hopkins 1909a: 114, 116; Keen 1929a: 17; Muesebeck 1942: 95, 1950: 131; Renwick & Pitman 1979; Ryker & Rudinsky 1979: 211; Wood, S. L. 1963: 57, 1982b: 177. (**ms**) Bongberg 1959a; Swaine 1925c: 262; Swartz & Dahlsten 1980.

***mexicanus* Hopkins** 1905b: 80. Lectotype ♀; Sacramento, Amecameca, Mexico, Mexico; USNM, Washington, designated by Wood 1982b: 163.

Figures: Atkinson et al. 1986: 14; Schwerdtferger 1957d: 54–55 (galleries).

Distribution: North America (Guatemala/ Honduras/ Chiapas, Chihuahua, Distrito Federal, Durango, Hidalgo, Mexico, Michoacan, Morelos, Oaxaca, Puebla, Tlaxcala, Zacatecas in Mexico).

Hosts: *Pinus ayacahuite, P. lawsoni, P. leiophylla, P. montezuma, P. oocarpa, P. ponderosa, P. pseudostrobus, P. rudis, P. teocote, P. tenuifolia.*

References: (**ay**) Francke-Grosmann 1966c; Hopkins 1909a: 97–99; Lanier, Hendrichs, & Flores 1988a, 1988b. (**bv**) Chararas et al. 1982: 1095; Payne & Wood 1981: 49. (**cn**) Alatorre Rosas 1978; Ascencio Cerda & Serrato Barajas 1984; Becker, G. 1951: 186–209, 1952a: 682–687; Burgos, Islas, & Villa 1975a, 1975b; Felt 1926: 248, 254, 1930: 248, 254; Hopkins 1909b: 74–75; Islas-Salas 1974; Johnston 1939; Martinez, F. B., Islas, & Villa 1975; Ordish 1966; Payne & Wood 1981: 492; Perry 1951: 159; Ramirez 1921: 662–663; Schwerdtfeger 1956b: 47, 1957b: 585, 1959a: 54; Torrent & Romanyk 1967: 81, 1968. (**ec**) Becker, G. 1952b, 1954, 1955; Flores & Enkerlin 1978; Francke-Grosmann 1966c; Hopkins 1909b: 74–75; Lindquist 1971; Muesebeck 1942: 95, 1950: 131; Perusquia 1982; Swaine 1925c: 263. (**hb**) Atkinson et al. 1986: 16; Beal, Bennett, & Ketcham 1964; Becker, G. 1951: 186–209, 1952a: 682–687, 1954: 23, 1955; Burgos & Saucedo 1983: 55; Burgos, Islas, & Villa 1975a, 1975b; Felt 1926: 248, 254, 1930: 249, 254; Hopkins 1909a: 97–99; Islas-Salas 1974; Martinez, F. B., Islas, & Villa 1975; Ordish 1966: 121; Perry 1955: 1; Schwerdtfeger 1956b: 47, 1959a: 54; Wood, S. L. 1982b: 163. (**ds**) Atkinson & Equihua 1985a: 72, 1985b: 229, 1988: 88; Atkinson et al.

1986: 16; Bates 1832; Becker, G. 1951, 1952a; Blackwelder 1947; Burgos & Saucedo 1983: 55; DeLeon 1938; Felt 1926: 248, 254, 1930a: 249, 254; Ferrer 1942; Hagedorn 1910d: 20; Hendricks & Enkerlin 1979; Hopkins 1909a: 97–99, 1909b: 74–75; Kleine 1912b: 176, 1914b: 348, 1934a: 132; Lanier, Hendrichs, & Flores 1988a, 1988b; Perry 1951: 159; Perusquia 1978; Schedl 1963b: 157; Wood, S. L. 1963: 39, 1974d: 288, 1982b: 163. (**tx**) Atkinson et al. 1986: 14; DeLeon 1938; Hagedorn 1910a: 60; Hopkins 1905b: 80, 1909a: 97–99; Lanier, Hendrichs, & Flores 1988a, 1988b; Muskus, A. 1984: 44; Perusquia 1978; Schedl 1940a: 339, 1952e: 122, 1955g: 10; Wood, S. L. 1963: 39, 1974d: 288, 1982b: 163. (**ms**) Swaine 1925c: 263.

***micans* (Kugelann)** 1794: 523 (*Bostrichus*). Syntypes, sex?; Prussia; not located.

Figures: Bakke 1956b: 88, Balachowsky 1949a: 26, 104, Bevan 1987: 13, Grune 1979: 58, Pfeffer 1989a:pl. 2, Postner 1974: 401 (adult), Wood 1963: 9; Yin, Huang, & Li 1984: 57.

Distribution: Asia (Heilongjiang, Liaoning, Qinhai, Sichuan in China/ Turkey/ Sakhalin Island in E USSR), Europe (Austria/ Belgium/ Bulgaria/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Hungary/ Italy/ Luxemburg/ Netherlands/ Norway/ Poland/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia).

Hosts: *Picea excelsa,* uncommon in *Abies* spp., *Larix* sp., *Pinus* spp.

Notes: (3) This is a biologically and anatomically distinct geographical replacement of *D. punctatus* LeConte.

References: (**ay**) Battisti 1985; Bugnion 1887b; Cerezke 1964: 480; Chararas & Courtois 1976; Chikoidze 1977; Escherich 1923b: 431, 479, 557; Feytaud 1950a; Francke-Grosmann 1949a: 219–225, 1951: 143, 1959; Fuchs 1912a; Hansen et al. 1981; Hopkins 1909a: 143–147; Imhoff 1856: 228; Leisewitz 1906: 52; Lindemann 1879: 53–87; Melnikova 1962, 1965, 1967; Nunberg 1928a: 140; Nusslin 1912c: 279; Schwerdtfeger 1926: 90; Stock, M. W., Gregoire, & Furniss 1987; Tommeras & Mustaparta 1985; Tommeras, Mustaparta, & Gregoire 1985; Tskhadaya 1983; Verhoeff 1896: 111; Wichmann 1912a: 9. (**bv**) Barr, B. A. 1969: 640; Berryman 1988; Bevan & King 1983; Brown, J. M. B. & Bevan 1966; Carle, Granet, & Perrot 1979b; Cerezke 1964: 498; Chararas & Deschamps 1962; Chararas et al. 1982: 1094; Fu, Wu, & Ning 1984; Gregoire 1981, 1985, 1988; Grune 1979: 59; Kevdina 1897: 108; Kobakhidze et al. 1969; Kozlowski 1969: 121; Krivosheina & Aksentev 1984; Lemperiere & Bailley 1986: 18; Meixner 1937: 1215; Nuorteva 1956c: 94; Prell 1930c: 638, 1931: 364; Reid 1958d: 505; Sheperd 1965: 212; Simionescu 1978; Tondeur 1976; Tommeras 1989; Tommeras, Mustaparta, & Gregoire 1985; Vasechko 1978a; Vite 1980; Voolma 1978; Vouland & Carle 1977; Wichmann 1912a: 9, 1967. (**cn**) Acatay 1968: 18–36, 1971; Anonymous 1901e: 564, 1978i, 1982f, 1982g, 1983a, 1985a, 1985c, 1985e, 1986a, 1986c, 1986d, 1987a, 1987c, 1988a, 1988g, 1988h, 1988k, 1989a; Antoine 1935: 264; Ass & Funtikow 1941; Baer 1913: 659–671; Barbey 1925: 74; Barlow 1966; Battisti 1985; Battisti, Menardi, & Sala 1986; Bejer-Petersen 1958, 1959a, 1976, 1978, 1981, 1989; Bergmuller 1904; Berryman 1988; Besceli 1967: 19; Besceli & Ekici 1975; Bevan 1964b, 1982, 1983, 1987: 1222; Bevan & King 1983; Blatchford 1983: 29; Brandt 1970: 323; Brichet 1900a; Brichet et al. 1902, 1903; Brown, J. M. B. & Bevan 1966: 1; C. J. Q. 1905: 183; Carle 1975b; Carle, Granet, & Perrot 1979b; Chararas 1957e, 1961b: 78, 1961c: 103, 1978; Coulson, J. R. 1981: 9; Crooke 1962: 1–7; Dominik 1966a: 175–184; Doom 1965: 420–423; Du Merle 1988; Eckstein 1903, 1915, 1917, 1926: 575, 1930b; Ehnstrom et al. 1974; Eidmann 1925: 5–8; Elton 1947, 1949a, 1949b, 1950: 759–764, 1951; Elton & Blankwaardt 1953; Elton & Voute 1950; Escherich 1912a, 1929, 1936, 1959; Evans, H. F. 1985, 1989; Evans, H. F., King, & Wainhouse 1985; Everaerts, Gregoire, & Merlin 1988; Feytaud 1950a; Fleischer 1877a; Florov 1949: 21; Francke-Grosmann 1954a: 108–117; Francke-Grosmann & Ruhm 1954: 48–53; Friedrich 1951: 37–38; Gabeev & Gnat 1986; Gabler 1955; Galoux 1947: 12, 1948e; Gaprindashvili et al. 1967: 167–172, 1968: 735–740; Gluck 1876; Godwin 1956: 119–123; Gohrn et al. 1953: 1–5, 1954; Gornostaev 1917: 308–315; Gradojevic 1933: 789–790; Grandi 1951; Gregoire 1988, 1989; Gregoire & Merlin 1985; Gregoire, Merlin, & Pasteels 1984; Gregoire et al. 1985a, 1985b; Guse 1885; Gyorfi 1948: 32–44; Haarlov & Petersen 1952: 43–91; Haenel 1914: 214–222; Hartig 1877: 195; Henriksen 1951, 1958: 1–371, 1961: 175–232; Herlein 1878; Hess 1898: 373; Hess & Beck 1914: 259, 1927: 316; Hierholzer 1951a; Hopkins 1909b: 141–146; Hrubik 1973; Husson 1955: 534; Husson & Stauder 1954: 355–359, 534–538; Imnadze 1984; Jamnicky 1959: 156–163, 1959a; Jazentkovsky 1922: 7–9; Joly 1976; Judeich & Nitsche 1895: 447, 458; Juutinen 1953: 35, 1955: 1–112, 1960: 20; Kalandra & Pfeffer 1940; Kandadze et al. 1965: 397; Kangas 1939, 1947: 1–192, 1950b: 146, 1952: 155, 1958a: 192, 1958d: 164, 1966b; Kauschinger 1893: 150; Keller 1903b: 49; Kholodkovskii 1912: 278, 300; King & Evans 1985; Kneiff 1939: 170; Kobakhidze 1960: 1851, 1964: 309, 1965: 323–330, 1967: 65–68, 1968: 211–216, 1969: 57–59; Kobakhidze, Tvardze, & Kraveishlili 1970; Kobakhidze et al. 1967: 401–403, 431–434, 1968: 116–118, 227–230; Koch 1913: 10, 95; Komarek et al. 1931: 1–256; Koppen 1882: 246; Kovacevic 1952: 69; Kozikowsky 1929: 254; Kraemer 1953: 463–512; Kruseu & Masnima 1968:

24–27; Kurashvili et al. 1964: 671–678; Kurenzov 1935c: 188, 1950a: 13; Lekander 1955b: 17, 1966; Lekander, M. 1951: 22; Lemperiere & Bailley 1986: 18; Lemperiere et al. 1988; Levieux, Lieutier, & Delplanque 1985a; Lofting 1950: 27; Lohrenz 1907: 41; Loos 1919: 283–288, 1925: 53; Lozovoi 1966: 1–90; Lozovoi & Tropin 1965, 1967; Luitjes et al. 1954: 118, 1958: 201; Markov 1985; Martinek 1953a: 372; Melikadze et al. 1975; Melnikova 1962: 234–240; Merker 1965: 10–44; Merker & Kleine 1940: 255–261; Metzger 1897: 59; Nechleba 1929: 24–26; Nestertschuk 1930: 173; Nosek 1951: 106, 1952b: 98; Novak, V., Hrozinka, & Stary 1976: 31; Nuorteva 1955c: 1, 1957a: 352; Nusslin 1913: 202, 238; O. B. 1905: 466; Obertreis 1897: 93; Ohnesorge 1955: 280; Palm 1948b: 212–213; Paulian 1943: 324; Petersen 1952: 299–322; Pfeffer 1932: 1–23, 1948a: 800, 1949b: 150, 1950c: 2; Pierce, W. D. 1917: 65; Poeteren 1936: 1–88; Polozenchev & Zolotov 1969: 3–6; Prosoroff 1929: 1–54; Pschorn-Walcher 1966; Quievy 1905: 334; Raskatov 1972; Reisch 1960; Rhumbler 1922: 280, 1927: 292; Rieben 1949: 182; Rodary 1959: 849; Rudinsky 1960a; Rudnev 1966; Rudnev & Khramtsov 1962; Ruhm 1955: 52–55, 1956: 424, 1958: 286; Saalas 1916: 91–95, 110–116, 1949: 341, 351; Schimitschek 1937c: 47, 1955a: 58, 1955c: 77, 1956: 345, 1961a: 154; Schimitschek & Wienke 1963: 219–257; Schmidt 1881: 43; Schonherr 1958b: 88–90; Schouteden 1927: 114; Schulze 1927: 336; Schvester 1986; Schwappach et al. 1929: 186; Schwerdtfeger 1944a: 171, 178, 1950b: 60, 1953c: 209, 1957a: 184; Serez 1979; Severin 1902a: 72–81, 1902b: 145–152, 1908: 239; Shavliashvili 1984; Shavliashvili & Berozashvili 1976; Shavliashvili, Mukhashavria, & Zharkov 1976; Shavliashvili & Zharkov 1985; Sick 1939: 110; Smith 1985; Stoling 1969: 610–627; Sukhovolskii 1981; Supatasvili 1957: 611; Supatasvili, Muhasavrija, & Murusidze 1964; Supatasvili et al. 1964: 68–72, 169–173, 1966: 362; Tamanuki 1933: 1–54; Thalenhorst 1953: 17; Torka 1933: 120–121; Torrent & Romanyk 1967: 81, 1968; Tragardh 1916: 484–486, 1917: 20, 28, 1919: 1–415, 1927c: 72, 1930: 468–480; Trappen 1935: 141; Trofimov 1979; Tubeuf 1933: 193–357; Tubeuf & Habesreiters 1933: 472–476; Tullgren 1916: 104; Tvaradze 1984; Ulrici 1873: 150; Vappula 1965: 152; Voolma 1978, 1980b; Vorontzov 1968; Voute 1947: 3, 1947c: 85; Voute & de Vries Broekman 1965; Wachtl 1901: 381; Wagner 1954: 544; Weber, H. 1926: 574; Whittle & Anderson 1987; Wichmann 1927b: 350; Willkomm 1863: 249; Wolff & Krausse 1922: 77. (**ec**) Alfken 1924; Anonymous 1985b, 1985c, 1988k; Antoine 1935: 264; Ass & Funtikow 1941; Baisier & Gregoire 1988; Baisier et al. 1988; Balazy & Michalski 1960, 1964b; Barbey 1927; Battisti 1985; Battisti, Menardi, & Sala 1986; Bejer-Petersen 1976, 1989; Bernhard 1963: 114; Berryman 1988; Besceli, Varol, & Ekici 1968; Bevan 1983; Bevan & King 1983; Brammanis 1938; Brown, J. M. B. & Bevan 1966; Carle 1975b; Ceianu & Istrate 1976; Chararas 1959a, 1959c, 1960d: 1917–1919; Chararas et al. 1982: 1094; Evans, H. F. 1987; Evans, H. F. & King 1989; Fleischer 1877a; Forsslunds 1941; Francke-Grosmann 1948, 1950a: 773–780, 1954b: 108–117, 1959; Francke-Grosmann & Ruhm 1954: 48–53; Fry 1989: 16; Fuchs 1932; Galoux 1947b, 1947c; Gaprindashvili, Gumberidze, & Kharazishvili 1967; Graham 1956; Gregoire 1977, 1988; Gregoire, Marlin, & Pasteels 1984; Gregoire et al. 1985a, 1989; Gyorfi 1941b, 1948; Haarlov & Bejer-Petersen 1952; Hansen, T. E. et al. 1981; Heqvist 1963; Hirschmann 1960, 1971a, 1971b: 40; Hirschmann & Wisniewski 1982, 1983; Hirschmann & Zimgiebl-Nicol 1961; Hopkins 1909b: 141–146; Hughs & Jackson 1958: 125; Imnadze 1978; Isaev, Khlebopros, & Nedorezov 1980: 195; Izhevskij 1988; Jamnicky 1961b; Kalandadze et al. 1965; Kangas 1939, 1946b: 21, 1952, 1954a: 48, 1954b, 1958a: 192; Kleine 1908c: 183, 1909a: 46, 77, 1944: 70; Knoche 1908b: 204; Kobakhidze 1960: 1851, 1964, 1965: 325, 1967; Kobakhidze & Supatashvili 1971; Kobakhidze, Tvaradze, & Kraveishvili 1970; Kobakhidze et al. 1967, 1968, 1973a, 1973b; Kolomiets 1981; Kolomiets & Bogdanova 1978, 1979a, 1979b; Kraemer 1949: 59; Krushev & Mashnina 1968; Kurashvili et al. 1974; Kurashvili, Chanishvili, & Kakuliya 1964; Kurenzov 1934a: 54; Lemperiere & Bailley 1986: 18; Levieux, Lieutier, & Delplanque 1985a; Lozovoi & Tropin 1965, 1967; Maslov & Nizharadze 1973; Matuashvili et al. 1974; Merlin et al. 1985; Meyer 1934: 612; Muesebeck 1942: 95, 1950: 131; Nechleba 1929a: 25; Nishiguchi 1970; Nosek 1951: 106, 1952b: 98; Nuorteva 1957a: 352, 1971; Nusslin 1927: 292, 300; Palmen 1944: 60, 1946: 194; Perris 1856a: 244; Pfeffer 1923a: 330, 1932a: 6, 1943b: 181, 1949b: 150, 1950c: 2, 1952a: 159, 1957a: 196, 1959: 4; Poinar 1972, 1975: 154; Polozhentsev 1966a; Pomotskaya 1979; Raskatov 1972; Ratzeburg 1869a: 79; Rodary 1959: 849; Ruhm 1956b: 3, 1957a: 246, 1969; Saalas 1917a: 18, 1949: 341, 349, 351; Schedl 1958d: 189; Scheucher 1959: 263; Schimitschek 1930a: 295, 1955a: 58, 1964c: 141; Schwerdtfeger 1944a: 171, 178, 1950b: 60, 1953c: 209, 1957a: 184; Sedlaczek 1935a: 154; Serez 1979; Shavliashvili & Berozashvili 1976; Sitowski 1930: 6; Stefanov 1949a: 97; Sukhovol'skii 1982; Swaine 1925c: 262; Thompson, W. R. 1943: 39; Tondeur & Gregoire 1979; Tvaradze 1984; Vitzthum 1923: 107; Voolma 1978, 1980b, 1986; Weber, L. 1900: 105, 1902: 108; Wiackowski 1957a: 86; Wichmann 1952b: 22, 1954d: 433; Wichmann, H. E. 1967; Woodring & Moser 1970; Zumr 1985b. (**hb**) Acatav 1968; Altum 1876a, 1879c, 1881c: 262, 1889b, 1889c; Bach 1864;

Balachowsky 1963a: 1255; Barbey 1901: 10, 20, 56, 1913, 1925: 74; Bargmann 1906; Battisti, Menard, & Sala 1986; Baudisch 1903; Beffa 1949, 1961; Bejer-Petersen 1955, 1957b, 1978; Bergmuller 1903; Berryman 1988; Besceli 1967; Besceli, Varol, & Ekici 1968; Bevan 1982, 1983, 1987: 122; Bevan & King 1983; Blandford 1894b; Boas 1923: 334; Brandes 1901; Brandt 1948; Brichet 1898, 1900a; Brown, J. M. B. & Bevan 1966; Bugnion 1887b; C. J. Q. 1905: 183; Carle 1975b; Carle, Granet, & Perrot 1979a, 1979c; Chararas 1957e, 1960c: 797, 1961b: 78, 1961c: 103, 1962: 210; Charvat 1950; Dombrowsky 1887; Eckstein 1889, 1897, 1915, 1917, 1926: 575, 1936, 1939b; Eggers 1899c; Eichhoff 1881a: 37, 125, 1882d: 337; Eidmann 1962: 161; Elton 1950; Escherich 1923b: 431, 479, 557; Essig 1942: 604; Everts 1900; F. 1900; Feytaud 1950a; Fleischer 1877a; Francke-Grosmann 1954b; Fuchs 1904a, 1905c: 339, 1906b, 1911b; Gabler 1955; Gerhard 1908; Gornostaev 1916: 310; Graber 1879: 130; Grandi 1951; Gregoire 1985, 1988; Gregoire & Merlin 1985; Gyorfi 1948, 1957; Hagedorn 1903a; Hansen, T. E. et al. 1981; Hartig 1877: 195; Helmbacher 1924; Hennings 1908b; Henschel 1876a: 40, 242, 1885b, 1895a: 142; Hess 1898: 373; Hess & Beck 1914: 259, 1927: 316; Hesse 1898; Hierholzer 1951a; Hopkins 1909a: 143–147; Husson & Stauder 1954: 355; Istrate 1971; Jacobi 1906: 145; Jamnicky 1961b; Joly 1976; Judeich & Nitsche 1895: 447, 458; Kangas 1951: 225, 1952, 1954b; Karpinski 1933b: 23; Karpinski & Strawinski 1948: 154; Kauschinger 1883: 109, 1893: 150; Kholodkovskii 1889: 264, 1912: 278, 300; Kneiff 1939: 170; Knoche 1904: 391, 1905: 357; Knotek 1899b: 4, 1901: 567; Kobakhidze 1967, 1968; Kobakhidze & Sikharulidze 1967; Kobakhidze et al. 1968; Koch 1909: 320; Kollar 1858: 23; Kolomiets 1981; Kolomiets & Bognanova 1982; Kozikowsky 1913: 341; Kozlowski 1969: 121; Kraemer 1953: 463; Krivolutskaya 1956: 828; Krivosheina & Aksentev 1984; Kurenzov 1935a: 20, 28, 1948b: 109, 1950d: 159; Lekander 1959a: 83; Lemperiere & Bailley 1986: 18; Lemperiere et al. 1988; Lengerken 1939: 35, 1954: 72; Levieux, Lieutier, & Delplanque 1985a; Lindemann 1978: 53–87, 1880a: 163; Lohrenz 1907: 41; Loos 1913: 406; Louzil 1961: 42; Lozovoi & Tropin 1965, 1967; Luik & Voolma 1980; Lunardoni & Leonardi 1889: 432; Madon 1930: 112; Manegeaux & Cochon 1897: 206–209; Marcu 1941: 402; Maslov & Nizharadze 1973; Melnikova 1962, 1965; Nishiguchi 1970; Nordlinger 1856: 35; Novak, V., Hrozinka, & Stary 1976: 31; Nunberg 1929: 96; Nuorteva 1956c: 94; Nusslin 1898: 278, 1906b: 16, 1913: 202, 1913: 238, 1927: 292, 300; O. B. 1905: 466; Ohnesorge 1955: 280; Paulian 1943: 324; Pauly 1892b: 258; Perris 1856a: 244; Petrenko 1966; Pfeffer 1941c: 2, 1952a: 159; Pomerantzev 1907: 177–192; Postner 1974: 402; Prell 1930c: 638, 1931: 364; Ratzeburg 1837: 136, 177, 1839: 165, 217; Reid 1958d: 505; Rhumbler 1922: 280, 1927: 292; Rimski-Korsakov et al. 1949: 267; Roigas & Voolma 1977; Rupertsberger 1880: 226; Saalas 1913a: 69, 77, 1949: 341, 351; Schimitschek 1930a: 295, 1955a: 58; Schmidt 1881: 43; Schneider 1897: 382; Schneider-Orelli 1947b: 156; Schulze 1927: 336; Schwappach et al. 1929: 186; Schwerdtfeger 1944a: 171, 178, 1957a: 184; Sedlaczek 1935a: 154; Severin 1902a: 72–81, 1908: 239; Shavliashvili 1984; Shavliashvili, Mukhashavria, & Zharkov 1976; Simionescu 1978; Spessivtsev 1913a: 57, 1928a: 223; Stark 1926a: 330, 333, 1952: 185; Stefanov 1949a: 97; Taschenberg 1880: 216; Tragardh 1927c: 72, 1929a: 309, 1930c: 469, 1939b: 145, 169; Tredl 1908b: 138; Ulrici 1873: 150; Vasechko 1978a; Voolma 1980a; Voute & de Vries Brockman 1965; Wachtl 1901: 381; Wahl 1897: 589; Weber 1926: 574; Wichmann 1927b: 350; Wolff & Krausse 1922: 77; Wood, S. L. 1963: 82. (**ds**) Acatay 1968, 1971; Acloque 1896; Alfken 1924: 365; Ammann & Knabl 1913, 1923; Andersch 1851; Anonymous 1978i, 1983a; Austara et al. 1983; Bakke 1956b; Bakke & Kvamme 1977; Balazy & Michalski 1960; Barthe 1896; Battisti 1985, 1987; Bau 1888; Beffa 1949; Bejer-Petersen 1952; Bejer-Petersen & Jorum 1977: 19; Berryman 1988; Bevan & King 1983; Blanchere & Robert 1889; Blandford 1894b; Boas 1923: 334; Borchert 1951; Brakman 1966b: 204; Brancsik 1906; Brichet 1898; Browne, J. M. B. & Bevan 1966; Brundin 1934; Bucking 1932; Buresh & Lazarov 1956; Calwer 1884, 1893; Chapuis 1869, 1873; Chapuis & Candeze 1853; Charvat 1950; Dejean 1821, 1825, 1837; Duftschmidt 1825; Dzhambazishvili 1959; Eder 1934; Eggers 1904; Elton 1947, 1949a, 1949b, 1951; Elton & Blankwaardt 1953; Elton & Voute 1950; Endrodi 1958b; Ericson & Sandin 1893; Ernisch 1953; Escherich 1929, 1932b; Esterberg 1928, 1959; Everts 1900; Fairmaire 1864: 150; Fricken 1889: 278; Fuchs 1904a, 1905a, 1905c: 339, 1906b; Gabler 1949b; Gaubil 1849: 127; Gaunitz 1928: 92; Gohrm 1954: 382–433; Gozis 1875: 79; Gradojevic 1933; Granet & Perrot 1977; Gredler 1866: 369; Gregoire 1988; Grill 1895: 308; Grouzelle 1905; Grune 1979: 59; Gyorfi 1941b; Hagedorn 1903a, 1910d: 21; Hansen, V. 1939, 1956, 1957: 167–168, 1964: 459; Hellen 1947; Hennig 1954: 257; Henschel 1895a: 142; Heyden 1876: 297; Heyden, Reitter, & Weise 1883: 181, 1891: 668, 1906: 709; Hopkins 1909a: 142–147, 1909b: 141–146; Horion 1949, 1951; Jacentkovsky 1939: 77; Jazentkovsky 1912: 287; Joly 1976; Judeich & Nitsche 1895: 447, 458; Kaltenbach 1874: 686; Karpinski 1925: 216, 1931: 22, 1933b: 23, 1948b: 229; Karpinski & Strawinski 1948: 154; Kestercanek 1881a: 12; Kiefer et al. 1942: 528; Klefbeck & Sjoberg 1960: 228; Kleine 1912a: 215, 262, 263, 267, 1912b: 176, 1913a: 34,

1914b: 248, 249, 1934a: 132; Knotek 1899b: 4, 1901: 567; Kobakhidze 1965: 325, 1967; Kobulajiv 1934: 63; Koch 1910: 319–340; Koltze 1901: 152; Kono 1939b: 64; Kono & Tamanuki 1939: 88, 91; Koppen 1882: 246; Kraatz 1869: 59; Krivolutskaya 1956: 828, 1983; Krogerus 1921b: 115; Kurenzov 1934a: 54, 1935a: 20, 28, 1935c: 188, 1936b: 351, 1938a: 64, 1965, 1967; Kurir 1947c: 7; Lacordaire 1866: 361; Langhoffer 1915c: 157; Lazorko 1963; Leclercq 1971; Lekander 1955b: 17; Lentz 1857: 138; Leunis 1886: 179; Lindemann 1884b: 263; Lokaj 1868: 63; Lomnicki 1886a: 241, 1913b: 147; Loos 1913: 406; Lovendal 1890c: 210; Lucht 1987: 276; Luigioni 1929: 993; Luitjes et al. 1954: 118; Lunardoni & Leonardi 1889: 432; Lundberg 1979: 31; Lundblad 1950c: 114; Mandl 1931: 25; Marchant & Borden 1976; Melnikova 1965: 1867; Negru 1966b: 400, 1968a: 45; Nunberg 1928b: 88, 1954: 31; Nuorteva 1956b: 168, 1971: 66; Nusslin 1898: 278; Pacher 1865: 151; Palm 1946: 120; Palmen 1944: 60, 1946: 194; Pauly 1894: 193, 233, 253, 316, 357; Penecke 1927: 235; Perris 1876a: 254, 1877a: 414; Peterson 1922: 299, 1952: 299–322; Pfeffer 1924b: 471, 1931b: 74, 1935: 159, 1936: 89, 1947e: 1, 1950b: 73, 1989a: 34; Pierce, W. D. 1917: 65; Pomerantzev 1907b: 491; Postner 1974: 402; Prossen 1913: 82; Rapp 1934: 721; Ratzeburg 1837: 136, 177, 1839: 165, 217; Redtenbacher 1858: 826, 1874: 369; Reitter 1869a: 20, 1869b: 153, 1894a: 53, 1916: 281; Rimski-Korsakov et al. 1949: 267; Roubal 1941: 258; Rudinsky 1960; Saalas 1913a: 69, 77, 1917a: 18, 1931: 70; Sahlberg 1900: 105; Sainte-Claire & Mequignon 1914: 444; Schaschl 1854: 132; Schaufuss 1915: 1222; Schaum 1854: 148, 1859: 95, 1862: 100; Schedl 1952f: 87, 1980a: 8, 1981b: 54; Scheerpeltz & Winkler 1930: 256; Schilsky 1909: 187; Schiodte 1873: 100; Schmaus 1960: 32; Seidl 1876: 4; Seidlitz 1872: 392, 1891a: 559, 1891b: 605; Serez 1979; Siebke 1875: 282; Sokanovskii 1960; Stark 1926a: 330, 333, 1926b: 102, 1926j: 125, 1931a: 21, 1952: 185; Stein 1868: 113; Stein & Weise 1877: 163; Stierlin 1898: 433; Stierlin & Gautard 1871: 291, 1906: 205; Strand 1946: 595; Strand & Hanssen 1935: 70; Sturm 1826: 102, 1843: 229; Swaine 1919b: 5; Thomson 1865: 355, 1868: 219; Torka 1933: 121; Tragardh 1939b: 145, 169; Tredl 1907: 11, 1908b: 138; Vappula 1965: 152; Voute 1947c: 85; Westhoff 1882: 237; Whittle & Anderson 1987; Wichmann 1927a: 57–58; Winter, T. G. 1983: 9; Wiren 1945: 43; Wood, S. L. 1963: 82; Yanovskii & Tegshzhargal 1985: 407; Yin & Huang 1981: 556; Zinovjev 1955: 187; Zoufal 1920: 20. (**tx**) Acatay 1968: 19; Acloque 1896; Bach 1854, 1864; Balachowsky 1949a: 134; Barbey 1901: 10, 20, 56; Beffa 1949, 1961; Bejer-Petersen 1957; Bertolini 1872; Bevan 1983; Blandford 1894b; Boas 1923: 334; Calwer 1858; Ceballos 1945; Chapuis 1869, 1873; Chapuis & Candeze 1853; Charvat 1950; Crotch 1966; Csiki 1907; Dejean 1821, 1825; Doebner 1860; Dombrowsky 1887; Duftschmidt 1825; Eggers 1936e: 89; Eichhoff 1864b: 27, 1881a: 37, 125, 1883a: 102, 124; Erichson 1836: 45, 53; Escherich 1923b: 431, 479, 557; Escherich & Escherich 1897; Essig 1942: 604; Ferrant 1911; Fleischer 1905; Fricken 1889: 278; Fuchs 1906, 1912a; Gabler 1949b, 1955; Gemminger & Harold 1872: 2672; Grune 1979: 58, 59; Hagedorn 1910a: 60; Hansen, V. 1956, 1964: 458; Henry 1892: 13; Henschel 1876a: 40, 242, 1895a: 142; Hopkins 1909a: 143–147, 1914: 120; Houlbert 1922a:pl. 1, 1922b: 251; Jacobi 1906: 145; Jacquelin du Val & Fairmaire 1868: 101; Joly 1976; Judeich & Nitsche 1895: 447, 458; Karpinski & Strawinski 1948: 154; Koch 1913: 95, 110, 1928: 90, 102, 1932: 142; Krivolutskaya 1956: 828, 1958: 115; Kugelann 1794: 523; Kuhnt 1913: 1051; Kurenzov 1941a: 116, 1948b: 109; Lacordaire 1866: 361; Lazorko 1963; Letzner 1891: 373; Lindemann 1879: 53; Louzil 1961: 105; Lovendal 1889b: 38, 1890c: 210, 1898: 87; Lucas 1920: 230; Lucht 1987: 276; Luigioni 1929: 993; Lunardoni & Leonardi 1889: 432; Meixner 1937: 1215; Negru 1966: 400; Nordlinger 1848: 250, 1856: 35; Novak, V., Hrozinka, & Stary 1976: 3; Nunberg 1928a: 140, 1954: 31; Nusslin 1912c: 279; Panzer 1795a: 288; Perris 1877a: 414; Pfeffer 1932b: 13, 1941c: 2, 1947e: 1, 1955a: 121, 1989a:pl. 2; Portevin 1935: 318; Postner 1974: 402; Quaschik 1953: 35; Ratzeburg 1837: 136, 177, 1839: 165, 217; Redtenbacher 1849: 363, 1849b: 27, 1858: 826, 1874: 369; Reitter 1894a: 53, 1913a: 47, 1916: 281; Rhumbler 1922: 280, 1927: 292; Rudnev 1966: 123; Rupertsberger 1880: 226; Saalas 1913a: 69, 77, 1914: 304–306, 1949: 341, 351; Schedl 1934f: 1635, 1952f: 87, 1980a: 8, 1981b: 54; Schimitschek 1937c: 47, 1955c: 77, 1958: 26–63; Sedlaczek 1912: 308; Seidlitz 1872: 392, 1891a: 559, 1891b: 605; Sokanovskii 1960: 676; Spessivtsev 1913a: 57–58, 1922a: 465, 1925a: 164, 1925b: 9; Stark 1952: 185; Stierlin 1898: 433; Stresemann et al. 1989: 351; Swaine 1919b: 5; Taschenberg 1880: 216; Thomas, J. B. 1965c; Thomson 1865: 355, 1868: 219; Verhoeff 1896: 111; Whittle & Anderson 1987; Wood, S. L. 1963: 9, 82; Yin & Huang 1981: 556. (**ms**) Anonymous 1901e: 564; Bevan 1964b; Brandes 1901; Escherich 1932b; Fuchs 1911b; Gregoire et al. 1985b; King & Evans 1985; Kozikowsky 1929: 254; Lekander 1959a: 83; Lieutier 1984a; Lucas 1920: 230; Luitjes et al. 1958: 201; Ritter 1929: 554; Rohrl 1914a: 131; Schimitschek 1961c: 193; Swaine 1925c: 262; Thalenhorst 1960: 605; Tondeur 1976; Vorontzov 1968.

***murrayanae* Hopkins** 1909a: 140. Holotype ♀; Keystone, Wyoming [USA]; USNM, Washington. Figures: Ives & Wong 1988: 78, Wood 1963: 9, 13. Distribution: North America (Alberta, British

Columbia, Manitoba, Ontario in Canada/ Colorado, Idaho, Michigan, Minnesota, Montana, Utah, Wyoming in USA).

Hosts: *Pinus banksiana, P. contorta, P. strobus*.

Notes: (3) Hopkins 1902e: 3 (*shoshone*, nomen nudum).

References: (**ay**) Cerezke 1964: 488; Duncan, B. 1987; Hopkins 1909a: 138–142; Thomas, J. B. 1967; Thomas, J. B. & Krywienczyk 1966. (**bv**) Barr, B. A. 1969: 640. (**cn**) Anderson, R. F. 1960: 225; Brown, C. E., Hopkins, & Robins 1960: 86; Browne 1968b: 224; Cerezke & Emond 1989: 21; Clapp 1942: 31; Craighead 1927: 9; Doane et al. 1936; Drooz 1985: 350; Essig 1926: 514, 1958: 515; Felt 1924: 261, 1926: 248, 261, 1930a: 248, 261; Hatch 1938: 193; Hewitt 1914: 501–518; Hopkins 1909b: 136–139; Ives, Lawrence, & Robins 1974: 71; Jannone & Binghi 1959; Keen 1938: 109, 1952c: 141; Kondo & Moody 1987: 108; Lindgren, B. 1980a: 61; Lindquist, O. H. & Syme 1981: 38; Moody 1988: 77; Powell, J. M., Wong, & Melvin 1972: 15; Robins et al. 1974: 40; Ruppel 1967: 32; Silver & Ross 1960: 98, 1961: 98, 1962b: 111, 1963a: 110; Smith, G. J. & Melvin 1974a, 1974b; Swaine 1910d: 42, 1913: 41–43, 89, 1914: 28, 40, 1918a: 61, 64, 1925: 261–266; Syme & Nystrom 1988: 35; Tripp & Blauel 1969: 103; Tripp, Robins, & Blauel 1970: 89; Tripp, Ross, & Van Sickle 1977: 81; Unger 1976; Watts 1947: 27; Wilson, L. F. 1977: 70; Wood, C. S., Van Sickle, & Humble 1987: 13. (**ec**) Burks 1979: 799; Callaham & Shifrine 1960: 146; Craighead et al. 1927; DeLeon 1934a; Furniss, R. L. & Carolin 1977: 353; Hopkins 1909b: 136–139; Keen 1938: 109; Muesebeck 1942: 95, 1950: 131; Reid 1955: 316; Tomalak, Welch, & Galloway 1989: 21. (**hb**) Anderson, R. F. 1960: 225; Bright 1976d: 59; Browne 1968: 224; Chamberlin 1939: 164–165, 1958: 77–78; Doane et al. 1936; Drooz 1985: 350; Essig 1926: 514, 1958: 515; Felt 1926: 248, 261, 1930a: 248, 261; Furniss, M. M. & Johnson 1987: 378; Furniss, R. L. & Carolin 1977: 353; Hopkins 1909a: 138–142; Ives & Wong 1988: 79; Keen 1938: 109, 1952c: 141; Lindgren, B. 1980a: 61; Reid 1955: 316; Swaine 1918a: 61, 64; Wilson, L. F. 1977: 70; Wood, S. L. 1963: 88, 1982b: 189. (**ds**) Anderson, R. F. 1960: 225; Bright 1976d: 59; Brown, C. E., Hopkins, & Robins 1960: 86; Browne 1968b: 224; Chamberlin 1925, 1939: 164–165, 1958: 77–78; Drooz 1985: 350; Duncan, B. 1987; Essig 1926: 514, 1958: 515; Evans, D. 1983; Evans, D., Lowe, & Hunt 1978; Felt 1926: 248, 261, 1930a: 248, 261; Furniss, M. M. & Johnson 1987: 378; Furniss, R. L. & Carolin 1977: 353; Gast et al. 1989: 385; Gautreau 1974: 5; Gautreau & Melvin 1974: 13; Hagedorn 1910d: 22; Hopkins 1909a: 138–142, 1909b: 136–139; Hopping 1922: 130; Jannone & Binaghi 1959; Keen 1929a: 18, 1938: 109, 1952c: 141; Kleine 1912b: 176, 1914b: 397, 1934a: 133; Kusch 1967; Leng 1920: 338; Lindquist, O. H. & Syme 1981: 38; Mank 1934: 81; McComb et al. 1953: 3; Patterson & Hatch 1945: 150; Ruppel 1967: 32; Smith, G. J. 1974a, 1974b; Smith, G. J. & Melvin 1974a, 1974b; Smith, G. S. 1930; Still, Tidsbury, & Melvin 1974a: 13; Susut & Melvin 1974; Swaine 1913: 89, 1914: 28; Syme & Nystrom 1988: 35; Wood, S. L. 1951a: 127, 1963: 88, 1972a: 405, 1982b: 189. (**tx**) Anderson, R. F. 1960: 225; Benoit 1985: 89; Bright 1976d: 59; Chamberlin 1939: 164–165, 1958: 77–78; Evans, D. 1983: 31; Hagedorn 1910a: 60; Hopkins 1909a: 72, 138, 140–142; Ives & Wong 1988: 78; Keen 1929a: 18; Kusch 1967; Lindquist, O. H. & Syme 1981: 38; Pardy 1983; Swaine 1918a: 61, 64; Syme & Nystrom 1988: 38; Thatcher, T. O. 1954: 3–6; Thomas, J. B. 1965c, 1967; Thomas, J. B. & Krywienczyk 1966; Wood, S. L. 1963: 9, 13, 88, 1972a: 405, 1982b: 189. (**ms**) Hatch 1938: 193.

parallelocollis **Chapuis** 1869: 36. Holotype ♀; Mexico; IRSNB, Brussels.

Figures: Wood 1963: 9 (as *aztecus*).

Distribution: North America (Guatemala/ Honduras/ Chiapas, Chihuahua, Durango, Guerrero, Jalisco, Mexico, Michoacan, Morelos, Oaxaca, Sinaloa in Mexico).

Hosts: *Pinus leiophylla, P. montezumae, P. oocarpa, P. tenuifolia, P.* spp.

Notes: (3) Citations of this name in original data by all authors from 1909 to 1969 refer to *D. approximatus* Dietz.

References: (**ay**) Francke-Grosmann 1966c. (**bv**) Barr, B. A. 1969: 640. (**cn**) Anonymous 1960i, 1975r; Becker, G. 1951: 186–209, 1952a: 682–687; Felt 1924: 254, 1926: 248, 254, 1930a: 248, 254; Hopkins 1909b: 75; Massey & Rodriguez 1967a; Perry 1951: 159; Schwerdtfeger 1957b: 585, 1959: 56. (**ec**) Becker, G. 1951: 186–209, 1952b: 682–687, 1954, 1955; Berryman 1966a: 519, 1966b; Francke-Grosmann 1966c; Livingston, R. L. & Berryman 1972: 1793; Massey 1961: 359, 1966c: 424; Massey & Rodriguez 1967a; Swaine 1925c: 263. (**hb**) Atkinson et al. 1986: 17; Becker, G. 1951: 186–209, 1952a: 682–687, 1954, 1955; Burgos & Saucedo 1983: 56; Felt 1926: 248, 254, 1930a: 248, 254; Massey & Rodriguez 1967a; Perry 1955: 5; Wood, S. L. 1963: 46, 1982b: 178. (**ds**) Anonymous 1975e; Atkinson & Equihua 1985a: 73, 1985b: 229, 1988: 88; Atkinson et al. 1986: 17; Becker, G. 1951: 186–209, 1952a: 682–687; Blackwelder 1947; Blandford 1897a; Bongberg & Bennett 1960: 1; Burgos & Saucedo 1983: 56; DeLeon 1938; Felt 1926: 248, 254, 1930a: 248, 254; Ferrer 1942; Hagedorn 1910d: 22; Kleine 1912b: 176, 1914b: 348, 1934a: 133; Massey & Rodriguez 1976a; Peresquia 1978; Perry 1940: 339, 1951: 159, 1955g: 11; Schedl 1940a: 339, 1955g: 11, 1963c: 157, 1977e: 42; Wood, S. L.

1957c: 396, 1963: 46, 1982b: 178. (**tx**) Blandford 1897a; Chapuis 1869: 36, 1873: 244; DeLeon 1938; Gemminger & Harold 1872: 2672; Hagedorn 1910a: 60; Hopkins 1905b: 80–81; Muesebeck 1942: 95, 1950: 131; Perusquia 1978; Thomas, J. B. 1965c; Wood, S. L. 1957c: 396, 1963: 5, 13, 46, 1969c: 121, 1982b: 178. (**ms**) Swaine 1925c: 263.

aztecus Wood 1963: 69. Holotype ♂; San Raphael, Mexico, Mexico; Wood Collection. Synonymy: Wood 1969c: 121.

References: (**bv**) Barr, B. A. 1969: 640. (**tx**) Thomas, J. B. 1965c; Wood, S. L. 1963: 69, 1969c: 121.

***ponderosae* Hopkins** 1902c: 10. Lectotype ♀; Spearfish, South Dakota [USA]; USNM, Washington, designated by Wood 1982b: 171.

Figures: Bright 1976d: 195, 200, 206, Struble & Johnson 1955: 3 (all stages), Swaine 1914: 26 (adult), Wood 1963: 7, 13.

Distribution: North America (British Columbia in Canada/ Baja California Norte in Mexico/ Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, South Dakota, Utah, Washington, Wyoming in USA).

Hosts: *Pinus albicaulis, P. balfouriana, P. contorta, P. coulteri, P. edulis, P. flexilis, P. lambertiana, P. monophylla, P. monticola, P. ponderosa, P. strobiformis*, rare (accidental?) in *P. jeffreyi*.

References: (**ay**) Amman 1982a; Farris 1965a: 3–4; Frye, Flake, & Germain 1974: 753; Godbee & Franklin 1978: 1087; Guenther 1978; Higby 1981; Higby & Stock 1982; Hopkins 1906b: 147–148, 1909a: 109; Hughes 1973c; Langor 1988: 431; Lanier & Wood 1969: 517–519; Lyon 1958: 583; McCambridge 1962: 723; McCambridge & Mata 1969; Nunberg 1928a: 145; Payne et al. 1973; Pierce et al. 1987; Pitman & Vite 1969; Schonherr 1970b; Smith, R. H. 1965a; Stevenson 1967: 203; Stock, M. W. & Amman 1980, 1983; Stock, M. W., Amman, & Higby 1984; Stock, M. W., Gregoire, & Furniss 1987; Stock, M. W. & Guenther 1979; Stock, M. W., Guenther, & Pitman 1978; Stock, M. W. & Higby 1980; Stock, M. W., Pitman, & Guenther 1979; Sturgeon 1980b, 1980c; Sturgeon & Mitton 1986a; Sturgeon & Robertson 1985; Thomas, J. B. 1967; Trostle 1986; Whitehead 1981, 1986; Whitehead et al. 1989; Whitney & Farris 1970. (**bv**) Amman 1972a, 1975, 1976, 1977, 1978, 1982a, 1985b, 1988a, 1989a; Amman & Cole 1982; Annila 1971a: 12; Anonymous 1968a; Baker, B. H., Amman, & Trostle 1971; Bakke 1973; Barr, B. A. 1969: 640; Bartos 1988a, 1988b; Berryman 1968a: 61, 1976b, 1988; Berryman et al. 1978, 1985; Billings 1975; Billings, Gara, & Hrutfiord 1976; Borden 1984; Borden, Chong, & Fuchs 1983; Borden, Chong et al. 1983; Borden, Conn et al. 1983; Borden & Lacey 1985; Borden & Lindgren 1988a, 1988b; Borden et al. 1987; Cerezke 1989; Chararas et al. 1982: 1095; Chatelain & Schenk 1983; Christiansen & Huse 1980: 473; Cochran 1972; Cole, D. M. 1973; Cole, W. E. 1969, 1973, 1975; Cole, W. E., Amman, & Jensen 1976; Cole, W. E., Guymon, & Jensen 1981; Cole, W. E. & Shepherd 1967; Conn et al. 1983, 1984; Cox, R. G. 1967b; Creasap 1977a; Dixon et al. 1988a, 1988b; Du 1987; Fares, Sharpe, & Magnuson 1980a, 1980b; Fargo et al. 1979: 628; Gara, Geiszler, & Littke 1984; Gargiullo & Berisford 1981: 392; Geiszler, Gara, & Littke 1984; Goheen et al. 1985; Gray, B. 1972; Gries et al. 1988; Grossman 1988: 10; Hall 1989; Hawksworth 1985; Hughes 1973c, 1973d; Hughes, Renwick, & Vite 1976: 1167; Hunt & Borden 1988, 1989; Hunt & Smirle 1988; Hunt et al. 1986, 1989; Hynum 1978b; Hynum & Berryman 1980, 1981; Inscoe 1982; Inscoe & Beroza 1976: 172; Jacobson 1972; Klassen, Ridgway, & Inscoe 1982; Klein, Parker, & Jensen 1978: Langor 1989; Larsson et al. 1983; Laut 1985: Libbey, Ryker, & Yandell 1985; Lindgren 1983: Lindgren & Borden 1989; Lister & Laut 1987: Mata 1972; McCambridge 1962, 1964: 1–4. 1967b, 1968b, 1969, 1970, 1971, 1974b: McGhehey 1968: 1153, 1969: 2, 1971; McGregor & Miller 1989; McMullen & Safranyik 1985; Miller, J. M. & Keen 1960: 146; Miller, M. C. et al. 1989; Miller, R. H. & Berryman 1986; Miller, R. H., Whitney, & Berryman 1986; Moeck 1980; Moeck, Wood, & Lindahl 1981; Nijholt, McMullen, & Safranyik 1981; Olsen, R. C. 1969; Payne & Wood 1981: 480; Pierce et al. 1987; Pitman 1966b, 1969a: 143–149, 1971; Pitman, Stock, & McKnight 1978; Pitman & Vite 1969: 143–149; Raffa 1980, 1981, 1988a, 1988b; Raffa & Berryman 1982a, 1982c, 1983a, 1983b, 1987; Rasmussen 1974, 1980, 1987; Renwick & Pitman 1979; Renwick & Vite 1968: 65–68, 1970; Rudinsky 1973a: 512, 1974, 1979a: 408; Rudinsky & Michael 1973; Rudinsky et al. 1974; Ryker 1988; Ryker & Libbey 1982; Ryker & Rudinsky 1976b, 1982; Ryker & Yandell 1983; Safranyik 1970a: 4192, 1989; Safranyik & Jahren 1970a: 11, 19, 1970b: 35–36; Safranyik & Vithayasai 1971; Schmitz, R. F. 1988a, 1988b; Schmitz, R. F. et al. 1980; Schonherr 1970b, 1976, 1977; Shepherd 1960: 1001, 1965a: 207–215, 1965b, 1966: 507–518; Shepherd & Cook 1962, 1963; Silverstein 1970a, 1970b; Silverstein & Young 1976: 20; Stark, R. W. 1978; Stark, R. W. et al. 1968; Stock, M. W. & Borden 1983: 549; Stock, M. W. & Guenther 1979; Svihra & Volney 1983: 519; Syed & Graham 1987; Thomas, T. L. & Agee 1986; Trostle 1971; Vanderwal et al. 1988; Vite 1969, 1970b: 249–250, 1975; Vite & Pitman 1967: 683–701, 1968: 169–170, 1969: 113–117; Waring & Pitman 1983; Weber, R. & Schurig 1984; Whitehead 1986; Whitehead et al. 1989; Wood, D. L. 1967b, 1968, 1970a, 1976, 1980b; Yandell 1984.

(**cn**) Ahern 1988; Alexander, N. E., Borden, & Vakenti 1976; Allen, J. W. & White 1981; Allen, S. J. 1969: 12, 1977, 1978, 1979; Allen, S. J. & Unger 1975: 5, 1976: 3; Allen, S. J. & Wood 1973a: 5, 1973b: 6; Amman 1969: 1–8, 1970: 134–139, 1975, 1976, 1983a, 1983b, 1985a, 1988a, 1988b, 1989a, 1989b; Amman & Anhold 1989; Amman & Baker 1972; Amman, Baker, & Stipe 1973; Amman, Lessard, et al. 1988; Amman & McGregor 1985; Amman, McGregor, & Dolp 1985; Amman, McGregor, et al. 1988; Amman & Rasmussen 1969: 631–634, 1974; Amman & Schmitz 1988; Amman et al. 1977, 1988, 1989; Anderson, L. S. et al. 1976; Anderson, R. F. 1960: 221; Andrews 1968a: 141, 1968b: 146, 1969b: 135, 1982; Andrews & Erickson 1973a: 5, 1973b: 3, 1975, 1976: 2; Andrews & Monts 1977: 2, 1978: 2, 1979: 2; Andrews & Vanderwal 1971: 4; Andrews, Vanderwal, & Baumann 1969: 136; Andrews, Vanderwal, & Wood 1970: 4; Anhold 1986a, 1986c, 1986d, 1988; Anhold, & Jenkins 1987; Annand 1941, 1942: 26, 1947a: 30, 1947b, 1948: 34, 1949: 26; Anonymous 1940i: 580, 1941i: 812, 1955g: 9, 1955j: 8, 1958a: 4, 1960, 1960g: 8, 1960h: 3, 1960i, 1960j: 1, 1961s, 1962h, 1963b, 1963y, 1964h, 1964u, 1965b, 1965r, 1966f, 1966i, 1966u, 1967h, 1967t, 1968g, 1968p, 1969e, 1969f, 1969m, 1970h, 1970k, 1970t, 1971e, 1971i, 1972f, 1972g, 1972t, 1973b, 1973n, 1974e, 1974f, 1974n, 1974v, 1975e, 1975f, 1975g, 1975aa, 1976, 1976e, 1976f, 1976g, 1976h, 1976q, 1977g, 1977h, 1977i, 1977n, 1977x, 1978a, 1978f, 1978b: 35, 1978g, 1978h, 1978q, 1978r, 1978s, 1978z, 1979a, 1979e: 4, 1979f, 1979g, 1980a, 1980m: 30, 1981a, 1981g, 1981j, 1981v, 1982b, 1982c, 1983b, 1983d, 1983f, 1984a, 1984d, 1984f, 1985i: 5, 1986b: 5, 1986e, 1986f, 1987e: 3, 1987i, 1988b, 1988c; Arno & Hoff 1989; Averill 1978a; Averill & Leatherman 1975, 1983; Averill & Lister 1982; Averill et al. 1977; Bailey 1957: 30–37; Baker, B. H. 1969; Bakke 1973; Baldwin, P. H. 1965: 79; Baltensweiler 1985; Bartos & Downing 1988, 1989; Bauman 1967: 168, 1968: 184, 1969: 158; Beal 1937b: 1–5, 1939: 1–9, 1943: 359–366, 1950, 1951: 58; Beatty 1980: 3, 1983; Beauverie 1912; Becker, G. 1951; Beddows 1968: 216, 1969: 195; Beeson 1918: 114–124; Bennett 1981, 1983; Bennett & Bousfield 1979; Benson, Watson, & Wyllie 1973; Bentz, B. et al. 1989; Berryman 1969: 1033, 1973: 1480, 1976b, 1978, 1979, 1982a, 1983, 1987, 1988; Berryman & Ashraf 1970: 1235; Berryman & Stark 1985; Berryman et al. 1978; Beveridge & Thier 1982; Blackman 1931c; Bollenbacher & Gibson 1986; Bongberg 1956a, 1957, 1962; Boone 1925; Borden, Chong, & Bergvinson 1988; Borden, Chong, & Lacey 1986; Borden & Lacey 1985; Borden & Lindgren 1988a, 1988b; Borden et al. 1983; Bousfield & Carlson 1978; Bousfield, Eder, & Bennett 1985; Bousfield, Hagle, & Kohler 1988; Bousfield, McGregor, & Kohler 1973; Brennan 1982; Brohman, Brickell, & McGregor 1972; Browne 1968b: 225; Brues 1920: 70; Buckman 1973; Buell 1953; Burke 1906: 4, 1908; Buttrick 1912: 456; Byler et al. 1986; Cahill 1971a, 1971b, 1972a, 1972b, 1972c, 1972d, 1973a, 1973b, 1973c, 1975a, 1975b, 1975c, 1975d, 1976, 1977, 1978; Cahill & Johnson 1976; Cahill & Lister 1971; Cahill, Lister, & Brown 1973; Cahill & Yarger 1976; Call 1989; Carlson & Cole 1965; Ceballos & Cordoba 1945a; Celaya 1980; Cerezke 1989; Cerezke, Borden, & Trott 1984; Cerezke & Emond 1989: 11; Chamberlin 1939: 156–158, 1958: 72; Chansler, Cahill, & Stevens 1970: 3; Chansler & Pierce 1966: 1357–1359; Chatelain & Schenk 1984; Cheng 1989; Chrystal 1949b: 3–11; Ciesla 1971, 1974, 1978; Ciesla, Dewey, & Tunnock 1971: 17; Ciesla, McGregor, & Meyer 1971; Cole, D. M. 1973, 1978, 1985a, 1985b, 1985c, 1989; Cole, W. E. 1962a, 1964a, 1967: 860–861, 1974, 1978a, 1980, 1989; Cole, W. E. & Amman 1969: 7, 1980; Cole, W. E., Amman, & Jensen 1976, 1985; Cole, W. E. & Cahill 1976; Cole, W. E., Cahill, & Lessard 1983; Cole, W. E. & Jensen 1985; Cole, W. E. & McGregor 1983a, 1985, 1988; Cole, W. E. & Sheperd 1967: 13–15; Cole, W. E. & Weenig 1967: 857–858; Colling 1988; Collis & Alexander 1966a, 1966b; Cottrell 1967: 88, 1968: 37, 1973: 6; Cottrell & Adams 1973; Cottrell & Doidge 1972: 3; Cottrell & Erickson 1977: 2, 1978: 2; Cottrell & Fiddick 1962, 1968, 1972; Cottrell & Koot 1975, 1976; Cottrell & Monts 1970a, 1970b; Cottrell, Unger, & Fiddick 1979: 21; Cottrell & Wood 1971: 3; Coulson & Witter 1984: 524; Cox, R. G. 1967a, 1968, 1969, 1972; Craighead 1924, 1925a: 347–348, 1925c, 1927: 7–8, 1930: 5, 1938, 1942a, 1942b: 368–386, 1947, 1948, 1949, 1951, 1952; Craighead & Middleton 1930; Creasap 1976a, 1976b, 1976c, 1977a, 1977b, 1977c, 1977e, 1977f, 1977g, 1977h, 1977i, 1977j, 1977k, 1978a, 1978b; Creasap & Hostetler 1978; Creasap & Minnemeyer 1976; Crookston 1977, 1978, 1979; Crookston & Stark 1985; Currie 1905: 100; Curtis & Hadfield 1977a, 1977b; Curtis & Johnson 1975; Curtis & Tegethoff 1978; Dahlsten & Herman 1965: 8–10; Dahlsten & Dreistadt 1984; Dale & Kliejunas 1986; Daniel, T. C. 197.; Davis 1938: 31; Davis & White 1989; DeNitto 1984; DeNitto & Pierce 1981; DeNitto & Schultz 1982b; Dewey & Clinton 1980; Dewey et al. 1974; Dillman & White 1982a, 1982b; Dillman et al. 1980, 1981; Doane et al. 1936; Dobie & Wright 1978; Doidge 1967: 196, 1968: 109, 1969: 107, 1972: 4, 1973a: 7, 1973b: 4, 1975: 5, 1976: 3; Doidge & Koot 1977: 2, 1978: 4; Dolph 1971; Dolph & Hadfield 1971; Dolph & Pettinger 1968: 16, 1969: 7, 1971: 4; Dolph & Wear 1963; Dooling, Dewey, & Ciesla 1973: 29; Downing 1954; Dyer & Hall 1979; Dyer, M. I. & Kovacic 1977; Emerson 1982; Erickson & Wood 1979: 2; Escherich 1912a, 1913; Essig 1926: 514, 1958:

515; Evenden 1924; Felt 1924: 256, 1926: 248, 256, 1930a: 248, 256; Felt & Rankin 1932: 405; Fiddick 1967: 4, 1968a, 1968b: 6, 1969c, 1970b, 1970c: 4, 1971b, 1979, 1980: 2; Fiddick & Molnar 1966: 4; Fiddick, Molnar, & Harris 1966: 2; Fiddick & Van Sickle 1979: 3, 1980: 4, 1982: 4; Fiedler 1989; Finnis 1976; Flake 1973; Flake & Germain 1970: 24; Foiles 1972; Freeling & Seaver 1980; Frye 1971b: 26, 1974a, 1974b, 1975; Frye & Landis 1975; Frye et al. 1977: 1221; Fuchs & Borden 1985; Fuller 1983; Fuller & Hostetler 1980; Gara & Coster 1968: 77–86; Gara et al. 1985, 1986; Gates 1947: 7, 1948: 28–29, 1951: 38–40; Geiler 1975; Geistlinger 1967: 120, 1968: 127, 1969: 121; Gentry, G. R. et al. 1979: 806; Gerber, Tonks, & Ross 1983; Germain & Wygant 1967: 1–4; Gibson, K. E. 1977, 1978a, 1978b, 1978c, 1981, 1982a, 1982b, 1983, 1988a, 1988b, 1989a, 1989b; Gibson, K. E. & Bennett 1978, 1985; Gibson, K. E. & Dooling 1985; Gibson, K. E. & McGregor 1979; Gibson, K. E., McGregor, & Amman 1985; Gibson, K. E., McGregor, & Bennett 1980; Gibson, K. E., McGregor, & Dewey 1980; Gibson, K. E., McGregor, & Oakes 1985; Gibson, K. E. & Oakes 1987: 87; Gibson, K. E. et al. 1984, 1987, 1988; Gillette 1903: 118; Gillman & Bailey 1977, 1978: 6; Graham 1939b, 1952; Graham & Miller 1989; Grant, J. 1967b: 187, 1968a: 199, 1968b: 206, 1969b: 182; Grant, J., Lund, & Beddows 1970: 8; Gray & Borden 1989; Gregg, Filip, & Hadfield 1980: 37; Gregg, Goheen, & Bridgwater 1978: 42; Gregg & Hadfield 1978; Gregson 1978; Griffin, D. N. 1975; Grigel 1976; Guillette 1902; Guise 1976; Haeussler 1952: 145; Hagle et al. 1937: 37; Haight, Brodie, & Dahms 1985; Hall, P. M. 1989; Hall, P. M., Dyer, & McMullen 1978; Hall, R. C. & Davies 1968; Halperin 1976a; Hamel 1977, 1978, 1980: 708, 1989; Hamel & McGregor 1976b, 1976c; Hamel, McGregor, & Berg 1975a, 1975b; Hamel, McGregor, & Meyer 1974; Hamel, McGregor, & Oakes 1977a, 1977b, 1977c; Hamel & Oakes 1977a, 1977b, 1977c; Hamel, Oakes, & Hothem 1977; Hamel et al. 1975; Haneman 1983; Hanna 1937: 10; Haraden 1982; Harris 1982; Harris & Dawson 1979: 4; Harris, Dawson, & Brown 1982, 1983; Harris, Dawson, & Goodenough 1978; Harvey, E. G. 1967; Hawthorne 1965b; Heinricks 1983; Hellen et al. 1959: 1; Heller et al. 1959: 1–8; Helzner & Moyer 1979; Hester 1941: 8–9, 1968: 47; Hester & Edward 1939: 15–16; Hiratsuka, Cerezke, & Petty 1980: 7; Hiratsuka & Petty 1981: 73; Hiratsuka et al. 1982: 4; Hobbs 1985; Hobbs & Holland 1983; Hodges 1985; Hofacker & Loomis 1982: 3, 1983: 3; Hofacker, Loomis, & Gilstrap 1988: 7; Hofacker, Loomis, & Tucker 1984: 5, 1987; Hoffman et al. 1988: 2; Holland 1984; Holland & Tkacz 1984; Honing 1970: 21; Hopkins 1901a: 251, 1902b: 63, 1902c: 10, 1902d: 21, 1902e, 1903: 275–281, 1904a: 41–46, 1905c: 5, 22, 1906a, 1906c: 631, 1906d: 254, 1907c: 515, 1908c: 162, 1909b: 90–101, 1909c: 59, 76, 1909d: 574, 1910e, 1910f: 2, 1910g: 59, 76, 1912b: 4, 7; Hostetler 1978; Hostetler & Young 1979a, 1979b; Houseweart & Wygant 1971; Howard 1906: 13, 1909: 21; Hoyt 1950: 16, 1951b: 16, 1953: 21; Hynum & Berryman 1981; Isley 1941: 101–103; Ives & Wong 1988: 75; James & Linnane 1979, 1980; James et al. 1985; Jamieson 1968h; Johnson, D. W. 1982; Johnson, D. W. & Averill 1983; Johnson, D. W. & Creasap 1978a, 1978b; Johnson, D. W. & Curtis 1986; Johnson, D. W. & Minnemeyer 1976, 1977: 31; Johnson, P. C. 1967: 7, 1972; Johnson, P. C. & Schmitz 1965; Johnson, W. T. & Lyon 1976: 53; Katovich & Lavigne 1986: 222; Kaufmann & Stevens 1984; Keen 1938: 106, 1949b: 427, 1950: 147–148, 1952a: 688, 1952c: 129, 139, 1958b: 177–179; Keysor 1986a, 1986b, 1986c; Kinghorn 1955a: 501; Klein, W. H. 1966: 16, 1967, 1968, 1969, 1970, 1973a, 1973b, 1974, 1975a, 1975b, 1976a, 1976b, 1976c, 1976d, 1978, 1979a, 1979b, 1979c, 1982; Klein, W. H., Bennett, & Young 1978a, 1978b, 1978c; Klein, W. H. & McGregor 1966; Klein, W. H. & Parker 1970: 14; Klein, W. H., Parker, & Jensen 1978; Klein, W. H. & Stipe 1971: 13; Klein, W. H., Stipe, & Frandsen 1972; Klein, W. H. & Tegethoff 1970; Klein, W. H. et al. 1973: 24; Knapp 1985; Knapp et al. 1989: 3; Knight 1958a: 35, 1959a: 56, 1959b: 1–6, 1960b: 1199–1202, 1960c: 1–4, 1976; Knight & Wilford 1954: 3–4; Knight & Yasinski 1956: 1–4; Knopf, J. 1978, 1981; Knopf, J., Klein, & Tegethoff 1977: 18; Knopf, J. et al. 1978: 28; Kohler 1976; Kohler, Dooling, & Bousefield 1985; Kondo & Moody 1987: 17; Kondo & Taylor 1985: 9; Kovacic, Dyer, & Cringan 1985; Kulhavy, Partridge, & Stark 1978; Landgraf 1959: 1–19, 1966a: 25; Landgraf & Ostmark 1958: 3; Landis, Averill, & Frye 1977: 28; Lang et al. 1978; Laut 1981, 1985; Laut & Leatherman 1977; Lawson 1980; Lea et al. 1937: 318; Leach 1940b: 218; Lee 1989; Leng 1920: 338; Lessard 1978, 1979a, 1979b, 1979c, 1981b, 1982a, 1984a, 1984b, 1984c, 1985a, 1989; Lessard & Fuller 1981, 1982; Lessard & Johnson 1981; Lessard & Walters 1978: 23; Lindgren 1980a, 1983a, 1983b, 1988; Lindgren & Borden 1989; Lindgren et al. 1989; Linnane 1984; Lister 1971a, 1971b, 1972a, 1972b, 1973a, 1973b, 1973c, 1973d, 1973e, 1973f, 1973g, 1973h, 1973i, 1981, 1982; Lister & Cahill 1970: 22; Lister & Hildebrand 1984; Lister & Laut 1987; Lister & Letterman 1978; Lister & Young 1981; Livingston, R. L. 1979, 1989; Livingston, R. L. et al. 1988: 2; Loomis, Hofacker, & Tucker 1985: 7; Lotan & Perry 1983: 12; Loveless 1979; Lowe & Moyer 1980; Lucht 1966: 28, 29; Lucht & Moore 1963: 19; Lyon 1969; Lyon & Swain 1968: 1–4; MacLauchlan et al. 1988; Mahoney 1978b; Manning 1982; Manning et al. 1982; Marlatt 1928:

1–34; Martinsson 1978; Massey 1951, 1956a: 20; Massey, Wygant, & Washburn 1950; Massey et al. 1952: 861–862, 1953b: 601–604; Mata 1972; Mattson & Haack 1987; McBride, J. K. 1982; McCambridge 1967: 920–928, 1968b: 137–140, 1969: 1–3, 1972, 1974a, 1978, 1981, 1982a, 1982b; McCambridge, Amman, & Trostle 1979; McCambridge, Laut, & Gosnell 1975; McCambridge & Mata 1969: 507–512; McCambridge & Stevens 1982; McCambridge & Trostle 1972; McCambridge et al. 1982; McGregor 1972, 1973a, 1973b, 1973c, 1974, 1977a, 1977b, 1978a, 1978b, 1979, 1981, 1982a, 1982b, 1985, 1988; McGregor, Amman, & Cole 1981; McGregor, Bennett, & Meyer 1979; McGregor & Berg 1973; McGregor, Bousfield et al. 1974; McGregor & Cole 1985a; McGregor & Dewey 1971; McGregor & Ferry 1974; McGregor, Furniss et al. 1974; McGregor, Gibson, & Oakes 1982; McGregor, Hamel, & Lood 1976; McGregor, Hamel, & Meyer 1978; McGregor, Hamel, & Oakes 1977a, 1977b; McGregor, Hamel et al. 1978; McGregor & Kohler 1973; McGregor, Kohler, & Ferry 1974; McGregor & Lood 1970, 1973; McGregor, Mark et al. 1978; McGregor & Meyer 1973, 1983; McGregor, Oakes, & Meyer 1983; McGregor & Shipe 1975; McGregor & Tunnock 1971; McGregor et al. 1974, 1975a, 1977: 24, 1985, 1987, 1989; McGugan 1966; McLeod 1976; McMullen 1980; McMullen & Betts 1981, 1982; McMullen & Safranyik 1985; McMullen et al. 1986: 7; Metcalf & Flint 1951: 797; Michalson 1975; Michalson & Findeis 1979; Miller, J. M. 1924: 50, 1927a: 162; Miller, J. M. & Keen 1960: 146; Miller, R. H. & Berryman 1985; Miller, R. H., Berryman, & Ryan 1986; Miller, R. H., Whitney, & Berryman 1986; Mills 1983; Minnemeyer 1971a, 1971b, 1971c, 1971d, 1971e, 1971f, 1971g, 1971h, 1972a, 1972b, 1972c, 1972d, 1973a, 1973b, 1974; Mitchell, R. G. 1983, 1989; Mitchell, R. G., Martin, & Stuart 1983; Mitchell, R. G., Waring, & Pitman 1983; Moeck 1988; Moeck & Safranyik 1984; Mogren 1955: 1477, 1956b: 61–63, 1958: 1; Molnar, Harris, & Ross 1965: 96, 1967: 111; Molnar, Ross, & Fiddick 1971: 78, 1972: 83; Molnar et al. 1968: 110, 1969: 112, 1970: 100; Monts 1967: 79, 1968: 75, 1969: 82; Moody 1982, 1988: 15; Moody & Cerezke 1983: 7, 1984, 1985; Moore, J. A., Mahoney, & Schenk 1981; Morris, E. V. 1967: 151; Morris, E. V., Brown, & Wegwitz 1970: 4; Morris, E. V., Cottrell, & Wood 1979: 5; Mooris, E. V. & Monts 1972: 2, 1973a: 5, 1973b: 8, 1975: 16, 1976: 2; Morris, E. V. & Vanderwal 1968: 163; Morris, E. V. & Wood 1977: 4, 1978: 4; Moulson 1985d; Moyer 1977; Munns et al. 1928: 334; Murray, J. G. 1982; Murtha & Wiart 1987, 1989; Mutch 1981; Neal 1979: 805; Newton, M. & Holt 1971; Nielson 1986; Nielson & Mackay 1986; Nijholt & McMullin 1980; Nijholt, McMullin, & Safranyik 1981; O'Neil 1984, 1986, 1988; O'Neil & Lessard 1983, 1984; O'Neil & Sharon 1988: 11; Ollieu, Stipes, & Hoffman 1980: 26; Orr, P. W. 1954: 251, 1954: 2, 1963b, 1966; Orr, P. W., Pettinger, & Dolph 1965, 1966; Ostmark 1956: 3; Ostmark & Wilford 1956: 4–5, 13; Overhulser 1986; Owen 1986: 4; Page, Haverty, & Richmond 1985; Parker, D. L. 1971a, 1971b, 1973b, 1973c, 1973d, 1974, 1976, 1977, 1978, 1980; Parker, D. L. & Acciavatti 1975; Parker, D. L. & Stevens 1979; Parker, D. L. & Stipe 1974; Parker, D. L. et al. 1977: 35; Patterson, J. E. 1930: 3; Patterson, V. B. et al. 1973: 18; Payne & Wood 1981: 480; Pearson 1950: 154; Peirson 1922: 629; Peterman 1977; Peterson, R. M. 1982; Pettinger 1979; Pettinger & Dolph 1967: 13, 1969, 1970: 10, 1971: 6; Pettinger & Johnson 1973a: 1, 1973b: 9, 1974; Pierce, J. R. 1966: 14, 1970: 11, 1971: 12; Pierce, J. R. & Srago 1973: 15; Pierce, J. R., Srago, & Fujii 1977: 14; Pierce, J. R., Wood, & Fujii 1977: 15; Pitman 1970,1971; Pitman, Stock, & McKnight 1978; Plank 1984; Plank, Snellgrove, & Fahey 1986; Powell, J. M. 1966: 1–19, 1967: 189–201, 1969: 1–11; Poyner 1947: 24–25; Preston 1925: 51; Price 1955: 15–17, 1956: 21–24, 1957: 81–99; Pronos & Dale 1981; Pronos & Schultz 1984a, 1984b; Raffa 1988b; Raffa & Berryman 1982a, 1983a, 1986; Ragenovich 1979, 1980b: 20; Raimo & Haneman 1981; Raimo & Sharon 1981; Reed & Errico 1987; Reed, F. L. C. 1982; Richmond 1985; Robertson, J. 1979; Robinson, L. A. & Dooling 1978: 8; Roe & Amman 1970: 1–23; Rogers, S. W. 1976; Rogers, T. J. 1981; Rogers, T. J. & Hessburg 1985; Rogers, T. J. & Maffei 1987: 2, 1988: 2; Ross, D. A. 1965a: 8–10, 1965b; Ross, D. A., Baranyay, & Fiddick 1973: 84; Ross, D. A., Van Sickle, & Wood 1981: 81; Rost 1978; Rudinsky 1979a; Ruppel 1967: 32; Ryker & Rudinsky 1979: 209; Safranyik 1970a, 1976a, 1976b, 1976c, 1982a, 1982b, 1988a; Safranyik, Shrimpton, & Whitney 1974, 1976; Safranyik, Van Sickle, & Manning 1981; Safranyik & Whitney 1980; Safranyik et al. 1989; Salmon 1933; Sampson, Betters, & Brenner 1980; Sampson, Betters, & Love 1980; Sartwell, C. 1969: 255, 1971b, 1988; Sartwell, C. & Dolph 1976; Sartwell, C. & Stevens 1975; Schenk et al. 1980; Schlotz 1972; Schmid 1972a, 1976b, 1987; Schmid & Averill 1989; Schmid, Mata, & McCambridge 1985; Schmidt, W. 1982; Schmitz, R. F. 1984, 1988a, 1988b, 1989; Schmitz, R. F. et al. 1989; Schonherr 1976; Schultz & Kliejunas 1983; Schultz & Roettgering 1984; Schwandt et al. 1986; Schwarz 1902: 32; Seal 1964; Sharon & O'Neil 1985; Sharpnack & Wong 1982; Shea 1989; Shea & McGregor 1987; Shore et al. 1989; Shrimpton 1976, 1982, 1983; Shrimpton & Thomson 1981; Silver & Ross 1964b: 112, 1965a: 114; Skorheim & Kistler 1975; Smith, A. 1978, 1980, 1981; Smith, G. J. & Melvin 1974a, 1974b; Smith, G. W. 1953: 11; Smith, R. H. 1963b, 1969: 13, 1970: 1180–1181, 1976b, 1981, 1982; Smith, R. F.

& Huffaker 1973: 36, 1974; Smith, R. H., Trostle, & McCambridge 1977; Snyder 1949: 35–36, 1950: 75–78; Stark, R. W. 1973, 1978; Stark, R. W. & Cobb 1969: 13–15; Stark, R. W. & Waters 1985; Stark, R. W. et al. 1980; Sterner & Davidson 1981: 6, 1982, 1983: 11; Stevens 1981; Stevens, Brewer, & Leatherman 1980: 21; Stevens & Hall 1960; Stevens, McCambridge, & Edminster 1980; Stevens & Mitchell 1970: 1–4; Stevens et al. 1974; Stipe 1975a, 1976b; Stipe, Valcarce, & Tegethoff 1977: 20; Stipe et al. 1987; Stock, A. J. & Gorley 1989; Stock, M. W. & Guenther 1979; Stock, M. W., Guenther, & Pitman 1978; Strong 1936: 1–120, 1937: 20, 1938: 15, 1939: 23, 1940: 23–25, 1941: 492; Struble & Johnson 1955: 1, 1967: 1–4; Stuart 1984; Stuart et al. 1983; Sturgeon & Mitton 1986b; Sugden & Ross 1965; Swaine 1905: 631, 1906: 515, 1907: 548, 1908: 10–11, 1908: 574, 1909: 95, 1913: 90, 1914: 1–40; Swingler 1959: 44–45; Tanimoto 1978; Tearoe 1976; Tegethoff, Hinds, & Eslyn 1977; Telfer 1982; Terrell 1962; Thier & Beveridge 1979; Thier & Hoffman 1983; Thomas, P. R. 1986; Thompson, G. 1975; Thompson, J. 1984; Tilden 1985; Tripp 1976; Tripp & Blauel 1969: 104; Tripp, Ross, & Baranyay 1974: 78; Tripp, Ross, & Hunt 1975: 83; Tripp, Ross, & Van Sickle 1977: 75, 1978: 77; Troxell et al. 1980; Tunnock 1966: 20, 1970: 23; Tunnock & Dooling 1977: 27; Tunnock et al. 1984; Turnbull 1982; Unger 1975: 12, 1976, 1977, 1982; Unger & Fiddick 1979: 4; Valcarce 1978; Vandenburg 1989; Vanderwal 1969: 146; Van Sickle 1982, 1989; Vining 1982; Vite 1969, 1970b; Vogler & Dale 1982; Vogler & Schultz 1985; Wagner et al. 1979: 1135; Walsh & Keleta 1981; Walsh, Keleta, & Olienyk 1981; Walsh et al. 1981; Walters, J. W. & Lessard 1978: 11; Waring & Pitman 1985; Washburn & Knopf 1959; Waters 1985b, 1985c; Waters, Stark, & Wood 1985; Wear 1979; Weaver 1949: 26; Weber, F. P. 1970, 1976; Wellner 1978; White, W. B., Bousefield, & Young 1983; Whitney 1971, 1976; Whitney et al. 1978; Wilford 1965; Winquist & Vandenbrink 1982; Wood, C. S. & Van Sickle 1983: 9, 1987: 10, 1989: 10; Wood, C. S., Van Sickle, & Shore 1984: 79, 1985: 12; Wood, C. S., Van Sickle, & Humble 1987: 10; Wood, D. L. 1980b; Wood, D. L. et al. 1985; Wood, R. O. 1967: 104, 1968a, 1968b, 1969: 90, 1970, 1982; Wood, R. O. & Doidge 1971: 4, 1972: 3; Wood, R. O., Geistlinger, & Doidge 1970: 3; Wood, R. O. & Koot 1973a: 20, 1973b: 10; Wood, R. O. & Unger 1977: 2, 1978: 2; Wood, R. O. & Wood 1975: 8, 1976: 3; Woodward 1940: 49–51; Wortendyke 1968; Wright, K. H. 1965; Wygant 1938: 15, 1939: 14, 1942c, 1942d, 1945: 14, 1959: 274; Wykoff et al. 1947: 36; Yarger 1975, 1976; Yasinski 1956: 2–8; Yasinski & Pierce 1957: 6, 1958: 3, 9; Yuill 1940. (**ec**) Alfaro 1977; Amman 1970, 1972a, 1972c, 1973, 1976, 1977, 1984, 1989a; Amman & Baker 1972; Amman, Baker, & Stipe 1973; Amman & Baldwin 1960; Amman & Cole 1983; Amman, McGregor, & Dolp 1985; Amman & Pace 1976; Amman & Pasek 1986; Amman & Rasmussen 1969, 1974; Amman et al. 1977; Ashraf & Berryman 1969: 13, 1970: 206; Atkins 1966a: 286; Ayer et al. 1986; Baldwin, P. H. 1965: 79; Ball & Dahlsten 1973: 1455; Ballard, Walsh, & Cole 1982a, 1982b, 1984; Baltensweiler 1985; Barras & Hodges 1969: 492; Bartos 1988a, 1988b; Bartos & Amman 1989; Beal 1943; Bedard 1966a: 936; Berryman 1966b: 519, 1974: 583, 1976, 1978, 1987, 1988; Berryman, Stenseth, & Wollkind 1984; Billings & Gara 1975; Billings, Gara, & Hrutfiord 1976; Blackman 1931c; Brand et al. 1975; Buckhorn 1975; Bull 1983; Burks 1979: 799; Cabrera 1978; Callaham & Shifrine 1960: 146; Carter, S. W. 1978, 1982; Chamberlin 1939: 156–158, 1958: 72; Chapman 1969a; Cobb & Stark 1970: 147–149; Cobb et al. 1968; Cochran 1972; Cole, D. M. 1973, 1978; Cole, D. M. & Jensen 1980; Cole, W. E. 1962b, 1967, 1972b, 1973a, 1973b, 1973c, 1975, 1978b, 1981; Cole, W. E. & Amman 1980; Cole, W. E. & Jensen 1985; Cole, W. E. & Shepherd 1967; Craighead et al. 1927; Creasap 1977a; Crookston & Stark 1985; Dahlsten & Stephen 1974; Davidson 1958, 1979; DeLeon 1939: 13; Dyer, M. I. & Kovacic 1977; Fares, Sharpe, & Magnuson 1980a; Farmer 1965; Farris 1965a; Felix, Uhrenholdt, & Parmeter 1971: 1697; Francke-Grosmann 1931; Frye, Flake, & Germain 1974: 753; Frye & Landis 1975; Fuller 1983; Furniss, M. M. & Schenk 1969: 518–519; Furniss, R. L. & Carolin 1977: 353; Gara 1988; Gargiullo & Berisford 1981: 392; Geiler 1975; Geiszler et al. 1980; Gibson, K. E. & Bennett 1979; Goheen & Cobb 1975, 1980; Goheen et al. 1985; Graham 1939b, 1952; Graves 1899; Gray, B. et al. 1972; Grossman 1931a; Hamel & McGregor 1976a; Hanover 1975; Harvey, R. D. 1979; Hawksworth 1985; Hawksworth, Lister, & Cahill 1983; Helms, Cobb, & Whitney 1971; Hinds et al. 1984; Hofacker et al. 1989: 9; Hopkins 1903: 275–281, 1905c: 5, 22, 1909b: 90–101; Hopping 1950c: 74; Howard 1927: 25; Hunt, D. W. A. 1986; Hunt, D. W. A. et al. 1984; Hunt, R. S. & Morrison 1986; James, Stewart, & Williams 1984; Johnsen, Nagel, & Rudinsky 1965: 552; Johnson, D. W. 1982; Johnson, D. W. et al. 1976; Jones, R. & Brindley 1970: 313–316; Keen 1938: 106, 1950: 187, 1958b: 177; Kidd & Reid 1979; Kinn 1971; Knight 1959a: 56, 1960, 1960b: 1199; Knight & Yasinski 1956: 1; Korstian 1925: 448; Kovacic 1983b; Kovacic, St. John, & Dyer 1984; Kulhavy, Partridge, & Stark 1978, 1984; Langor 1989; Lea et al. 1937: 318; Leach 1940b: 218; Lessard 1981a, 1983; Lessard et al. 1985; Lindquist, E. E. 1970b, 1971; Livingston, R. L. 1980; Livingston, R. L. & Berryman 1972: 1793; Logan & Amman 1986; Lotan & Perry 1983: 12; MacVean & Brewer 1981; Marsh 1979: 169; Mason, W. R. M. 1978; Massey 1966a;

Massey & Wygant 1949; Mattson & Haack 1987; McAlpine 1964; McCambridge 1974b, 1980; McCambridge et al. 1982; McGhehey & Nagel 1966; McGregor & Cole 1985; McGregor, Williams, & Carlson 1977; Metcalf & Flint 1951: 797; Miller & Keen 1960: 146; Mills 1983; Mitchell, R. G., Waring, & Pitman 1983; Moeck & Safranyik 1984f, 1984g, 1984h; Mogren 1955b: 1477, 1956b: 61; Moody 1982; Morrison & Hunt 1985; Muesebeck 1942: 95, 1950: 131; Munns et al. 1928: 334; Nelson 1934: 328; Nelson & Beal 1929: 1101; Nickle & Welch 1984: 638; Olsen, R. C. 1969; Otvos & Stark 1985; Owen et al. 1987; Parent 1969: 112; Parker, D. L. & Davis 1971; Parker, D. L. & Stipe 1974; Parker, D. L., Stipe, & Tegethoff 1972; Patterson 1930: 3; Person 1928: 577, 1940: 391; Peterman 1977; Peterson 1978; Pettey & Shaw 1986; Pitman & Vite 1969; Poinar 1975: 155; Potts 1984; Powell, J. M. 1962, 1963, 1965, 1967, 1969; Powell, J. M., Wong, & Melvin 1972: 15; Raffa 1980, 1981, 1988b; Raffa & Berryman 1982c, 1983a, 1983b, 1987; Rasmussen 1974, 1976; Reid, R. W. 1957c: 111, 1969: 182–183; Reid, R. W. & Gates 1970: 617–622, 1972; Reid, R. W. & Shrimpton 1971; Reid, R. W., Whitney, & Watson 1967: 1115–1126; Rice 1968, 1969: 382–386; Richerson, J. V. & Borden 1972; Robinson-Jeffrey 1963; Roe & Amman 1970; Rumbold 1931c: 848, 1941: 589–601; Safranyik 1970c, 1971, 1974, 1976a, 1978a, 1989; Safranyik & Jahren 1970a, 1970b; Safranyik, Shrimpton, & Whitney 1974, 1975a; Safranyik & Vithayasai 1971; Safranyik & Whitney 1985; Schmid 1968a, 1968c, 1969a: 1237–1241, 1969b: 242, 1970b: 969–977, 1970c: 705–713, 1971, 1972b; Schmitt 1959: 35; Schmitz, R. F. 1988a, 1988b; Schmitz, R. F. et al. 1980, 1989; Schonherr 1971; Schrenk 1903: 9; Shepherd 1966; Shepherd & Cook 1962; Shrimpton 1973a, 1973b, 1974, 1975, 1978, 1983; Shrimpton & Reid 1973; Shrimpton & Thompson 1985; Shrimpton & Watson 1971; Shrimpton & Whitney 1968, 1979; Sigler, Whitney, & Carmichael 1982; Singh 1979: 97; Smith, R. H. 1965a: 440–442; Spaulding 1904: 76; Stakman 1957: 245; Stark, R. W. 1975, 1978; Stark, R. W. & Cobb 1969; Stark, R. W. et al. 1968; Stephen & Dahlsten 1976b: 290; Stevens 1981; Strongman 1987; Struble 1942a: 98, 1965; Sturgeon 1980b, 1980c; Sugden & Ross 1965; Swaine 1925c: 262; Taylor-Vinje 1940: 763; Terrell 1954b; Thompson, W. R. & Simmonds 1964: 27, 1965: 14; Thomson et al. 1983; Thomson, A. J. & Safranyik 1989;Thomson, A. J. & Shrimpton 1984; Tkacz & Schmitz 1986; Waring & Pitman 1983; Waters 1985b; Watson 1970: 1054–1056, 1971; Webber & Gibbs 1989; Whiteside 1935; Whitney 1965, 1971; Whitney, Bandoni, & Oberwinkler 1987; Whitney & Farris 1970; Whitney & Kharadly 1984; Whitney & Spanier 1982; Woodring 1966c; Wygant 1938, 1942a; Yamaoka, Swanson, & Hiratsuka 1987; Yuill 1937. (**hb**) Alfaro 1977; Amman 1969b, 1972b, 1973, 1975, 1976, 1977, 1978, 1980b, 1982a, 1982b, 1985a, 1989a; Amman & Cole 1983; Amman, McGregor, & Dolp 1985; Amman & Pace 1976; Amman & Pasek 1986; Amman et al. 1977; Anderson, R. F. 1960: 221; Anonymous 1963b; Baker, B. H. 1968; Beal 1937b; Beatty 1983; Bennett 1981; Berryman 1969a, 1974: 580, 1976b, 1982a, 1988; Berryman et al. 1978; Billings 1975; Billings & Gara 1975; Billings, Gara, & Hrutfiord 1976; Blackman 1931c: 9; Bongberg 1959a; Bright 1976d: 56; Bright & Stark 1973: 31; Browne 1968: 225; Browne, L. E. 1972; Brues 1920, 1947; Burke 1908; Burnell 1977; Carlson 1963; Carlson & Cole 1965; Carter, S. W. 1978, 1982; Chamberlin 1939: 156–158, 1958: 72; Cole, D. M. 1973; Cole, W. E. 1962b, 1972b, 1973a, 1975, 1976b; Cole, W. E., Amman, & Jensen 1976; Cole, W. E. & Shepherd 1967; Cole, W. E. & Weening 1967; Coulson & Witter 1984: 524; Coulson et al. 1978: 476, 1985; Craighead 1953; Creasap 1977a; Doane et al. 1936; Essig 1926: 514, 1958: 515; Fargo et al. 1979: 628; Felt 1926: 248, 256, 1930a: 248, 256; Felt & Rankin 1932: 405; Furniss, R. L. & Carolin 1977: 353; Gara, Geiszler, & Littke 1984; Geiler 1975; Geiszler, Gallucci, & Gara 1980; Geiszler & Gara 1978; Gerber, Tonks, & Ross 1983; Gibson, K. E. 1978a, 1985a, 1988b; Gibson, K. E. & Bennett 1978; Graham 1939b, 1952; Gray, B. et al. 1972; Gregson 1978; Hagle et al. 1987: 37; Hamel & McGregor 1976a; Hay 1956: 567–571; Higby 1981; Higby & Stock 1982; Holland 1984; Hopkins 1903: 275–281, 1904a: 41–46, 1905c: 5, 22, 1909a: 109–114; Hynum & Berryman 1980, 1981; Ives & Wong 1988: 75; Johnson, P. C. 1967; Jones, R. G. & Brindley 1970; Keen 1938: 106, 1952c: 129, 139; Klein, Parker, & Jensen 1978; Knight 1959a: 56, 1959b: 1, 1960b, 1960b: 1199; Langor 1988: 431, 1989; Larson et al. 1983; Lindgren 1980a: 62; Linton et al. 1987; Lotan & Perry 1983: 12; Mata 1972; McCambridge 1967a, 1967b, 1968b, 1969, 1970, 1971, 1974b, 1980; McCambridge, Amman, & Trostle 1979; McCambridge & Mata 1969; McCambridge & Trostle 1972; McGhehey 1969, 1971; McGregor 1985; McKnight, R. C. 1979a; McMullen et al. 1988; Metcalf & Flint 1951: 797; Miller & Keen 1960: 146; Mills 1983; Moody 1982; Parker, D. L. 1980; Parker, D. L. & Stevens 1979; Person 1928: 577; Person, H. L. 1940; Peterman 1974b; Pierce 1907: 294; Raffa & Berryman 1982a, 1986; Raffa 1980, 1981, 1988b; Rasmussen 1974, 1980; Rost 1978; Ryker & Rudinsky 1979: 209; Safranyik 1965, 1971, 1982b, 1989; Safranyik & Jahren 1970a, 1970b; Safranyik & Linton 1981c, 1985b; Safranyik, Shrimpton, & Whitney 1974; Safranyik & Vithayasai 1971; Safranyik & Whitney 1985; Safranyik et al. 1989; Sartwell, C. 1969; Schmid 1972b; Schmitz 1988a, 1988b; Schmitz et al. 1989;

Shepherd 1956, 1959, 1962, 1963, 1966; Shrimpton 1982; Shrimpton & Thomson 1983; Smith, G. W. 1953: 11; Smith, H. W. & Furniss 1966; Stark, R. W. 1978; Stevens, Brewer, & Leatherman 1980: 21, 1982: 22; Stevens et al. 1974; Stock, M. W. & Guenther 1979; Strongman 1987; Struble 1965; Struble & Johnson 1955: 1; Thompson, A. J. & Shrimpton 1984; Waters 1985b; White, R. E. 1983: 329; Whiteside 1936; Whiteside & Beal 1937; Whitney 1971; Wood, S. L. 1963: 57, 1982b: 171. (**ds**) Acciavatti & Walters 1977; Acciavatti & Weiss 1974; Amman 1972b, 1972c, 1973, 1977; Amman & Cole 1983; Anderson, R. F. 1960: 221; Anonymous 1958a: 4, 1960: 8, 1963y, 1964h, 1964u, 1965b, 1965r, 1966f, 1966u, 1967t, 1968g, 1968p, 1969e, 1969f, 1969m, 1970h, 1972t, 1973b, 1973n, 1974e, 1974f, 1975e, 1975f, 1975g, 1976e, 1976f, 1976g, 1976h, 1977g, 1977h, 1977i, 1977n, 1977x, 1978a: 35, 1978f, 1978g, 1978z, 1978h: 4, 1979a, 1979f, 1979e: 4, 1980a, 1980m: 30, 1981g, 1981j, 1982b, 1982c, 1983d, 1983f, 1984d, 1984f; Baker, B. H. 1969; Berryman 1969: 1033, 1976, 1988; Billings, Gara, & Hrutfiord 1976; Bongberg 1956a, 1957, 1960: 62; Bongberg & Bennett 1960: 1; Bright 1976d: 56; Bright & Stark 1973: 31; Browne 1968: 225; Chamberlin 1925, 1939: 156–158; Choo, Woo, & Kim 1981: 202; Cockerell et al. 1907; Cole, W. E. 1975; Cole, W. E., Amman, & Jensen 1976; Cole, W. E. & Shephard 1967; Craighead 1953; Currie 1905; Curtis & Johnson 1975; Dahlsten & Stephen 1974; Essig 1926: 514, 1958: 515; Evans, D. 1983: 32; Evans, D., Lowe, & Hunt 1978; Evenden 1924; Felt 1926: 248, 256, 1930a: 248, 256; Felt & Rankin 1932: 405; Frye et al. 1977: 1221; Furniss, M. M. & Furniss 1972; Furniss, R. L. & Carolin 1977: 353; Gast et al. 1989: 385; Gredley et al. 1922; Hagedorn 1910d: 22; Halperin 1976a; Hay 1956; Hopkins 1902c: 10, 1903a, 1909a: 109–114, 1909b: 90–101; Hynum & Berryman 1981; Johnson, W. T. & Lyon 1976: 53; Keen 1929a: 17, 1938: 106, 1952c: 129, 139; Kleine 1912b: 176, 1914b: 387, 1934a: 133; Klein, Parker, & Jensen 1978; Korstian 1925: 448; Kusch 1967; Marchant & Borden 1976; McCambridge, Amman, & Trostle 1979; McCambridge & Trostle 1972; Nijholt, McMullen, & Safranyik 1981; Peterman 1977; Raffa & Berryman 1982a, 1983a; Reid & Gates 1970; Rudinsky et al. 1974: 91; Ruppel 1967: 32; Safranyik 1976, 1989; Schedl 1978e: 37; Smith, G. J. & Melvin 1974a, 1974b; Smith, R. H., Cramer, & Carpender 1981; Still, Tidsbury, & Melvin 1974a: 13; Stock & Guenther 1979; Susut & Melvin 1974; Thomson, A. J. & Safranyik 1989; Watson 1970; Whitney 1971; Wong, H. R. & Petty 1978; Wood, S. L. 1963: 57, 1972a: 404, 1982b: 171. (**tx**) Amman 1982b; Amman & Cole 1983; Anderson, R. F. 1960: 221; Anonymous 1963b: 37, 1986f; Beatty 1983; Benoit 1985: 89; Bright 1976d: 56, 195, 200, 206; Chamberlin 1939: 156–157; Doidge 1975, 1976, 1977; Evans, D. 1983; Gregson 1978: 5; Hagedorn 1910a: 60; Hopkins 1902c: 10, 1902e, 1909a: 109–114, 1915c: 204; Ives & Wong 1988: 74; Johnson, D. W. & Creasap 1978: 16; Keen 1929a: 17; Kusch 1967: 10; Lotan & Perry 1983: 12; Nunberg 1928a: 145; Pardy 1983; Ryker & Rudinsky 1979: 209; Safranyik, Shrimpton, & Whitney 1974: 7; Sturgeon & Mitton 1986a; Swaine 1909: 98, 1918a: 65; Thatcher 1957: 28; Thomas, J. B. 1965c, 1967; Wood, S. L. 1963: 7, 13, 57, 1972a: 404, 1982b: 171. (**ms**) Amman 1982b; Amman & Rasmussen 1969, 1974; Anonymous 1974k, 1981v, 1983b; Ballard, Walsh, & Cole 1980; Barger, R. L. 1982; Bartos & Downing 1989; Beal 1927a, 1950; Bongberg 1959a; Brennan 1982; Browne, L. E. 1972; Burke 1930; Burnell 1977; Carey & Wilcox 197.; Carlson 1963; Carlson & Cole 1965; Chararas 1971a: 853; Ciesla 1974, 1978; Clark, W. R. 1978; Cole, D. M. & Jensen 1980; Cole, W. E. 1962a, 1962b, 1963a, 1963b, 1964a, 1964b, 1976a; Cole, W. E., Amman, & Jensen 1976; Cole, W. E. & Weenig 1967; Cook 1942: 4, 8; Craighead 1938, 1942b; Crookston 1978; Dahlsten & Dreistadt 1984; DeMars 1984; Dillman & White 1982a, 1982b; Dillman et al. 1980, 1981; Emerson 1982; Geiszler, Gallucci, & Gara 1980; Gregson 1978; Gries et al. 1988; Haraden 1982; Harris 1982; Harris & Dawson 1979: 4; Harris, Dawson, & Brown 1983; Harris, Dawson, & Goodennough 1978; Heinricks 1983; Hopkins 1908e: 347; Hunt 1988; Jamieson 1986c; Jones, R. G. & Brindley 1970; Keen 1952b: 49; Klein, W. H. 1970, 1973b, 1975a, 1976a, 1979b, 1982; Klein, W. H., Bennett, & Young 1978c, 1980; Klein, W. H. et al. 1978; Lessard, Hansen, & Eilers 1986; Linton et al. 1987; McCambridge et al. 1982; McGhehey & Nagel 1966; McGugan 1966; McMullen et al. 1988; Moeck 1988; Moody 1982; Mori & Igarashi 1988; Morrow 1972; Moulson 1985; Peterson, R. M. 1982; Pettinger 1979; Pollack & Pollack 1977; Reed, F. L. C. 1982; Reed, W. J. & Errico 1987; Robertson, J. 1979; Safranyik 1980, 1988a; Safranyik, Shrimpton, & Whitney 1975b, 1976; Safranyik et al. 1989; Schmid 1972a; Schmitt 1959: 35; Shrimpton 1974, 1976; Silverstein 1970b; Smith, H. W. & Furniss 1966; Stage 1973a, 1973b; Stahl 1939; Stevens, McCambridge, & Edminster 1980; Strickman & Drawbaugh 1982; Stuart 1984; Swaine 1925c: 262; Tegethoff, Hinds, & Eslyn 1977; Thalenhorst 1972: 36; Turnbull 1982; Van Sickle 1982; Vanderwal et al. 1988; Vite & Pitman 1969: 113; Wear 1979; Weaver 1949: 26; Weber, F. P. 1970; Weber, R. & Schurig 1984; Whitney 1976; Wingquist & Vandenbrink 1982; Young, W. 1982.

monticolae Hopkins 1905c: 11. Lectotype ♀; Kootenai, Idaho [USA]; USNM, Washington, designated by Wood 1982b: 171. Synonymy: Thatcher, T. O. 1957: 28, Wood 1963: 58.

References: (**ay**) Atkins 1966b: 983; Atkins & Farris 1962a; Cerezke 1964: 477; Hopkins 1909a: 105–109; Lyon 1958: 582–584; Reid 1958a: 464, 1961b; Robertson 1961; Stock, M. W., Amman, & Higby 1984. (**bv**) Anderson, R. F. 1977: 17; Cahill 1960; Callaham & Shifrine 1960: 146; Miller & Keen 1960: 102; Nuorteva 1956c: 97; Reid 1958a: 464, 1958d: 505, 1963a; Shepherd 1965: 213; Wood, D. L. 1962a: 473; Wood, D. L. & Vite 1961: 80; Zethner-Moller & Rudinsky 1967: 575–582. (**cn**) Anderson, R. F. 1948: 140, 1948: 596, 1960: 221; Annand 1941: 26, 1945: 7–8, 1946: 21, 30–31, 1947: 34, 1948: 596; Anonymous 1939: 643, 1940i: 580, 1941i: 811, 1955h: 50, 1955j: 3, 1958a: 3–4, 1960g: 9, 1960h, 1960i, 1960j: 1, 5, 6, 10, 13, 18, 1960q, 1960r, 1961e, 1961h, 1961i, 1961s, 1962h, 1962i, 1963e: 16, 1963j, 1963k, 1963y, 1965c; Bailey 1956: 30–31, 37–38; Baker 1924: 599; Balch, Webb, & Fettes 1955b: 453–465; Beal 1951: 58–59; Becker, G. 1951; Bedard 1938c: 35–40; Beeson 1918: 114–124; Benedict 1959: 245–249; Bongberg 1956a, 1957, 1962; Boocock 1959b; Boone 1925: 7, 57; Boyce 1923: 157–158, 1923a: 1–7, 1928; Brown, A. W. A. 1940b, 1942: 8, 1943: 8; Browne, G. S. 1953: 3, 1954; Brues 1920: 69; Brunner 1914: 4; Buckhorn & Orr 1985, 1961: 9, 1962: 10; Burke 1908, 1919: 123; Bushing & Wood 1964: 510; Caverhill 1925: 16–18; Chamberlin 1924, 1927a, 1927b, 1927c, 1939: 155–156, 1958: 71–72; Chrystal 1949b: 3–11; Clements 1953: 1–5; Cole, W. E. 1970; Cooley 1917: 94–102; Craighead 1925a: 348–349, 1927: 5–8, 1930: 4, 1931: 1009–1016, 1938, 1942: 368–386, 1947, 1948, 1949; Craighead & Middleton 1930; Craighead & St. George 1938: 26–34; Craighead et al. 1931; DeGryse 1943: 142, 1947: 3, 1949b; Doane et al. 1936; Dowden 1952, 1953, 1953: 216; Downing 1954; Dyer 1952; Eaton 1941: 710–713, 1956; Elliott 1924: 43; Ernst 1950; Escherich 1913; Essig 1926: 513, 1958: 514; Evans 1950: 107; Evans & Dyer 1951: 110; Evenden 1924a: 11, 63, 1924b: 593–595, 1925, 1930: 52–53, 1931: 391–393, 1934, 1935: 12, 1940: 12, 1943, 1948; Evenden & Gibson 1940: 271, 275; Evenden & Hopping 1924: 12, 43; Evenden & Struble 1945: 13–14; Evenden et al. 1943: 1–25; Farmer 1965: 1304–1305; Felt 1924: 255, 1926: 248, 255, 1930a: 248, 255; Felt & Rankin 1932: 405; Flint 1935: 5; Friend 1943; Furniss, R. L. 1943: 34; Furniss, R. L. & Struble 1946: 20; Gardiner 1942: 55, 1946: 75, 1947: 93–94, 1950: 105, 1955: 16–17; Gibson 1923: 16, 1931: 575, 1943: 396–398, 1957; Giese et al. 1958; Graham 1939b, 1952; Hall, R. C. 1937: 201–216, 1958b, 1961; Hall, R. C. & Eaton 1960; Hastings 1931: 17–19; Hatch 1938: 193; Hawthorne 1962, 1963, 1964; Heller, R. C. 1968b; Herrick 1935: 250; Hetrick 1940b; Hewitt 1915: 29, 1916: 851–876; Hoffmann & Merkel 1948: 467; Hopkins 1899b: 8, 14, 1901a: 251, 1902d: 21, 1902e, 1904a: 19, 42, 45–46, 1905c: 11, 1907c: 515, 1908d: 548, 1909b: 80–90, 1909c: 59, 1909d: 574, 1909f: 2, 1910g: 59, 1912b: 3–4, 1914: 132–133, 1917: 92, 1919: 506; Hopping, G. R. 1937: 62, 1946a: 1–8, 1947a, 1948, 1950b: 26–29, 74–75; Hopping, G. R. & Beall 1948: 141–145; Hopping, G. R. & Mathers 1945: 88–108; Hopping, R. 1921: 7, 11–12, 1922: 129, 1924a: 125–128, 1934 Hoyt 1952: 41; Inouye & Yamaguchi 1959: 1; Jaenicke 1921a: 448; Jemison 1956: 5, 45, 50, 1957: 32; Johnson 1940: 773–776, 1951b, 1958; Keen 1928: 33–36, 1929: 31, 1931: 430, 1933a: 13, 1938: 102–106, 1939: 5, 1949b: 427, 1950: 146, 1952a: 688, 1952c: 129, 135, 1958b: 176–179; Kenney et al. 1950: 73, 1951: 63; Kinghorn 1953: 4, 1955a: 501–504; Kolbe 1951: 15–16; Landgraf 1959: 1–19; Landgraf & Ostmark 1958: 3; Leech 1944: 63, 1945: 64, 1946: 62, 1947: 79–80; Lejeune 1959: 66–68; Lyon 1959b: 323–327, 1960, 1965: 59; MacNay 1947: 56; Marlatt 1931: 45–47, 1933: 23, 1934: 29; Martin 1937: 122; Martorell 1943: 132; Massey 1956a: 14; Mathers 1946: 120, 1947: 2, 5; McCambridge 1975b; McCambridge & Trostle 1970: 1–6; McGuffin 1949a: 105, 1950: 100, 1953: 116; McGuffin & Reid 1951: 99, 1952: 96; McGugan et al. 1959: 1–114; Metcalf & Flint 1951: 797; Miller, J. M. 1921: 1, 40, 1927a: 163, 1929: 994, 1931: 303–321, 1933: 443–446; Miller, J. M. & Keen 1960: 102; Moreno Noriega 1956: 20–31; Morse 1932: 430–432; Moss 1958: 704; Mote 1945b: 99; Munns et al. 1928: 334; Myers 1974; Offalax 1943: 186–189; Ogle 1920: 81; Orchard et al. 1952: 85; Orr, P. W. 1954: 2–3, 1963a; Orr, P. W. & Pettinger 1964; Osborne 1962: 1–6; Ostmark 1956: 6; Ostmark & Wilford 1956: 5, 13; Patterson, G. K. 1945: 149; Patterson, J. E. 1923: 38, 1927c: 1–9, 1929: 1–19, 1930: 2; Peirson 1941: 413; Powell, J. M. 1961; Prebble 1944: 34, 1954: 216; Preston 1925: 49–61; Price 1957: 81–84; Pronin 1952: 186; Randall 1952: 3; Reeks et al. 1945: 64, 1946: 62; Reid, R. W. 1961, 1963a; Richmond 1933: 60–61, 1947: 73, 1951: 53, 1953a: 86, 1953b: 48; Ringle 1940: 348–349; Rosecrans 1947: 9; Ross 1952: 3, 1954: 141; Ross & Jones 1951: 113–123, 1952: 109–110, 1953: 132–133; Rudinsky 1960a; Rumbold 1931: 847–873, 1941: 589–601; Rust 1935b: 688–691; Safranyik & Graham 1971; Salman 1933a: 134–136, 1938b: 120; Sand & Bryan 1947: 28; Scheller 1961; Schuder 1969: 79; Seal 1964; Sharp & Stevens 1962: 548–550; Silver & Ross 1955: 118, 1956: 94, 1957: 81, 1958: 75, 1959: 87, 1960: 97, 1961: 97,

1962b: 110, 1963a: 109; Smith, G. W. 1953: 11; Smith, J. H. 1941: 10; Stevens 1957a: 1–3, 1959a: 2; Strong 1935: 22, 1936: 22, 27, 1939: 22; Struble 1937d: 9, 1942: 702–709, 841–844, 1965: 7; Struble & Carpelan 1941: 153–156; Struble & Johnson 1955: 1–4; Swaine 1906: 515, 1907: 162, 1908: 574, 1910d: 42, 1913: 41–43, 1914: 20, 26–28, 1916: 632, 1918a: 61, 65, 1920b: 642, 1925: 261–266, 1928b: 501, 1933: 26; Terrell 1950: 1–18; Thatcher, T. O. 1961; Trappe & Harris 1958: 16; Tunnock 1973: 910; Twinn 1932: 149–168, 1934: 123, 1938: 133, 1942: 55–56, 1943: 70, 1943: 8–9; Van den Bosch & Telford 1964: Vite & Wood 1961: 67; Wear & Buckhorn 1955: 13; Weaver 1934: 101–103; Weir 1931: 128; Westveld 1939: 398, 418; Wheeler 1940: 636; Whiteside 1957: 2–3, 13–14, 31–40, 43; Wickman & Lyon 1962: 395–399; Wygant 1959: 274; Wykoff et al. 1947: 36; Yuill 1941: 702–709. (**ec**) Allen, J. 1959: 573–576; Andersch 1851; Anonymous 1964r, 1964v; Bakshi 1950; Berisford et al. 1971: 237; Bucher 1963: 133; Burke 1919; Burks 1979: 798; Bushing 1965: 459; Cahill 1960: 1–4; Callaham & Shifrine 1960: 146; Carlson & Cole 1965: 13; Carter 1933; Chamberlin 1939: 155–156, 1958: 71–72; Cole, W. E. 1962: 1–4, 1970; Craighead et al. 1927; Cushman 1931: 301–304; Davidson 1958; DeGryse 1947b; DeLeon 1933: 32–36, 1934a: 51–61, 1934b: 297–317, 1935a: 131–134, 1935c: 411–424; Dowden 1953; Eaton 1941; Galoux 1947b, 1947d; Goeden & Norris 1964b: 745; Graham 1939b, 1952; Grissell 1979: 764; Gyorfi 1952b; Haget 1950; Hirschmann 1978d; Hopkins 1905e: 11, 1909b: 80–90; Hopping, G. R. 1950c: 74, 1951: 21; Hopping, G. R. & Beall 1948; Hopping, R. 1928b; Howard 1927: 25; Keen 1938: 102, 1950: 186, 1958b: 176; Khan 1957a: 519–523; Kinghorn 1960b; Korstian 1925: 448; Lanier & Wood 1968: 517–526; Lindquist 1970b; Lindquist & Hunter 1965; Mason, W. R. 1978; Mathre 1964: 353–388, 1966; McAlpine 1964; Metcalf & Flint 1951: 797; Miller, J. M. 1929: 994, 1931: 313; Miller, J. M. & Keen 1960: 76, 106; Munns et al. 1928: 334; Nishiguchi 1970; Nuorteva 1959d: 193; Patterson 1927c: 3, 1929: 18, 1930: 2; Person 1928: 577, 1940: 391; Poinar 1975: 154; Reid 1955: 316, 1957c: 111, 1957d: 445, 1958b: 3; Reid, R. W. 1961, 1962b, 1962c, 1963a, 1963b, 1965; Richmond 1933: 60; Robinson & Grunchenko 1964: 527–532; Robinson, R. C. 1961, 1962: 609–614; Rudinsky 1962b, 1962c: 1–7; Rumbold 1941: 589; Rust 1933: 733, 1935b: 688; Safranyik & Graham 1971; Shepherd & Watson 1959: 2; Shifrine & Phaff 1956: 48; Smetana 1971: 152; Smith, R. H. 1963: 827–831; Stark, R. W. & Cook 1957: 376; Steiner 1932: 437–444; Stevens & Hawksworth 1970; Struble 1942a: 97, 1942d: 841, 1958: 1; Struble & Carpelan 1941: 153; Swaine 1925c: 262; Sweetman 1936: 107; Taylor-Vinje 1940: 763; Thomas, J. B. 1955: 341; Thompson, W. R. 1943: 39; Thompson, W. R. & Simmonds 1964: 109, 1965: 14; Thorne 1935: 131–144; Tsuneda et al. 1986; Wood, D. L. 1961a. (**hb**) Anderson, R. F. 1948, 1960: 221; Atkins & Farris 1962: 25; Bongberg 1959a; Brues 1920; Burke 1908; Cahill 1960; Cerezke 1964; Chamberlin 1939: 155–156, 1958: 71–72; DeLeon et al. 1934; Doane et al. 1936; Eaton 1956; Essig 1926: 513, 1958: 514; Evans 1952: 140; Evenden 1943; Felt 1926: 248, 255, 1930a: 248, 255; Felt & Rankin 1932: 405; Graham 1939b, 1952; Hay 1956, 1957: 567–571; Herrick 1935: 250; Hopkins 1899b: 8, 14, 1901e: 67, 1904a: 19, 42, 45–46, 1905c: 11, 1909: 105–109; Keen 1929: 31, 1938: 102, 1952c: 129, 135; Kozikowsky 1913: 341; Metcalf & Flint 1951: 797; Miller, J. M. & Keen 1960: 102; Nishiguchi 1970; Nuorteva 1956c: 97; Person 1928: 577; Reid, R. W. 1955: 316, 1956: 1, 1957a: 1–65, 1957d: 445, 1958a: 464, 1958b: 3, 1958d: 505, 1962a, 1962b, 1962c, 1969; Reid, R. W. & Gates 1970; Richmond 1933: 60; Salman 1933a: 134; Smith, G. W. 1953: 11; Stevens 1957a: 1; Struble 1937d: 9; Struble & Johnson 1955: 1; Swaine 1918a: 61, 65; Thatcher, T. O. 1961. (**ds**) Anderson, R. F. 1960: 221; Anonymous 1958a: 3–4, 1960: 9, 1962i, 1963j, 1963k, 1963y, 1964h, 1964u; Bongberg 1956a, 1957; Bongberg & Bennett 1960: 1; Brown, A. W. A. 1940a: 13; Brown, G. S. 1953, 1954, 1956; Bushing & Wood 1964: 510; Cerezke 1964: 477; Chamberlin 1917: 323, 1925, 1939: 155–156, 1958: 71–72; Craighead & Middleton 1930; Downing 1963: 7; Dyer 1952; Eaton 1956; Essig 1926: 513, 1958: 514; Evans 1952: 140; Evenden 1924, 1943; Felt 1926: 248, 255, 1930a: 248, 255; Felt & Rankin 1932: 405; Gredley et al. 1922; Hagedorn 1910d: 22; Hall & Eaton 1960; Hay 1956: 557–561; Hopkins 1903a, 1909a: 105–109, 1909b: 80–90; Hopping, R. 1922, 1924b; Keen 1929: 31, 1929a: 17, 1938: 102, 1952c: 129, 135; Kleine 1912b: 176, 1914b: 390, 1934a: 132; Knowlton 1958: 1–27; Leech 1946: 62, 1947: 79; Lejeune, McMullen, & Atkins 1961; Leng 1920: 338; MacKay 1948: 93, 1950: 113; McComb et al. 1953: 3; Patterson & Hatch 1945: 149; Peyerimhoff 1933b: 392; Reid 1961, 1962a, 1963a; Robinson 1961; Rosecrans 1947: 9; Ross & Jones 1953: 132; Schuder 1969: 79; Smith, G. S. 1929; Swaine 1909: 97, 1914: 20, 26; Thatcher, T. O. 1935: 261, 1961; Thomas, J. B. 1955: 341; Wood, S. L. 1948: 21, 1951a: 127. (**tx**) Anderson, R. F. 1960: 221; Chamberlin 1939: 155–156, 1958: 71–72; Hagedorn 1910a: 60; Hopkins 1902e, 1905c: 11, 1909a:

105–109; Jacques 1951: 351; Keen 1929a: 17; Muesebeck 1942: 95, 1950: 131; Swaine 1909: 97, 1918a: 61, 65, 67; Thatcher, T. O. 1957: 28; Wood, S. L. 1963: 57–58. (**ms**) Anonymous 1964v; Bongberg 1956b, 1959a; Boocock 1959b; Carter 1933; Cerezke 1962,1963; Chamberlin 1927a, 1927b, 1927c; Cole, W. E. 1970; Craighead 1938; Ernst 1950; Evenden 1925; Furniss, M. M. 1962a: 963; Hatch 1938: 193; McCambridge 1975b; Prebble 1944: 34; Swaine 1925c: 262.

***pseudotsugae* Hopkins** 1905c: 11. Neotype ♀; Grants Pass, Oregon [USA]; USNM, Washington, designated by Wood 1982b: 199.

Figures: Bedard 1950a: 3–7, Ives & Wong 1988: 79, Ryker & Rudinsky 1979: 204, Swaine 1914: 30 (adult), 1918a:pl. 12 (adult), Wood 1963: 9, 13.

Distribution: North America (SW Alberta, British Columbia in Canada/ Chihuahua in Mexico/ Arizona, California, Colorado, Idaho, Montana, New Mexico, Oregon, Utah, Washington, Wyoming in USA).

Hosts: *Pseudotsuga menziesii, P. macrocarpa,* less common in *Larix occidentalis, Tsuga heterophylla.*

References: (**ay**) Atkins 1966b, 1966c, 1967a, 1967b, 1969, 1975; Atkins & Chapman 1957: 80–86; Atkins & Farris 1958, 1962: 25–32, 1962a; Bennett & Borden 1971; Cerezke 1964: 488; Chapman 1955d: 2, 1969b, 1972; Chapman & Wilson 1956: 427–428; Dewey 1973: 180, 181; Dickens et al. 1984, 1985; Duncan, B. 1987; Fang & Allen 1955; Farris 1965a: 3–4; Farris & Ibaraki 1972; Furniss, M. M. 1967b; Furniss, M. M. & Tovar 1980; Godbee & Franklin 1978: 1087; Groberman & Borden 1982; Hopkins 1909a: 121–126; Hughes 1973c; Ibaraki & Sahota 1976; Jantz & Johnsey 1964: 233; Lyon 1958: 583; McCambridge & Mata 1969: 507; McMullen 1977; Nijholt & Sahota 1974; Pitman & Vite 1974; Ryan 1959: 520; Ryker, Libbey, & Rudinsky 1979; Safranyik 1967: 209; Sahota 1970, 1971, 1973, 1975; Sahota, Chapman, & Nijholt 1970; Sahota & Ibaraki 1973; Sahota, Peet, & Bartels 1984; Stock, M. W., Gregoire, & Furniss 1987; Thomas, J. B. 1967; Thompson, S. N. & Bennett 1971; Thong & Webster 1975a; Zethner-Moller & Rudinsky 1967b. (**bv**) Alcock 1982; Allen & Rudinsky 1959: 482–484; Allen, D. et al. 1958: 2–10; Annila 1971a: 11; Ashraf & Berryman 1969: 6; Atkins 1957a: 2–3, 1958, 1959: 328–329, 1959a: 164–165, 1959b: 283, 1960a: 941–954, 1960b, 1965a, 1965c: 3540, 1966a: 287, 1966b, 1967: 181–187, 1968, 1969; Atkins & McMullen 1958: 3, 1960, 1962; Baker, B. H., Hostetler, & Furniss 1977; Baker, B. H. & Trostle 1973; Bakke 1973; Barr, B. A. 1969: 640; Billings, Gara, & Hrutfiord 1976: 177; Borden 1967: 1182, 1971b; Borden & Bennett 1969: 782–785; Borden, Brownlee, & Silverstein 1968: 635; Borden & Groberman 1981; Borden, Silverstein, & Brownlee 1968: 597–603; Callaham & Shifrine 1960: 146; Chansler 1968a: 1–4; Chapman, J. A. 1954, 1955a: 4, 1955d: 2, 1963: 675, 1964b, 1966: 55; Chapman, J. A. & Dyer 1969: 31; Chararas et al. 1982: 1095; Clair 1977; Cole 1975; Des Champs 1962; Dickens et al. 1984, 1985; Du 1987; Dyer & Chapman 1965: 48, 1971; Eglitis 1980b; Fitzgerald & Nagel 1972; Franklin 1968; Furniss, M. M. & Orr 1970; Furniss, M. M. & Schmitz 1971; Furniss, M. M. et al. 1972, 1974, 1977, 1979, 1981; Gariullo & Berisford 1981: 392; Goeden & Norris 1965b: 774; Groberman & Borden 1981, 1982; Hanover & Furniss 1966; Hawksworth 1985; Heikkenen, Herman, & Hrutfiord 1965: 1457–1459; Heikkenen & Hrutfiord 1965; Hertel, Hain, & Anderson 1969: 1090; Hopping, G. R. 1942; Hughes 1973c; Hynum & Berryman 1980: 185; Inscoe 1982; Inscoe & Beroza 1976: 147; Jacobson 1965, 1972; Jantz 1965b, 1966; Jantz & Rudinsky 1965: 935–941, 1966: 3; Johnson, N. E. 1960a, 1962: 659, 1967: 199, 1963: 1–14; Johnson, N. E. & Pettinger 1961a: 6; Johnson, N. E., Wright, & Orr 1961: 13; Kimmey & Furniss 1943: 20; Kinzer et al. 1971; Klassen, Ridgway, & Inscoe 1982; Knopf, J. & Pitman 1972; Lejeune, McMullen, & Atkins 1961; Libbey, Dehlschlager, & Ryker 1983; Libbey et al. 1976; Lindgren et al. 1988; Look 1976a, 1981; Madden et al. 1988; Mathews & Mathews 1978: 196; McCambridge 1962; McGregor et al. 1984; McLean & Borden 1977: 677; McMullen & Atkins 1959: 416–426, 1962, 1962b: 1310; Michael & Stone 1958: 11–18; Miller, J. M. & Keen 1960: 99; Mori & Ogoche 1988; Mori et al. 1978; Nijholt, McMullen, & Safranyik 1981; Payne & Wood 1981: 480; Perttunen 1959: 65; Pitman 1973; Pitman, Hedden, & Gara 1974; Pitman & Vite 1970: 661–664, 1974; Plummer et al. 1976; Reed & Hanover 1985; Reed, Hanover, & Furniss 1986; Reid 1958d: 506; Renwick & Vite 1968: 65–68; Ringold et al. 1975; Roelofs 1978; Rudinsky 1963: 23, 1966a: 98, 1966b: 356–361, 1966c: 218–219, 1968b: 248–250, 1969b: 884–885, 1969c, 1970: 249–350, 1973a: 511, 1973b, 1979a; Rudinsky & Daterman 1964a: 1339–1352; Rudinsky, Kline, & Diekman 1975; Rudinsky & Michael 1972, 1973; Rudinsky & Ryker 1976, 1977, 1979, 1980; Rudinsky & Terriere 1959: 485–488; Rudinsky & Vite 1956: 258–267; Rudinsky et al. 1972, 1973, 1974a, 1976a, 1976b; Ryan 1959: 520, 1961: 1308–1309, 1962: 403–409, 1962: 737–738, 1965: 1331–1336; Ryker 1988; Ryker, Libbey, & Rudinsky 1979; Ryker & Rudinsky 1976c; Schneider & Rudinsky 1969: 1181; Shepherd 1965: 213; Shorey 1972; Silverstein 1977; Silverstein & Young 1976: 20; St. Clair, Goulding, & Rudinsky 1977; Stock & Borden 1983: 549; Trostle 1971; Vite 1970b: 249–350, 1975; Vite & Pitman 1967: 683–701; Vite et al. 1972; Weaver, N. 1978a; Wood, D. L. 1967b, 1968, 1970, 1978, 1980b; Wood, D. L. &

Bushing 1963: 1076; Wright, K. H. & Lejeune 1967; Wright, L. C., Berryman, & Wickman 1984; Zethner-Moller & Rudinsky 1966, 1967a: 897–911, 1967b: 575–582, 1971d; Zhong & Schowalter 1989. (**cn**) Allen & Rudinsky 1959; Amman 1976; Amman & Rasmussen 1969: 631; Anderson, R. F. 1960: 228; Andrews 1967: 147, 1968a: 141, 1968b: 146, 1969b: 135; Andrews & Erickson 1973b: 17, 1976: 7; Andrews & Monts 1977: 5, 1978: 2, 1979: 3; Andrews & Vanderwal 1971: 3; Andrews, Vanderwal, & Baumann 1969: 136; Andrews, Vanderwal, & Wood 1970: 4; Anhold 1986; Anonymous 1939: 643, 1940i: 580, 1952a: 52, 1955j: 2, 1956b: 110, 1958a: 3, 5, 1960g: 9, 1960h, 1960j: 1, 1960q, 1960r, 1961e, 1961h, 1961i, 1961s, 1962h, 1962i, 1962p, 1963: 17, 1963j, 1963k, 1963q, 1963y, 1964h, 1964i, 1964u, 1965b, 1965c, 1965r, 1966f, 1966i, 1967e, 1967f, 1967h, 1967t, 1968g, 1968h, 1968p, 1969e, 1969f, 1969m, 1970h, 1970t, 1971d, 1971f, 1971i, 1971j: 4, 1971v, 1971aj, 1972f, 1972h, 1972t, 1972y, 1973c, 1973n, 1974f, 1974v, 1975d, 1975f, 1975g, 1975t, 1975y, 1976f, 1976g, 1976h, 1977g, 1977h, 1977i, 1977n, 1977x, 1978a, 1978b: 34, 1978f, 1978g, 1978h: 4, 1978z, 1979a, 1979e: 4, 1979f, 1980k, 1981j, 1981v, 1982b, 1983f, 1984d, 1984f, 1985i, 1986b, 1987e, 1988b; Bailey 1955, 1957: 32–33, 1958: 25–27, 34; Baker, B. H. 1969; Bakke 1973; Balch, Webb, & Fettes 1955a: 453–465, 1955b: 3–9; Bare & Philipps 1976; Bauman 1967: 168, 1968: 184, 1969: 158; Beal 1939: 6, 1950: 58; Beal et al. 1935: 14, 1955; Beatty 1983; Bedard 1933a, 1937b: 103–105, 1950a; Beddows 1968: 220; Bedford 1969: 23; Beeson 1918; Belluschi & Johnson 1969: 30–32; Belluschi, Johnson, & Heikkenen 1965: 252–256; Bennett 1983; Bongberg 1956a, 1957, 1962; Bousfield & Coulson 1978; Bousfield, Hagle, & Kohler 1988; Brown, A. W. A. 1940b; Brown, C. E., Hopkins, & Robins 1960: 84; Brown, C. E., Robins, & Stevenson 1960: 85, 1961: 85; Brown, C. E. & Stevenson 1963: 97, 1964: 99; Browne 1968b: 226; Brunner 1915: 5; Buckhorn & Orr 1958, 1959, 1961: 14; Byler et al. 1986; Cahill & Lister 1971; Cahill, Lister, & Brown 1973; Caverhill 1925: 17; Cerezke & Emond 1989: 19; Chamberlin 1918: 17, 1925, 1939: 159–161, 1958: 73–75; Chansler & Pierce 1966: 1357–1359; Ciesla, Dewey, & Tunnock 1971: 17; Ciesla & Koot 1976; Ciesla et al. 1971; Cornelius 1954: 50–51, 1955: 711–712; Cottrell 1967: 88, 1968: 30, 1969: 32, 1973: 7; Cottrell & Adams 1973; Cottrell & Doidge 1972: 5; Cottrell & Erickson 1977: 4; Cottrell & Fiddick 1962, 1968, 1972; Cottrell & Koot 1975; Cottrell & Monts 1970a, 1970b; Cottrell, Unger, & Fiddick 1979: 22; Cottrell & Wood 1971: 3; Coulson & Witter 1984: 527; Cowan & Nagel 1965: 32; Cowlin 1956: 35–37, 1957: 25, 1958: 11, 15; Craighead 1927: 11, 1930: 5, 1947; Craighead & Middleton 1930; Craighead et al. 1931: 1016; Curtis & Hadfield 1975, 1977a, 1977b; Curtis & Johnson 1978; Des Champs 1962; Dewey & Clinton 1980; Doane et al. 1936; Doidge 1968: 109, 1969: 107, 1972: 2, 1973a: 7, 1973b: 3, 1975: 3, 1976: 6; Doidge & Koot 1977: 11, 1978: 11, 1979: 5; Dolph & Hadfield 1971; Dolph & Pettinger 1968: 25, 1969: 6, 1971: 3; Dolph et al. 1975; Dooling, Dewey, & Ciesla 1973: 29; Dyer 1952; Edmonds & Eglitis 1989; Edwards, B. M. 1982; Erickson & Wood 1979: 5; Escherich 1912a, 1913; Essig 1926: 514, 1958: 515; Evans, D. 1949: 106; Evans, D. & Dyer 1951: 110, 1952: 108, 1953: 130; Evans, D. & Silver 1954: 139; Evenden & Wright 1955: 1–4; Fang & Allen 1955: 79–82; Felt 1924: 258, 1926: 247, 248, 258, 1930a: 247, 258; Felt & Rankin 1932: 405; Fiddick 1968a: 5, 1968b: 6, 1969a, 1969c, 1970a, 1970b, 1970c: 4; Fiddick & Germain 1970: 25; Fiddick & Molnar 1966: 4; Fiddick, Molnar, & Harris 1966: 3; Fiddick & Van Sickle 1979: 6, 1980: 11, 1982: 13; Fuller & Hostetler 1980; Furniss, M. M. 1958: 43–44, 1959: 1–6, 1962b: 1–10, 1962c: 486–491, 1967: 1323–1326, 1968: 1384–1389; Furniss, M. M., Livingston, & McGregor 1981; Furniss, M. M. & Orr 1970: 1–4; Furniss, M. M. & Schenk 1969; Furniss, M. M. et al. 1977, 1979, 1981; Furniss, R. L. 1936, 1937: 11, 1937: 103–105, 1941: 211–213, 1941a: 1–5, 1941b; Gardner 1956: 17; Geistlinger 1968: 127, 1969: 121, 1976: 120; Gentry, G. R. et al. 1979: 771; Gerber, Tonks, & Ross 1983; Germain, Weiss, & Loomis 1973b: 41, 1978a; Gibson 1923: 16, 1957: 266–268; Gibson et al. 1984, 1987; Giese et al. 1958; Gillman & Bailey 1977, 1978: 7; Glascock 1953: 45–46; Graham 1939b, 1952; Grant, J. 1967b: 187, 1968a: 199, 1968b: 206, 1969b: 182; Grant, J., Lund, & Beddows 1970: 3; Gregg, Filip, & Hadfield 1980: 38; Hagle et al. 1987: 38; Hagenstein & Furniss 1955: 167–168; Hall, P. M., McLean, & Murtha 1983; Hall, R. C. 1961; Hall, R. C. & Eaton 1960; Hamel 1980: 754; Hamel et al. 1975; Harris & Dawson 1979: 6; Hatch 1938: 193; Hawthorne 1962, 1963, 1964, 1965b; Hayes 1959: 1–54; Hedden & Gara 1976; Hedden & Pitman 1978; Heller, R. C. 1968a; Helzner & Moyer 1979; Herrick 1935: 138; Hofacker & Loomis 1982: 3, 1983: 3; Hofacker, Loomis, & Gilstrap 1988: 15; Hofacker, Loomis, & Tucker 1984: 4, 1987; Hofacker et al. 1989; Hoffman 1924: 53, 1948; Hoffman, J. et al. 1988: 7; Holbrook 1948; Holland & Tkacz 1984; Honing 1970: 21; Hopkins 1899b: 10, 15, 21, 22, 26, 1901a: 251, 1904a: 19, 45, 47, 1905c: 11, 1906a, 1907c: 515, 1908d: 549, 1909b: 106–114, 1909c: 59, 1909d: 574, 1910e, 1910f: 3, 1910g: 59, 1912a, 1912b: 4, 6; Hopping, G. R. 1942: 205, 1947b: 150–153; Hopping, R. 1904: 19, 45, 1921: 9–10, 1922: 131, 1932: 61, 1934, 1937: 62; Hoyt 1953: 21; Hunt 1954: 14; Ishikura 1966; Ives 1972: 12; Jaenicke 1927: 162; James & Gogeen 1981; James et al. 1985; Jardine 1968: 47, 1969:

49; Johnsey 1984; Johnson, D. W. & Creasap 1978a, 1978b: 18; Johnson, D. W. & Curtis 1986; Johnson, D. W. & Minnemeyer 1976, 1977: 32; Johnson, N. E. 1960a, 1960b: 1; Johnson, N. E. & Belluschi 1969: 290–295; Johnson, N. E. & Molatore 1961: 928–931; Johnson, N. E., Orr, & Wright 1959: 1–3; Johnson, N. E. & Pettinger 1961a: 1, 1961b; Johnson, N. E., Wright, & Orr 1961; Johnson, Philip C. 1958; Johnson, W. T. & Lyon 1976: 53; Keen 1938: 119–122, 1952a: 689, 1952c: 129, 155, 1958: 175–179; Khan 1960: 91–97; Kimmey et al. 1951: 63; Kinghorn 1953: 4, 1955a: 501–504, 1957: 3–4, 1960a, 1961; Kinghorn & Webb 1950: 3; Klein, W. H. 1966: 17, 1967, 1968; Klein, W. H. & McGregor 1966; Klein, W. H. & Parker 1970: 14; Klein, W. H. & Tegethoff 1970; Klein, W. H. & Stipe 1971: 14; Klein, W. H. et al. 1973: 24; Knapp 1985; Knapp et al. 1989: 5; Knight & Wilford 1954: 4; Knopf, J. 1978, 1981; Knopf, J., Klein, & Tegethoff 1977: 19; Knopf, J. et al. 1978: 30; Kohler, Dooling, & Bousefield 1985; Kondo & Moody 1987: 105; Landgraf 1959: 1–19, 1966a: 27; Landgraf & Ostmark 1958: 6; Landis, Averill, & Frye 1977: 30; Leach 1940b: 224; Leech 1946: 63, 1947: 80; Lejeune 1956: 80–82; Lejeune, McMullen, & Atkins 1961; Lessard & Fuller 1981; Lindgren 1980a: 62, 1988; Lindgren et al. 1988; Linnane 1984; Lister & Cahill 1970: 22; Lister & Hildebrand 1984; Livingston 1987a; Livingston et al. 1988: 3; Loomis, Hofacker, & Tucker 1985: 12, 1986; Lowe & Moyer 1980; Lucht 1966: 29; Lucht & Moore 1963: 18; MacKay 1948: 94, 1949: 114, 1950: 114, 120, 1955: 149; Mahaffay 1948: 64–65; Manville, McMullen, & Reimer 1988; Massey 1956a: 23, 1956b: 110; Mathers 1951: 3; McArdle 1956: 12; McGregor, Bousfield, & Almas 1972; McGregor, Oakes, & Dooling 1983; McGregor, Oakes, & Meyer 1985; McGregor et al. 1974, 1977: 24, 1984, 1985; McGugan 1959: 1–114, 1966; McMullen 1970: 46, 1977; McMullen & Atkins 1961: 197–203, 1962b; Miller, J. M. 1929: 994; Miller, J. M. & Keen 1960: 99; Mills 1983; Mitchell, R. G. & Sartwell 1974; Molnar 1962b: 121; Molnar, Harris, & Ross 1965: 96, 1967: 111; Molnar, McMinn, & Foster 1963; Molnar, Ross, & Fiddick 1971: 78, 1972: 83; Molnar et al. 1968: 113, 1970: 99; Moody 1988: 76, 81; Morris, E. V. 1967: 161; Morris, E. V., Cottrell, & Wood 1979: 4; Morris, E. V. & Monts 1972: 7, 1973a: 9, 1975: 16, 1976: 3; Morris, E. V. & Wood 1977: 4, 1978: 3; Morris, E. V. & Vanderwal 1968: 172; Moyer 1977; Neal 1979: 771; Nijholt, McMullen, & Safranyik 1981; O'Neil & Sharon 1988: 7; Ollieu & Mason 1968: 13; Ollieu, Stipe, & Hoffman 1980: 26; Orr, P. W. 1954: 1–2, 1954: 251, 1963a, 1963b, 1966; Orr, P. W. & Pettinger 1964; Orr, P. W., Pettinger, & Dolph 1965, 1966; Ostmark 1956: 4, 1957: 1–14; Ostmark & Wilford 1956: 5, 13; Overhulser 1986; Owen 1986: 8; Parker, D. L. 1971a, 1973b, 1974; Parker, D. L., Stipe, & Tegethoff 1972; Patterson, V. B. et al. 1973: 18; Payne & Wood 1981: 480; Pettinger 1979; Pettinger & Dolph 1967: 21, 1969, 1970: 9, 1971: 6; Pettinger & Johnson 1973a: 1, 1973b: 9, 1974; Phipps 1957: 29–30; Pierce, J. R. 1966: 13, 1977: 10; Pierce, J. R. & Srago 1973: 15; Pierce, J. R., Srago, & Fujii 1977: 14; Pitman 1973; Pitman & McKnight 1978; Pitman & Vite 1970; Prebble 1944: 34, 1954: 220; Priaulx 1953: 20; Price 1956: 21–22, 1957: 81–86, 1958: 58–59, 67; Richmond 1953a: 42–43, 1953b: 48, 1953c: 86–87; Richmond & Kinghorn 1951: 31; Ringold et al. 1975; Robinson, L. A. & Dooling 1978: 9; Roelofs 1978; Rogers, T. J. 1981; Rogers, T. J. & Hessburg 1985; Ross, D. A. 1954: 142, 1967: 23–24; Ross, D. A., Baranyay, & Fiddick 1973: 85; Ross, D. A. & Jones 1951: 114, 1953: 133; Ross, D. A., Van Sickle, & Wood 1981: 83; Rudinsky 1960a, 1966a, 1979a; Rudinsky & Terriere 1959: 485; Rudinsky, Terriere, & Allen 1960: 949–953; Rudinsky et al. 1973; Ruppel 1967: 33; Ruppel & Pass 1970; Ryan & Rudinsky 1962; Ryker & Rudinsky 1979: 205; Safranyik 1979; Sahota & Peet 1988; Schabel 1971; Scheller 1961; Schmid 1976b; Schmidt, F. H. 1966: 1050–1055; Schuder 1969: 81; Schwandt et al. 1986; Sharon & O'Neil 1985; Shorey 1972; Silver & Ross 1956: 93–94, 1957: 81, 86, 1958: 75, 1959: 87, 1960: 96, 1961: 97, 1962b: 210, 1963a: 108, 1964b: 111, 1965a: 114; Skovsgaard 1968, 1972; Smith, A. H. 1978, 1979, 1980; Smith, A. H. & Johnsen 1985; Smith, G. J. & Melvin 1974a, 1974b; Smith, G. W. 1953: 14; Smyth 1959: 278; Sterner & Davidson 1981: 35, 1983: 49; Stevens 1981; Stevens & Hall 1960; Stipe, Valcarce, & Tegethoff 1977: 21; Stipe et al. 1987; Swaine 1910d: 42, 1913: 41–43, 1913: 90, 1914: 40, 1918a: 61–62, 1925: 261–266; Telfer 1982; Thier & Hoffman 1983; Tripp, Ross, & Baranyay 1974: 79; Tripp, Ross, & Hunt 1975: 84; Tripp, Ross, & Van Sickle 1977: 76, 1978: 79; Tunnock 1963: 10, 1966: 21; Tunnock & Dooling 1977: 28; Tunnock et al. 1984; Unger 1975, 1976, 1977; Unger & Fiddick 1979; Van den Bosch 1968; Vite 1970b; Wallis, Godfrey, & Richmond 1974: 7; Walters, J. 1956: 1–11, 1958: 326–327; Walters, J. & Campbell 1955: 3–4; Walters, J. W. & Lessard 1978: 11; Wear 1979; Wear & Buckhorn 1955: 13; Wear & Dilworth 1955: 88; Wear & Lauterbach 1956: 169–171; Wear, Pope, & Lauterbach 1964; Wert & Roettgering 1968: 42; Whiteside 1957: 2–43, 1958: 295–302; Wood, C. S. & Van Sickle 1983: 21, 1987: 17, 1989: 18; Wood, C. S., Van Sickle, & Humble 1987: 19; Wood, C. S., Van Sickle, & Shore 1984: 7, 1985: 19; Wood, D. L. 1980b; Wood, R. O. 1967: 104, 1968a, 1968b: 88, 1969: 90; Wood, R. O. & Doidge 1971: 3, 1972: 11; Wood, R. O., Geistlinger, & Doidge 1970: 3; Wood, R. O. & Koot 1973a: 19, 1973b: 13; Wood, R. O. & Unger 1977: 6, 1978: 6; Wood, R. O. & Wood 1975: 7, 1976: 3; Wright 1952: 53–54;

Wright, E. & Wright 1954: 1–12; Wright, K. H. 1965, 1967: 17–20; Wright, K. H. & Harvey 1967: 4, 20; Wright, K. H. & Lauterbach 1958; Wright, K. H. & Lejeune 1967; Wygant 1959: 274; Wykoff et al. 1947: 29; Yasinski 1956: 1, 3; Yasinski & Pierce 1957: 8, 1958: 3–4, 9–13; Zethner-Moller & Rudinsky 1967: 903. (**ec**) Alfaro & Borden 1980: 1260; Amman 1970, 1972c: 528; Annila 1969: 182; Annila & Perttunen 1964: 42; Anonymous 1962p, 1971g; Ashraf & Berryman 1969: 11, 1970: 203; Atkins 1957a: 106, 1961: 467, 1966b: 953–991, 1966c: 3, 1967; Atkins & McMullen 1958, 1960, 1962; Baker, B. H. & Trostle 1973; Bedard 1933a, 1938: 189–197; Belluschi & Johnson 1969; Borden & McClaren 1970; Brunner 1915; Burke 1905; Burks 1979: 799; Bushing 1965: 459; Callaham & Shifrine 1960: 146; Castello, Shaw, & Furniss 1976; Chamberlin 1918a, 1939: 159–161, 1958: 73–75; Chansler 1968a; Cobb et al. 1968; Cole 1973: 286, 1975; Coster & Gara 1968: 69–76; Cowan & Nagel 1965; Craighead et al. 1927; Crockett & Hansley 1978; Cross & Moser 1971; Dahlsten & Herman 1965; Davidson 1958; DeLeon 1934b; Deyrup 1975; Deyrup & Gara 1978: 274; Dyer, Shovsgaard, & McMullen 1968: 15–16; Farris 1965b; Fitzgerald & Nagel 1972; Foltz et al. 1976: 342; Furniss, M. M. 1964, 1965b: 8–11, 1966, 1967, 1968; Furniss, M. M. & Orr 1970; Furniss, M. M. & Schenk 1969; Furniss, M. M. & Tovar 1980; Furniss, M. M. et al. 1974, 1977, 1979; Furniss, R. L. 1936, 1941a; Furniss, R. L. & Carolin 1977: 357; Galoux 1947b, 1947d; Gara & Coster 1968: 77–86; Gargiullo & Berisford 1981: 392; Graham 1939b, 1952: 42, 1956; Gregg, Goheen, & Bridgwater 1978: 43; Gregg & Hadfield 1978: 20; Grissell 1979: 764; Gyorfi 1952b; Hagen & Caltagirone 1969: 241–248; Hanover 1975; Hanover & Furniss 1966: 23–28; Harrington, Furniss, & Shaw 1981; Harrington, Shaw, & Furniss 1981; Harwood & Rudinsky 1966: 36; Hawksworth 1985; Hedden & Gara 1976; Hirschmann & Wisniewski 1982, 1983; Hopkins 1905c: 11, 1909b: 106–114; Hopping, G. R. 1947b; Hurlbutt 1967; James & Goheen 1981; James, Stewart, & Williams 1984; Johnsey, Nagel, & Rudinsky 1965; Johnson, N. E. 1958: 5, 1960a, 1963b, 1967: 199; Johnson, N. E. & Belluschi 1969; Johnson, N. E. & Pettinger 1961a; Johnson, N. E., Wright, & Orr 1961; Kaston 1939: 11; Kaya 1984; Keen 1938: 119; Khan 1957a: 519–523, 1957b: 637, 1960; Kinghorn 1957a: 3; Kinn & Witcosky 1978: 249; Kline & Rudinsky 1964: 1–52; Leach 1940b: 224; Lindquist, E. E. 1971; Lu et al. 1956: 35, 1957: 336–343; MacKay 1955: 149; Marsden, Furniss, & Kline 1981; Marsh 1979: 158; Mason, W. R. M. 1978; Massey 1966a, 1967: 779–786, 1969b: 43–52; Matthews 1970; McAlpine 1964; McGregor, Williams, & Carlson 1977; McMullen 1956: 3–4, 1964, 1966, 1977; McMullen & Atkins 1962a: 17, 1962b; McMullen & Walters 1956: 2–3; Miller, J. M. 1929: 994; Miller, J. M. & Keen 1960: 99; Mills 1983; Mitchell, R. G. & Sartwell 1974; Nagel, W. P. & Fitzgerald 1975; Nuorteva 1959d: 193; Parent 1969: 112; Perttunen 1959: 65; Pitman 1973; Poinar 1975: 155; Purrini 1977a; Reid 1957c: 111, 1963a: 229; Richerson, V. V. & Borden 1971, 1972a, 1972b; Ross, D. A. 1967; Rudinsky 1962b, 1962c: 7; Rudinsky & Zethner-Moller 1967: 913; Rumbold 1936: 419–437; Rust 1933: 733; Ryan, R. B. 1961b, 1962b, 1965; Ryan, R. B. & Rudinsky 1962; Sahota & Peet 1988; Schenk, Berryman, & Dale 1976: 1079; Schmidt 1966; Schmitz, R. F. & Rudinsky 1968: 42; Shepherd 1966: 513; Singh 1977: 97; Smith 1959: 278–280; Stevens 1981; Stevens & Hawksworth 1970; Stoszek & Rudinsky 1967: 310–311; Swaine 1925c: 263; Taylor, L. R. 1963; Thompson, W. R. & Simmonds 1964: 93, 1965: 14; Thomson 1954: 45; Thong & Webster 1973, 1975a, 1975b, 1983; Watson 1971: 1381; Weiser 1970: 436–441; Welch, H. E. 1963: 380; Whiteside, Wessela, & Compton 1956: 1–60; Wickman 1977; Woodring 1966a: 78, 1966b: 92; Woodring & Moser 1970; Wright, K. H. & Harvey 1967; Wright, K. H. & Lauterback 1958; Wright, K. H. & Lejeune 1967; Wright, L. C., Berryman, & Wickman 1984; Zethner-Moller & Rudinsky 1967: 907. (**hb**) Alcock 1982; Anderson, R. F. 1960: 228; Annila 1971: 10; Anonymous 1971f, 1971g; Ashraf & Berryman 1969: 7, 1970: 203; Atkins 1957a, 1958, 1959b, 1960a, 1961, 1965a, 1965c, 1966a: 286, 1966b, 1966c, 1967a, 1967b, 1975; Atkins & Farris 1962: 25; Atkins & McCullen 1958; Baker, B. H., Hostetler, & Furniss 1977: 289; Bare & Philipps 1976; Beatty 1983; Bedard 1933a, 1933b, 1933c: 1128–1134, 1937b, 1950a: 1–8, 1950b; Bennett & Borden 1971; Berryman 1974: 580; Bongberg 1959a; Borden 1967: 1176; Borden, Brownlee, & Silverstein 1968: 633; Bright 1976d: 63; Bright & Stark 1973: 33; Browne 1968b: 226; Chamberlin 1939: 159–161, 1958: 73–75; Chansler 1968a; Chapman 1955a, 1963: 673–676; Chapman & Kinghorn 1958: 365–369; Cole 1975; Cooper & Stephen 1978: 574; Cornelius 1955; Coulson & Witter 1984: 527; Coulson et al. 1976b: 357; Craighead 1953; DeLeon et al. 1934; DeMars 1963; des Champs 1962; Doane et al. 1936; Dudley 1971: 1303; Dyer, Shovsgaard, & McMullen 1968; Eidmann 1962: 161; Essig 1926: 514, 1958: 515; Evenden & Wright 1955; Felt 1926: 247, 248, 258, 1930a: 247, 256; Felt & Rankin 1932: 405; Foltz et al. 1976: 342; Fredericks & Jenkins 1988; Fronk 1947; Furniss, M. M. 1962c, 1964: 178, 1965a: 440, 1976b, 1980; Furniss, M. M. & Orr 1970; Furniss, M. M. & Tovar 1980; Furniss, M. M. et al. 1979; Furniss, R. L. & Carolin 1977: 357; Gerber, Tonks, & Ross 1983; Graham 1939b, 1952; Hagle et al. 1987: 38; Hendrickson 1960, 1965: 595; Herrick 1935: 138; Hopkins 1899b: 10,

15, 21–22, 26, 1901e: 67, 1904a: 19, 45, 47, 1905e: 11, 1909a: 121–126; Howse 1973; Ives & Wong 1988: 79; Jantz 1965a, 1965b: 2988–2989; Johnsey 1965: 21–27, 1984; Johnsey, Nagel, & Rudinsky 1965; Johnson, N. E. 1960a, 1960b: 2, 1962, 1963b; Johnson, N. E. & Belluschi 1969; Johnson, N. E. & Furniss 1967: 31–33; Johnson, N. E. & Pettinger 1961a, 1961b; Kaston 1939: 11; Kaston & Riggs 1937: 98; Keen 1938: 119, 1952c: 129, 155; Lejeune, McMullen, & Atkins 1961; Lindgren, B. 1980a: 62; Lyons 1956: 602; MacMullen & Atkins 1962; Manville, McMullen, & Reimer 1988; McCambridge & Mata 1969: 507; McCowan & Rudinsky 1958: 1; McLean & Borden 1977: 684; McMullen 1964, 1965, 1970, 1977; McMullen & Atkins 1959a: 67, 1959b: 416, 1961, 1962a, 1962b; McMullen & Walters 1956b: 3; Miller, J. M. & Keen 1960: 99; Mills 1983; Morstatt 1924: 21; Nijholt 1980: 203; Reid 1956: 6, 1958d: 506, 1962a: 533, 1963a: 229; Rudinsky 1966a, 1973b; Rudinsky & Daterman 1964a; Rudinsky et al. 1972, 1973; Ryker & Rudinsky 1979: 205; Sahota & Peet 1988; Sahota, Chapman, & Nijholt 1970; Sahota, Peet, & Bartels 1984; Schmidt, F. H. 1966; Schmitz, R. F. & Rudinsky 1968; Shepherd 1966: 513; Skovsgaard 1968, 1972; Smith, G. W. 1953: 14; Swaine 1918a: 61–62; Taylor, L. R. 1963; Vite & Rudinsky 1957: 156–167; Walters & McMullen 1956: 197; Wood, S. L. 1963: 106, 1982b: 199; Wright, K. H. & Lejeune 1967. (**ds**) Acciavatti & Weiss 1974; Allen, S. J. 1969: 12, 1977, 1978: 5, 1979: 4; Allen, S. J. & Koot 1970: 11, 1971: 15; Allen, S. J. & Unger 1975: 8, 1976: 6; Allen, S. J. & Wood 1973a: 5, 1973b: 9; Amman 1972c: 528; Anderson, R. F. 1960: 228; Anonymous 1958a: 3, 5, 1960: 9-10, 1962i, 1963j, 1963k, 1963y, 1964h, 1964u, 1965b, 1965r, 1966f, 1967g, 1967t, 1968g, 1968p, 1969e, 1969f, 1969m, 1970h, 1972t, 1973c, 1973n, 1974f, 1975f, 1975g, 1975t, 1976f, 1976g, 1976h, 1977g, 1977h, 1977i, 1977n, 1977x, 1978a, 1978f, 1978g, 1978z, 1978b: 34, 1978h: 4, 1979a, 1979f, 1979e: 4, 1981j, 1982b, 1983d, 1983f, 1984d, 1984f; Baker, B. H. 1969; Bedard 1933a, 1938a; Berryman & Stark 1962a; Bongberg 1956a, 1957, 1960: 92; Bongberg & Bennett 1960: 1; Bright 1976d: 63; Bright & Stark 1973: 33; Brown, A. W. A. 1940a: 11; Brown, C. E., Hopkins, & Robins 1960: 84; Brown, C. E., Robins, & Stevenson 1961: 85; Brown, C. E. & Stevenson 1963: 97; Browne 1968: 226; Chamberlin 1917, 1918a, 1925, 1939: 159–161, 1958: 73–75; Chapman 1963; Cole 1975; Craighead 1953; Craighead & Middleton 1930; Curtis & Johnson 1975; Downing 1963: 9; Duncan, B. 1987; Dyer 1952; Essig 1926: 514, 1958: 515; Evans, D. 1983: 32; Evans, D. & Dyer 1953: 130; Evans, D., Lowe, & Hunt 1978; Evenden & Wright 1955; Fall 1906: 203; Felt 1926: 247, 248, 258, 1930a: 247, 255; Felt & Rankin 1932: 405; Furniss, M. M. 1962c, 1978, 1980; Furniss, M. M. & Furniss 1972; Furniss, M. M. & Orr 1970; Furniss, M. M. et al. 1974; Furniss, R. L. & Carolin 1977: 357; Gast et al. 1989: 385; Gredley et al. 1953; Hagedorn 1910d: 22; Hall & Eaton 1960; Hopkins 1903a, 1909a: 121–126, 1909b: 106–114; Hopping, R. 1922; Ishikura 1966; Jantz & Rudinsky 1965; Johnsey, Nagel, & Rudinsky 1965; Johnson, N. E. 1960a, 1960b; Johnson, N. E. & Pettinger 1961a: 1; Johnson, W. T. & Lyon 1976: 53; Keen 1929a: 17, 1938: 119, 1952c: 129, 155; Kimmey et al. 1943: 1–54, 1951: 63; Kleine 1912b: 176, 1914b: 387, 1934a: 133; Kusch 1967; Leech 1947: 80; Leng 1920: 338; Lyons 1956: 602; MacKay 1948: 93, 1950: 114; Marchant & Borden 1976; McComb et al. 1953: 3; McMullen 1977; McMullen & Atkins 1962b; Murayama 1957a: 36; Nijholt, McMullen, & Safranyik 1981; Nijholt & Sahota 1974; Patterson & Hatch 1945: 149; Pitman 1973; Ross & Jones 1953: 133; Ross, D. A. 1967; Rudinsky et al. 1972; Ruppel 1967: 33; Ryan & Rudinsky 1962; Ryker, Libbey, & Rudinsky 1979; Schuder 1969: 81; Smith, G. J. & Melvin 1974a, 1974b; Smith, G. S. 1929; Snow 1883: 44, 1907: 188; Swaine 1913: 90, 1914: 30; Thatcher, T. O. 1935: 261; Wood, S. L. 1948: 23, 1951a: 127, 1963: 106, 1972a: 406, 1982b: 199; Wright, K. H. & Lejeune 1967. (**tx**) Anderson, R. F. 1960: 228; Anonymous 1971f: 8, 1971g: 12; Benoit 1985: 89; Bright 1976d: 63; Chamberlin 1939: 159–161, 1958: 73–75; Doidge 1973b, 1975, 1976; Duncan, B. 1987; Evans, D. 1983: 32; Hagedorn 1910a: 60; Hatch 1927: 302; Hopkins 1905c: 11, 1909a: 121–126; Ives & Wong 1988: 79; Jantz & Johnsey 1964: 1328; Johnson 1960a; Keen 1929a: 17; Kusch 1967: 10; McMullen 1977: 1; Morris, E. V., Cottrell, & Wood 1979: 4; Muesebeck 1942: 95, 1950: 131; Pardy 1983; Ryker & Rudinsky 1979: 204–205; Skovsgaard 1968; Swaine 1918a: 61–62; Thomas, J. B. 1965c, 1967; Wood, S. L. 1963: 9, 13, 106, 1972a: 406, 1982b: 199; Wright, K. H. & Lauterback 1958: 7. (**ms**) Amman & Rasmussen 1969; Anonymous 1981v; Atkins 1959a; Atkins & Farris 1958; Bare, Bethel, & Schreuder 197.; Beal 1950; Beal et al. 1935, 1955; Berryman & Stark 1962a; Bongberg 1959a; Borden & Bennett 1969; Chamberlin 1931; Chapman & Kinghorn 1955; Chapman & Wilson 1956; Clair 1977; Cornelius 1955; DeMars 1963: 1112; Fang & Allen 1955; Furniss, M. M. 1960, 1962a, 1962c, 1964: 178, 1979; Furniss, M. M. & Oakes 1973; Glascock 1953; Hall, P. M. 1983; Harris & Dawson 1979: 6; Hatch 1938: 193; Holbrook 1948; Hunt 1954: 14; Jantz & Johnsey 1964: 233; Johnson, N. E. 1962; Johnson, N. E. & Furniss 1967; Johnson, N. E. & Molatore 1961; Keen 1952b: 49; Look 1981; Mahaffay 1948: 64; Marsden, Furniss, & Kline 1981; McGugan 1966; McMullen & Atkins 1959a: 67; McMullen & Walters 1956b: 3; Mori & Ogoche 1988; Mori et al. 1978; Pettinger 1979;

Prebble 1944: 34; Prinslv 1953: 20; Ruppel & Pass 1970; Ryan 1962b; Sahota & Peet 1988; Schabel 1971; Schmidt 1966; St. Clair, Goulding, & Rudinsky 1977; Swaine 1925c: 263; Thomson, M. G. 1954: 45; Wear 1979; Wear & Lauterbach 1956: 169.

***punctatus* LeConte** 1868: 173. Holotype ♀; northern New York [USA]; MCZ, Cambridge.

Figures: Wood 1963: 9.

Distribution: North America (Alaska/ Alberta, British Columbia, New Brunswick, Newfoundland, Northwest Territories, Ontario, Quebec, Yukon in Canada/ N Idaho, Montana, New York, Pennsylvania, West Virginia in USA).

Hosts: *Picea glauca, P. rubens, P. sitchensis*.

Notes: (3) This is a biologically and anatomically distinct geographical replacement of *micans*.

References: (**ay**) Duncan, B. 1987; Furniss, M. M. & Johnson 1989; Hopkins 1909a: 142–143. (**bv**) Barr, B. A. 1969: 641; Schofer & Lanier 1970: 1487–1488. (**cn**) Browne 1968b: 226; Drooz 1985: 350; Felt 1924: 261, 1926: 261, 1930a: 250, 261; Hopkins 1902e: 3, 1909b: 139–141; Lindgren 1980a: 62; Packard 1890: 722; Swaine 1918a: 61, 65; Tripp & Robins 1968: 101; Tripp, Robins, & Blauel 1970: 89; Tripp, Stevenson, & Baranyay 1967: 99. (**ec**) Furniss, R. L. & Carolin 1977: 359; Hopkins 1909b: 139–141; Swaine 1925c: 262; Werner & Holsten 1984. (**hb**) Bright 1976d: 58; Browne 1968: 226; Chamberlin 1939: 167; Drooz 1985: 350; Felt 1926: 261, 1930a: 250, 261; Furniss, M. M. & Johnson 1989; Furniss, R. L. & Carolin 1977: 359; Gara & Holsten 1975; Gast et al. 1989: 382; Hopkins 1909a: 142–143; Ives & Wong 1988: 77; Lindgren, B. 1980a: 62; Swaine 1918a: 61, 65; Wood, S. L. 1963: 85, 1982b: 187. (**ds**) Anonymous 1926c: 516; Ashworth 1977; Blatchley & Leng 1916: 653; Bright 1976d: 58; Browne 1968b: 226; Chamberlin 1925, 1939: 167; Drooz 1985: 350; Duncan, B. 1987; Evans, D. 1983: 32; Evans, D., Lowe, & Hunt 1978; Felt 1926: 261, 1930a: 250, 261; Furniss, R. L. & Carolin 1977: 359; Gara & Holsten 1975; Gast et al. 1989: 382; Hagedorn 1910d: 23; Hamilton 1894: 35; Henshaw 1882: 269, 1885: 149; Hopkins 1909a: 142–143, 1909b: 139–141; Kleine 1912b: 176, 1914b: 398, 1934a: 133; Kusch 1967; Leng 1920: 338; Leonard 1928: 516; Morgan, A. V. & Morgan 1980; Schwarz 1886: 56; Swaine 1909: 98, 1919b: 5; Van Dyke 1924: 25; Werner & Holsten 1984; Wood, S. L. 1963: 85, 1972a: 405, 1982b: 187. (**tx**) Benoit 1985: 89; Blatchley & Leng 1916: 653; Bright 1976d: 58; Chamberlin 1939: 167; Dietz 1890: 28; Evans, D. 1983: 32; Furniss, M. M. & Johnson 1989; Gemminger & Harold 1872: 2672; Hagedorn 1910a: 60; Hopkins 1902e: 3, 1909a: 142–143; Johnson, C. W. 1897: 73–77; Kusch 1967; LeConte 1868: 173, 1876: 384–385; Muesebeck 1942: 95, 1950: 131; Schwarz 1886: 56; Swaine 1909: 98, 1918a: 61, 65, 1919b: 5; Thomas, J. B. 1965c; Titus, Meikle, & Harrison 1985: 55; Wood, S. L. 1963: 9, 85, 1972a: 405, 1982b: 187. (**ms**) Swaine 1925c: 262.

johanseni Swaine 1919b: 5. Holotype ♀?; Sandstone Rapids, Coppermine River, Northwest Territories [Canada]; CNCI, Ottawa. Synonymy: Wood 1963: 86.

References: (**en**) Doane et al. 1936; Swaine 1925: 261–266, 1933: 29. (**ec**) Steffansson 1921: 743; Swaine 1925c: 262. (**hb**) Chamberlin 1939: 165; Doane et al. 1936; Swaine 1933: 29; Watson 1928: 620. (**ds**) Chamberlin 1925, 1939: 165; Keen 1929a: 19; Leng & Mutchler 1927: 51; Swaine 1919b: 5; Van Dyke 1924: 25. (**tx**) Bright 1967b: 674; Chamberlin 1939: 165; Keen 1929a: 19; de Ruette 1970: 100; Swaine 1919b: 5; Wood, S. L. 1963: 85. (**ms**) Swaine 1925c: 262.

***rhizophagus* Thomas & Bright** 1970: 479. Holotype ♂; 16 km SW El Salto, Durango, Mexico; CNCI, Ottawa.

Distribution: North America (Chihuahua, Durango, Guerrero, Morelos in Mexico).

Hosts: *Pinus durangensis, P. engelmannii*.

Notes: (3) This species breeds only in the roots of seedlings.

References: (**ay**) Furniss, M. M. & Campos 1984. (**hb**) Thomas, J. B. & Bright 1970: 479; Wood, S. L. 1982b: 187. (**ds**) Atkinson & Equihua 1985b: 229; Perusquia 1978; Thomas, J. B. & Bright 1970: 479; Wood, S. L. 1982b: 187. (**tx**) McNamara 1977: 196; Perusquia 1978; Thomas, J. B. & Bright 1970: 479; Wood, S. L. 1974d: 280, 1982b: 187.

***rufipennis* Kirby** 1837: 195. Syntypes 2 ♀; Boreal North America; BMNH, London.

Figures: Bevan 1987: 113; Cottrell 1966, Ives & Wong 1988: 76, Swaine 1914: 33 (adult), 1918a:pl. 12 (adult), 1924d:pl. 1 (adult), pls. 2–5 (galleries), Wood 1963: 9, 13 (as *obesus*).

Distribution: North America (Alaska/ all provinces in Canada/ Arizona, California, Colorado, Idaho, Maine, Michigan, Minnesota, Montana, New Hampshire, New Mexico, New York, Oregon, Pennsylvania, South Dakota, Utah, Washington, Wyoming in USA).

Hosts: *Picea* spp.

Notes: (3) Hopkins 1902e: 3 (*californicus, dietzi, fletcheri, keeni, wickhami*, nomen nudums).

References: (**ay**) Chapman 1972; Cottrell 1978; Coulson & Witter 1984: 528; Eglitis 1985; Frye, Flake, & Germain 1974; Gray, T. & Dyer 1972; Hall, P. M. & Dyer 1974; Ives & Wong 1988: 77; Linnane 1985; Linton et al. 1984; Miller, L. K. & Werner 1987; Rose & Lindquist 1977: 119; Safranyik & Linton 1985a, 1987b, 1988; Sahota & Ibaraki 1979; Sahota, Peet, & Ibaraki 1987; Stock, M. W., Gregoire, & Furniss 1987; Thomas, J. B. 1957: 4; Werner & Holsten 1985. (**bv**) Anonymous 1971z; Baker, B. H. & Kemperman 1974;

Baker, B. H., Hostetler, & Furniss 1977: 289; Dyer 1973, 1975; Dyer & Hall 1977a, 1980, 1983; Dyer, Hall, & Safranyik 1975; Dyer & Safranyik 1977; Ford 1986; Furniss, M. M., Baker, & Hostetler 1976; Furniss, M. M. et al. 1979; Hard 1987, 1989; Hard, Werner, & Holsten 1983; Hawksworth 1985; Holsten 1984; Inscoe 1982; Inscoe & Beroza 1976: 168; Klassen, Ridgway, & Inscoe 1982; Kline et al. 1974; Lawko & Dyer 1974; McGregor & Miller 1989; McGregor et al. 1984; Miller, M. C. et al. 1989; Moeck 1978,1981; Nijholt, McMullen, & Safranyik 1981; Payne & Wood 1981: 480; Rudinsky 1979a: 407; Rudinsky & Michael 1973, 1974; Rudinsky et al. 1974; Safranyik & Linton 1988; Sahota & Ibaraki 1979; Sahota & Thomson 1979; Schmid 1980; Silverstein & Young 1976: 20; Vite et al. 1972; Wagner et al. 1982: 496; Worrall & Harrington 1988; Wright, R. H. 1974: 135; Wright, R. H., Chapman, & Dyer 1974. (**cn**) Anderson, R. F. 1960: 225; Andrews 1968a: 141; Andrews & Erickson 1973a: 14, 1973b: 14, 1975, 1976: 4; Andrews & Monts 1977: 4, 1978: 2, 1979: 3; Andrews & Vanderwal 1971: 3; Anhold, J. A. 1986, 1987; Annand 1946, 1947a, 1947b, 1949; Anonymous 1971v, 1972e, 1972q, 1972t, 1973n, 1974e, 1974v, 1975b, 1975c, 1975e, 1975f, 1975w, 1975x, 1975z, 1976f, 1976h, 1976n, 1977g, 1977i, 1978a, 1978b, 1978g, 1978h: 4, 1978p, 1979a, 1979e: 4, 1979f, 1981e, 1981v, 1982b, 1983c, 1983f, 1983g, 1984f, 1985h, 1988d; Averill 1978b; Baker, B. H. & Curtis 1972, 1973; Baker, B. H. & Kemperman 1974; Baker, B. H., Hostetler, & Laurent 1977; Beatty 1983; Beckwith 1972; Bennett 1983; Bennett & Beatty 1984; Bousfield, Hagle, & Kohler 1988; Brown, R. M. & Winter 1981; Buffam 1971; Buffam & Yasinski 1971; Buffam et al. 1973; Byler et al. 1986; Cahill 1979; Cahill & Lister 1971; Cahill, Lister, & Brown 1973; Cameron 1989; Cerezke & Emond 1989: 11; Chittenden 1898a: 96; Churcher 1985; Ciesla, Dewey, & Tunnock 1971: 17; Clarke, L. J. & Carew 1981, 1983a, 1983b, 1983c, 1984, 1985: 20, 1986: 22; Clarke, L. J. et al. 1982: 24; Comtois 1988: 171; Cottrell 1973: 5, 1978; Cottrell & Adams 1973; Cottrell & Doidge 1972: 3; Cottrell & Erickson 1977: 4, 1978: 4; Cottrell & Fiddick 1972; Cottrell & Koot 1975, 1976; Cottrell, Unger, & Fiddick 1979: 21; Cottrell & Wood 1971: 3; Coulson & Witter 1984: 528; Crosby & Curtis 1970, 1971; Curtis & Hadfield 1977a, 1977b; Curtis & Johnson 1975, 1978; Dewey & Clinton 1980; Doidge 1972: 1, 1973a: 8, 1973b: 4, 1977: 4, 1978: 2; Doidge & Koot 1979: 2, 3, 4, 15; Dolph & Hadfield 1971; Dolph & Pettinger 1971: 3, 5; Drooz 1985: 349; Dyer 1973, 1975; Dyer & Hall 1977a; Dyer, Hall, & Safranyik 1975; Dyer & Safranyik 1977; Dyer & Taylor 1971; Eglitis 1981, 1982b, 1984a, 1985; Erickson & Wood 1979: 5; Felt 1906: 753, 1924: 261, 1926: 249, 261, 1930a: 249, 261; Fiddick 1971b: 2, 1978, 1979, 1980: 3; Fiddick, Harvey, & Silver 1965; Fiddick & Van Sickle 1979: 6, 1980: 11, 1982: 8; Fletcher 1899; Forbes, Underwood, & Van Sickle 1973: 25, 1975: 23; Frye 1971b: 25; Frye & Flake 1972; Frye & Wygant 1971; Frye et al. 1977; Fuller & Hostetler 1980; Furniss, M. M., Baker, & Hostetler 1976; Furniss, M. M. et al. 1979; Gardiner, L. M. 1970; Gentry, G. R. et al. 1979: 813; Germain, Weiss, & Loomis 1973a, 1973b: 41; Gibson, K. E. 1982c, 1985b; Gibson, K. E. et al. 1984, 1987; Gillman & Bailey 1977, 1978: 7; Graham 1963; Gregg & Hadfield 1978; Gregg, Filip, & Hadfield 1980: 38; Gregg, Goheen, & Bridgwater 1978: 45; Hagle et al. 1987: 34; Hamel 1980: 787; Hard 1974: 10, 1982, 1985; Hard & Holsten 1985; Hard, Werner, & Holsten 1983; Harris, Dawson, & Brown 1978; Harvey 1897: 176, 1898: 173–178; Harvey, E. G., Jardine, & Silver 1964; Helzner & Moyer 1979; Hinds & Buffam 1971; Hiratsuka et al. 1982: 7; Hodgkinson 1983; Hofacker & Loomis 1982: 3, 1983: 3; Hofacker, Loomis, & Gilstrap 1988: 18; Hofacker, Loomis, & Tucker 1984: 6, 1987; Hofacker et al. 1989; Hoffman et al. 1988: 3; Holland 1983; Holland & Tkacz 1984; Holsten 1979, 1980, 1981a, 1981b, 1982, 1987; Holsten, Laurent, & Averill 1980: 64; Holsten & Werner 1984; Holsten, Werner, & Laurent 1980; Holsten & Wolfe 1979; Holsten & Zogas 1979; Holsten et al. 1979; Honing 1970: 18; Hopkins 1891a, 1894c, 1894d, 1898d: 69, 1899a: 343, 1899b: 8, 21, 1899c: 392, 447, 1909b: 136; Hostetler, Rush, & Laurent 1977: 3; Hough 1882: 259; Howard 1898: 97–98; Ives 1972: 8; Ives, Blauel, & Robins 1971: 69, 1972: 74; Ives, Brandt, & Laut 1970: 77; Ives, Brandt, & Lawrence 1969; Ives, Lawrence, & Robins 1974: 71; Ives & Wong 1988: 77; James & Goheen 1981; James & Linnane 1979, 1980: 13; James et al. 1985; Johnson 1897: 73–77; Johnson, D. W. & Averill 1983; Johnson, D. W. & Creasap 1978a, 1978b: 16; Johnson, D. W. & Curtis 1986; Johnson, D. W. & Minnemeyer 1976, 1977: 32; Klein, W. H. & Parker 1970: 15; Klein, W. H. & Stipe 1971: 15; Klein, W. H. et al. 1973: 25; Kline et al. 1974; Knapp 1985; Knapp et al. 1989: 4; Knopf, J. 1978; Knopf, J., Klein, & Tegethoff 1977: 19; Knopf, J. et al. 1978: 33; Kohler, Dooling, & Bousefield 1985; Kondo & Moody 1987: 19; Kondo & Taylor 1985: 11; Landis, Averill, & Frye 1977: 29; Lawko & Dyer 1974; Lessard 1976, 1978, 1982b; Lessard & Fuller 1981; Lessard & Walters 1978: 24; Lindgren 1980a: 62, 1988; Lindquist, O. H. & Syme 1981: 38; Linnane 1983, 1984, 1985; Linnane & Telfer 1984; Lister & Cahill 1970: 22; Lister & Hildebrand 1984; Lister et al. 1976; Livingston et al. 1988: 4; Logan, Schmid, & Mehl 1980; Loomis, Hofacker, & Tucker 1985: 15, 1986; Magasi 1979, 1980, 1981a, 1981b: 22, 1982b, 1983, 1984b, 1985, 1986a: 8, 1986b, 1987: 9, 1988: 13, 1989: 6; Magasi,

Sterner, & Forbes 1977: 24; Martineau 1984, 1985: 20; Martineau & Lavallee 1973: 43; McCambridge & Knight 1972; McGregor 1977b; McGregor et al. 1984; Miller, W. F. 1979; Mills 1983; Mitchell, J. C. & Schmid 1973; Mocettini & Cahill 1989; Moeck 1981; Molnar, Ross, & Fiddick 1971: 77, 1972: 82; Monts 1978; Moody 1988: 18; Moody & Cerezke 1983: 9, 1984, 1985; Morris, E. V. & Monts 1971: 9, 1972: 5, 1973a: 9; Morris, E. V. & Wood 1978: 4; Moyer 1977; Murtha & Cozens 1985; Neal 1979: 813; Neilson 1986; Nijholt, McMullen, & Safranyik 1981; O'Neil & Sharon 1988: 21; Ostaff & Newell 1981; Owen 1986: 4; Packard 1890: 814; Parker, D. L. 1971a, 1973a, 1973b, 1974; Parker, D. L., Stipe, & Tegethoff 1972; Parker, D. L. et al. 1977: 35; Patterson, V. B. et al. 1973: 12, 1975: 44; Payne & Wood 1981: 480; Peck 1875: 1–21, 1876: 295, 1879: 34; Pettinger 1979; Pettinger & Dolph 1970: 9, 1971: 7; Pettinger & Johnson 1973a: 1, 1973b: 11, 1974; Petty, J. et al. 1972: 4; Ragenovich 1979, 1980b: 21, 1982; Raimo & Sharon 1981; Robins et al. 1973: 30, 1974: 40; Rogers, T. J. 1981; Rogers, T. J & Hessburg 1985; Rogers, T. J. & Maffei 1987: 2, 1988: 2; Rose, A. H. & Lindquist 1977: 118; Ross, D. A., Baranyay, & Fiddick 1973: 86; Ross, D. A., Van Sickle, & Wood 1981: 82; Rudinsky 1979a: 407; Ruppel 1977; Rush et al. 1978: 35; Ruth, Miller, & Sutherland 1982: 24; Ryker & Rudinsky 1979: 207; Safranyik & Linton 1981a, 1981b, 1982, 1987a; Safranyik 1985a, 1988b, 1988c; Safranyik & Petty 1971; Safranyik, Petty, & Smith 1972; Sahota & Ibaraki 1979, 1980; Schmid 1970: 3, 1972c, 1977: 3, 1981; Schmid & Beckwith 1972, 1975; Schmid & Frye 1976; Schmid & Hinds 1974; Schwandt et al. 1986; Sharon & O'Neil 1985; Singh & Clarke 1981: 6, 1982a: 4, 1982b: 2; Skelly et al. 1988; Smith, A. H. 1981; Smith, A. H. & Johnsen 1985; Smith, G. J. 1973, 1974a, 1974b; Smith, J. B. 1900: 364, 1901b: 92; Sterner & Davidson 1981: 8, 1982, 1983: 13; Stevens 1981; Stipe 1976a; Stipe et al. 1987; Stipe, Valcarce, & Tegethoff 1977: 21; Swaine 1918a: 61, 64, 1925: 261–266, 1933: 29; Syme & Nystrom 1988: 38; Telfer 1982; Thier & Hoffman 1983; Thomas, P. R. 1986; Titus 1987: 24; Tkacz 1986; Tripp, Ross, & Baranyay 1974: 79; Tripp, Ross, & Hunt 1975: 84; Tripp, Ross, & Van Sickle 1977: 77, 1978: 79; Tunnock et al. 1984; Walters, J. W. & Lessard 1978: 11; Weed & Fiske 1898: 67–69; Werner, Baker, & Rush 1977: 2; Werner, Elert, & Holsten 1983; Werner, Hard, & Holsten 1988; Werner, Hastings, & Averill 1983; Werner & Holsten 1983; Werner, Holsten, & Hastings 1986; Werner et al. 1984, 1986; Wilson, L. F. 1977: 70; Wong, H. R. & Melvin 1973; Wood, C. S. & Van Sickle 1983: 6, 1987: 19, 1989: 19; Wood, C. S., Van Sickle, & Humble 1987: 20; Wood, C. S., Van Sickle, & Shore 1984: 7, 1985; Wood, R. O. & Doidge 1971: 3, 1972: 16; Wood, R. O. & Koot 1973: 13; Wood, R. O. & Unger 1977: 4, 1978: 3; Wood, R. O. & Wood 1975: 12, 1976: 7; Worrall & Harrington 1988; Yarger, Holsten, & Laurent 1978: 73. (**ec**) Amman 1972c: 528; Baker, B. H., Hostetler, & Furniss 1977: 293; Baker, B. H. & Kemperman 1974; Beal 1953; Beckwith 1972b; Buffam et al. 1973; Chansler 1968b; Comtois 1988: 171; Cottrell 1966, 1978; Crockett & Hansley 1978; Dyer 1975; Dyer & Hall 1977, 1980; Dyer, Hall, & Safranyik 1975; Dyer & Taylor 1971; Felt 1906: 753; Frye 1971a; Frye, Flake, & Germain 1974; Furniss, M. M., Baker, & Hostetler 1976; Furniss, M. M. et al. 1979; Furniss, R. L. & Carolin 1977: 359; Hard 1987, 1989; Hard & Holsten 1985; Hard, Werner, & Holsten 1983; Hawksworth 1985; Hinds & Buffam 1971; Holsten 1984; James & Goheen 1981; Kaya 1984; Marsh 1979: 169; Massey & Wygant 1973; Mills 1983; Mitchell, J. C. & Schmid 1973; Otvos 1979; Safranyik 1978b; Safranyik & Linton 1982, 1982a, 1982b, 1985, 1987b; Sahota & Thomson 1979; Schmid 1976a; Schmid & Frye 1976; Stevens 1981; Thomson, A. J. & Sahota 1981; Thong & Webster 1983; Tomalak, Welch, & Galloway 1989: 9; Vitzthum 1926: 459; Werner & Holsten 1984, 1985a, 1985b. (**hb**) Anderson, R. F. 1960: 225; Beatty 1983; Beckwith 1972b; Beckwith, Wolff, & Zasada 1977; Bennett & Beatty 1984; Berryman 1974: 580; Bright 1976d: 60; Bright & Stark 1973: 32; Chittenden 1890; Comtois 1988: 171; Cooper & Stephen 1978: 578; Cottrell 1966, 1978; Drooz 1985: 349; Dyer 1975; Dyer & Hall 1977; Eglitis 1984a; Felt 1926: 249, 261, 1930a: 249, 261; Frye, Flake, & Germain 1974; Furniss, M. M., Baker, & Hostetler 1976; Furniss, M. M. et al. 1979; Furniss, R. L. & Carolin 1977: 359; Gara & Holsten 1975; Gast et al. 1989: 385; Graham 1963; Gray, T. & Dyer 1972; Hagle et al. 1987: 34; Holland 1983; Holsten 1981b, 1982; Holsten, Werner, & Laurent 1980; Hopkins 1899a: 343, 1899c: 392, 447, 1899d: 8, 21; Lawko & Dyer 1974; Lindgren, B. 1980a: 62; Linnane & Telfer 1984; Martineau 1984, 1985: 20; Mills 1983; Rose, A. H. & Lindquist 1977: 118-119; Ryker & Rudinsky 1979: 207; Safranyik 1978b; Sahota & Thomson 1979; Schmid 1970a; Schmid & Beckwith 1972, 1975; Schwarz 1889d: 175, 1894b: 255; Smith 1900: 364; Swaine 1918a: 61, 64; Thompson, A. J. & Sahota 1981; Watson 1931: 126–127; Weed & Fiske 1898: 67; Werner, Baker, & Rush 1977; Werner & Holsten 1985a, 1985b; White, R. E. 1983: 329; Wilson, L. F. 1977: 70; Wong, H. R. & Melvin 1973; Wood, S. L. 1982b: 192. (**ds**) Acciavatti & Walters 1977; Allen, S. J. 1977, 1979: 5; Allen, S. J. & Unger 1975, 1976: 5; Allen, S. J. & Wood 1973a: 5, 1973b: 6; Amman 1972c: 528; Anderson, R. F. 1960: 225; Anonymous 1972t, 1973n, 1974e, 1975e, 1975f, 1976f, 1976h, 1976n, 1977g, 1977i, 1978g, 1978h: 4, 1979a, 1979e: 4, 1979f, 1982b, 1983f, 1984f; Ashworth 1977; Atwood 1945; Austara

et al. 1983; Baker, B. H. & Curtis 1973; Baker, B. H., Hostetler, & Laurent 1977; Beckwith 1972a; Blatchley & Leng 1916: 655; Bright 1971a: 125, 1976d: 60; Bright & Stark 1973: 32; Brown, R. M. & Winter 1981; Buffam et al. 1973; Chamberlin 1925; Chittenden 1890; Cottrell 1978; Curtis & Johnson 1975; Dodge 1938; Drooz 1985: 349; Duncan, B. 1987; Dyer 1975; Dyer & Hall 1977; Dyer & Safranyik 1977; Elias 1982a, 1982b, 1982d, 1985: 39; Elias, Short, & Clark 1986; Evans, D. 1983: 32; Evans, D., Lowe, & Hunt 1978; Felt 1906: 753, 1926: 249, 261, 1930a: 249, 261; Ferrer 1942; Frye, Flake, & Germain 1974; Frye et al. 1977: 1221; Furniss, M. M., Baker, & Hostetler 1976; Furniss, R. L. & Carolin 1977: 359; Furniss, M. M. et al. 1977; Gara & Holsten 1975; Gautreau & Melvin 1974: 13; Hagedorn 1910d: 23; Hamilton 1894a: 35–36; Harrington 1890: 189; Henshaw 1885: 149; Hopkins 1891a; Johnson, C. W. 1901b: 92; Kleine 1912b: 176, 1934a: 133; Kusch 1967; Leng 1920: 338; Lindquist, O. H. & Syme 1981: 38; Melsheimer 1853: 87; Morgan, A. V. & Morgan 1980; Nijholt, McMullen, & Safranyik 1981; Provancher 1877: 572–573, 1878: 13–14; Safranyik & Linton 1982; Sahota & Ibaraki 1980; Sahota & Thomson 1979; Schmid & Beckwith 1972, 1975; Schwarz 1886: 56; Smith, G. J. 1974a, 1974b; Smith, J. B. 1900: 364, 1910: 404; Still, Tidsbury, & Melvin 1974a, 1974b; Susut & Melvin 1974; Swaine 1909: 98; Syme & Nystrom 1988: 38; Thomson & Sahota 1981; Tredl 1907; Werner & Holsten 1984; Wickham 1896a: 309; Winter, T. G. 1983: 9; Wood, S. L. 1972a: 405, 1982b: 192. (**tx**) Anderson, R. F. 1960: 225; Beckwith 1972, 1972a; Benoit 1985: 89; Blatchley & Leng 1916: 655; Bright 1976d: 60; Cottrell 1966; Dietz 1890: 28; Dodge 1938: 27; Evans, D. 1983: 32; Gemminger & Harold 1872: 2672; Hagedorn 1910a: 60; Ives & Wong 1988: 76; Kirby 1837: 195, 1878: 13–14; Kusch 1967; LeConte 1868: 173, 1876: 384–385; Lindquist, O. H. & Syme 1981: 38; Mannerheim 1853: 238; Muesebeck 1942: 95, 1950: 131; Pardy 1977,1983; Provancher 1877: 572–573; Ryker & Rudinsky 1979: 207, 208; Schedl 1940a: 339; Schwarz 1886: 56, 1889d: 175; Swaine 1909: 98–99, 1918a: 61, 64–65; Syme & Nystrom 1988: 38; Thatcher, T. O. 1954: 3; Thomas, J. B. 1957: 4; Titus, Meikle, & Harrison 1985: 55; Wood, S. L. 1963: 93, 1969c: 116, 1972a: 405, 1982b: 192. (**ms**) Anonymous 1972e, 1972q, 1981v; Beal 1953; Eckstein 1900c; Gries et al. 1988; Harris, Dawson, & Brown 1978; Linton & Safranyik 1988; Logan, Schmid, & Mehl 1980; Pettinger 1979.

obesus Mannerheim 1843: 296 (*Hylurgus*). Holotype ♀; Insula Sitkha; MZU, Helsinki. Synonymy: LeConte 1876: 385, Wood 1963: 93.

References: (**ay**) Chapman 1969b; Farris 1965a: 3–4; Hopkins 1909a: 135–138; Schofer & Lanier 1970; Thomas, J. B. 1967; Thomas, J. B. & Krywienczyk 1966. (**bv**) Annila 1971a: 12; Baker, W. L. 1972: 246; Barr, B. A. 1969: 640; Chapman, J. A. & Dyer 1969: 31; Dyer 1970; Dyer & Chapman 1971; Dyer, Shovsgaard, & McMullen 1968; Dyer & Taylor 1968; Jacobson 1972; Schmid & Frye 1977; Wygant & Lejeune 1967. (**cn**) Anderson, R. F. 1948: 140, 1960: 227; Andrews 1969a: 131, 1969b: 136; Andrews & Molnar 1969; Andrews, Vanderwal, & Baumann 1969: 131; Andrews, Vanderwal, & Wood 1970: 4; Annand 1947: 34; Anonymous 1958a: 4, 6, 1960i, 1965r, 1966f, 1966u, 1967t, 1968p, 1969m, 1970t; Baker, B. H. 1969; Baker, W. L. 1972: 247; Baldwin, P. H. 1968a: 90–99, 1968b, 1968c: 1–4; Bauman 1967: 168, 1968: 184, 1969: 158; Beddows 1968: 215, 1969: 192; Bongberg 1957; Brown, C. E. & Stevenson 1964: 99, 1965: 101; Browne 1968b: 225; Cahill 1974; Chansler 1968: 47; Chansler & Pierce 1966: 1357–1359; Chrystal 1915: 73, 1916: 65, 1916: 796, 1917: 44; Collins & Harris 1970; Cottrell & Fiddick 1962,1968; Cottrell, Holms, & Ross 1965, 1966b; Cottrell & Ross 1964; Craighead 1947; Crosby 1966; Crosby & Baker 1966; Crosby & Curtis 1968, 1970b; Doane et al. 1936; Doidge 1967: 196; Dolph & Pettinger 1968: 40, 1969: 6; Downing 1957: 113; Dyer 1969: 41–45, 1970: 18–21; Dyer, Skousgaard, & McMullen 1968: 15–16; Dyer & Taylor 1968: 769–776; Essig 1926: 512, 1958: 513; Felt 1924: 260, 1930a: 249, 260; Felt & Rankin 1932: 406; Fiddick 1968a, 1968b: 5, 1969a, 1969b, 1969c, 1970a, 1970b, 1970c, 1971a: 6; Fiddick, Molnar, & Harris 1966: 3; Forbes, Underwood, & Van Sickle 1969a: 24, 1970: 27; Foster & Hook 1972: 6; Francke-Grosmann 1954a; Geistlinger 1967: 127, 1968: 135; Germain & Wygant 1967: 1–4; Grant, J. 1967a: 181, 1967b: 187, 1968a: 199, 1968b: 203, 1969a, 1969b: 181; Grant, J. & Cottrell 1964, 1968; Grant, J., Lund, & Beddows 1970: 34; Hall, R. C. & Eaton 1960; Hatch 1938: 193; Hewitt 1914: 851–876, 1915: 30, 1916: 1–40, 1917: 1–70; Hofacker, Loomis, & Tucker 1984: 55; Hopkins 1899: 15, 1902d: 21, 1902e: 3, 1903: 60, 1909b: 132; Hopping, R. 1921: 10, 1922: 131; Ishikura 1966; Jaenicke 1927: 163; Jannone & Binaghi 1959: 62–85; Keen 1938: 127, 1952c: 164; Klein, W. H. 1966: 17, 1967, 1968; Klein, W. H. & McGregor 1966; Klein, W. H. & Tegethoff 1970; Knight 1969: 448; Koplin 1967: 179–187; Landgraf 1966: 26; Little, J. D. 1966: 145; Lucht 1966: 28; Lund 1967: 212, 1968: 234, 1969: 204; Massey & Wygant 1954: 5; Miller-Weeks 1985: 20; Molnar, Harris, & Ross 1965: 95, 1967: 111; Molnar et al. 1970: 98, 1968: 111, 1969: 113; Monts 1967: 78, 1968: 75, 1969: 81; Morris, E. V. 1969: 60; Morris, E. V., Brown, & Wegwitz 1970: 12; Morris, O. N.

& Olsen 1970: 5; Orr, P. W. 1966; Orr, P. W., Pettinger, & Dolph 1965, 1966; Packard 1875: 589–610, 1877: 22–29; Pettinger & Dolph 1967: 38, 1969; Richmond & Kinghorn 1951: 31; Robins et al. 1973: 23; Ross, D. A. 1963, 1968: 10–12; Ruppel 1967: 32; Schabel 1971; Schmid & Frye 1977; Schofer & Lanier 1970: 1487–1488; Schuder 1969: 78; Shook & Baldwin 1970: 1345–1354; Silver & Ross 1959: 88, 1964b: 110, 1965a: 112; Swaine 1910d: 42, 1913: 41–43, 1914: 33–40, 1918a: 66; Tearoe 1976; Tripp & Blauel 1969: 99; Tripp & Robins 1968: 101; Tripp, Robins, & Blauel 1970: 85; Van den Bosch 1968; Van Dyke 1924: 25; Washburn & Downing 1960; Werner 1978; Wood, R. O. 1967: 104, 1968: 102; Wood, R. O., Geistlinger, & Doidge 1970: 3; Wood, R. O. & Ruth 1966; Wygant & Lejeune 1967. (**ec**) Ashraf & Berryman 1970: 206; Baldwin, P. H. 1968a, 1968c; Burks 1979: 799; Bushing 1965: 459; Clausen 1978: 294; Collis & Harris 1970; Dyer 1969; Dyer, Shovsgaard, & McMullen 1968; Farris 1965a; Foltz et al. 1976: 342; Keen 1938: 127; Knight 1969; Koplin 1967b, 1972; Koplin & Baldwin 1970: 510–515; Laumond & Ritter 1971; Marsh 1979: 158, 169; Mason, W. R. M. 1978; Massey 1965b, 1966a, 1969b: 43–52; Massey & Wygant 1954: 5; Matthews 1970; McGugan & Coppel 1962; Poinar 1975: 155; Ross, D. A. 1968; Schmid & Frye 1977; Shook & Baldwin 1970; Stewart 1965: 924; Swaine 1925c: 262. (**hb**) Anderson, R. F. 1960: 227; Atkins 1966a: 286; Baker, W. L. 1972: 247; Baldwin, P. H. 1968a; Bongberg 1959a; Browne 1968b: 225; Chamberlin 1939: 164, 1958: 77; Clausen 1978: 294; Doane et al. 1936; Essig 1926: 512, 1958: 513; Felt 1930a: 249, 260; Felt & Rankin 1932: 406; Grant, J. & Cottrell 1964, 1968; Hopkins 1909a: 135–138; Keen 1938: 127, 1952c: 164; Knight 1969; Mansingh 1971: 996; Massey & Wygant 1954: 5; Schmid & Frye 1977; Swaine 1909: 97, 1918a: 66; Werner 1978; Wood, S. L. 1963: 93; Wygant & Lejeune 1967. (**ds**) Allen, S. J. 1967: 55, 1968: 51; Anderson, R. F. 1960: 227; Anonymous 1958a: 4, 6, 1965r, 1966f, 1966u, 1967t, 1968p, 1969m; Bain 1974: 15; Baker, B. H. 1969; Bongberg 1957; Brown, C. E. & Stevenson 1965: 101; Browne 1968b: 225; Chamberlin 1917: 324, 1925, 1939: 164, 1958: 77; Chapuis 1869, 1873; Dejean 1837; Essig 1926: 512, 1958: 513; Felt 1930a: 249, 260; Felt & Rankin 1932: 406; Gautreau 1974: 5; Grant, J. & Cottrell 1964, 1968; Hagedorn 1910d: 22; Hall & Eaton 1960; Hamilton 1894: 35; Hopkins 1909a: 135–138; Hopping, R. 1922; Ishikura 1966; Jannone & Binaghi 1959; Keen 1929a: 18, 1938: 127, 1952c: 164; Kleine 1912b: 176, 1934a: 133; Kusch 1967; Leng 1920: 338; Melsheimer 1853: 87; Patterson & Hatch 1945: 150; Provancher 1877: 13, 572; Ross, D. A. 1968; Ruppel 1967: 32; Schuder 1969: 78; Schwarz 1900: 537, 1910: 185; Shook & Baldwin 1970: 1345–1354; Swaine 1909: 97, 1914: 33; Van Dyke 1924: 25; Wood, S. L. 1963: 93; Wygant & Lejeune 1967. (**tx**) Anderson, R. F. 1960: 227; Chamberlin 1939: 164, 1958: 77; Chapuis 1869: 35, 1873: 243; Gemminger & Harold 1872: 2672; Hagedorn 1910a: 60; Hopkins 1902e: 3, 1909a: 135–138; Keen 1929a: 18; Kusch 1967; LeConte 1868: 173, 1876: 385; Mannerheim 1843: 296 (reprint p. 124), 1852: 356, 1853: 238; Muesebeck 1942: 95, 1950: 131; Provancher 1877: 572; Schedl 1940: 339; Swaine 1918a: 62, 66–67; Thomas, J. B. 1965c, 1967; Thomas, J. B. & Krywienczyk 1966; Wood, S. L. 1963: 9, 13, 93, 1969c: 116. (**ms**) Bongberg 1959a; Essig 1931: 699; Hatch 1938: 193; Schabel 1971; Swaine 1925c: 262.

similis LeConte 1957: 59. Lectotype ♀?; Oregon [USA]; MCZ, Cambridge, designated by Wood 1982b: 192. Synonymy: LeConte 1868: 173.

References: (**cn**) Cook & Davis 1891: 15; Essig 1926: 512; Fall & Cockerell 1907: 218; Packard 1890: 721–722. (**hb**) Essig 1926: 512. (**ds**) Cockerell et al. 1907; Essig 1926: 512; Fall 1906: 203; Ferrer 1942; Hamilton 1894: 35; Henshaw 1882: 269; Hopkins 1903a: 60; Hubbard & Schwarz 1878a: 666; Lacordaire 1866: 361; Leng 1920: 338; Provancher 1877: 373, 1878: 13; Slossen 1902: 319; Snow 1907: 188; Swaine 1909: 97; Wickham 1896a: 310. (**tx**) Deitz 1890: 28, 30; Lacordaire 1866: 361; LeConte 1857: 22, 59, 1868: 173, 1876: 385; Schedl 1940a: 339; Swaine 1909: 97.

piceaperda Hopkins 1901b: 16. Neotype ♀; Camp Carabou, Maine [USA]; USNM, Washington, designated by Wood 1982b: 192. Synonymy: Wood 1963: 94.

References: (**ay**) Hopkins 1909a: 126–130; Thomas, J. B. 1957: 4. (**bv**) Balch 1942a. (**cn**) Anderson, R. F. 1960: 227; Anonymous 1956f: 108; Atwood 1944: 37, 1945: 8; Balch 1931: 66, 1932: 52, 1933: 48, 1934: 680, 1936: 23–31, 1939: 1–5, 1940: 1–5, 1941: 1–4, 1942a: 621–629, 1942b: 37, 1942c: 900–906; Balch & Hawboldt 1944: 51; Balch & Simpson 1932: 162–163; Balch, Simpson, & Prebble 1934: 57–59; Balch, Webb, & Fettes 1955a; Beeson 1918: 114–124; Belyea & Prebble 1951; Blackman 1950; Boutin 1926: 70; Brown, A. W. A. 1940b, 1941: 8, 1943: 6; Brues 1920: 70; Burke 1906: 4–5; Ceballos & Cordoba 1945d; Chamberlin 1939: 163; Chrystal 1949b: 3–11; Connola et al. 1956; Craighead 1924: 39, 1925c, 1927: 10, 1930: 4, 1942b; Craighead & Middleton 1930; Currie 1905: 82; DeGryse 1947: 4, 1949b; Doane et al. 1936; Dunn 1936: 9; Escherich 1912a, 1913; Fall & Cockerell 1907:

218; Felt 1906: 338, 379, 693, 1924: 258, 1926: 249, 258, 1930a: 241, 249, 258; Felt & Bromley 1943: 326–327; Felt & Rankin 1932: 406; Forbes et al. 1956: 110–111, 1957: 16, 1958: 13, 21; Gobeil 1935: 60–65, 1936: 97–103, 181–204, 1938: 111, 1939a: 71–89, 1941: 632–640, 1941: 730–737, 1943: 1–15; Graham 1922b, 1939b, 1952; Harrison 1945: 36; Hawbolt 1944: 6, 1947: 36, 1948: 39; Hopkins 1901a: 250, 1901b, 1902d: 22, 1902e, 1903: 265–270, 1904a: 26, 1905: 10–11, 1906a: 5, 1907c: 515, 1908b, 1908c: 160, 1909b: 114–126, 1909c: 58, 75, 1910a, 1910e, 1910f: 2, 1910g: 58, 75; Huffaker 1964; Kennedy 1948: 117; Leach 1940b: 224; Leng 1920: 338; Levesque 1946: 529; Lunn 1925: 162; Marquis 1956: 10–11, 110–111; Massey & Wygant 1954: 5; McIntyre 1939: 879; McGugan 1959: 1–114; Morris 1958: 177–178; Murayama 1917: 27; Murphy 1917: 27; Nash 1937: 1–4, 1940: 70–72, 1952: 70 in ed. 1, 75 in ed. 2; Osborne 1938: 111; Parr 1943: 420; Pierson 1922: 632, 1923: 25, 1927: 118, 1932: 7, 1933: 59–73; Peirson & Dimond 1959: 24; Prebble 1954: 220; Reeks 1946: 26; Reeks & Barter 1951: 140; Reeks et al. 1945: 6, 1946: 10, 1948: 14, 1949: 15, 1953: 11; Rendall 1941: 52, 1943: 38–39; Richmond & McGuffin 1945: 42; Ross 1954: 142; Seavey 1937: 69, 1939: 71; Shenefelt & Benjamin 1955: 64–85; Sippel & MacDonald 1958: 32; Swaine 1910d: 42, 1913: 41–43, 1918a: 66, 1924d: 1–20, 1924e: 567, 1925: 261–266, 1928: 1–20, 1929: 145–146, 1931: 1–4, 1933: 12–14; Swaine et al. 1924: 85; Thomas, J. B. 1958: 393–394; Twinn 1933: 74, 1934: 123, 1943: 8, 1943: 70; Waters & McIntyre 1954: 10. (**ec**) Anonymous 1956f: 108; Cary 1917; Chamberlin 1939: 163; Craighead et al. 1927; DeGryse 1947b; Felt 1906: 579; Gobeil 1936b; Graham 1922b, 1939b, 1952; Hopkins 1901b, 1903: 265–270, 1909b: 114–126; Leach 1940b: 224; Lunn 1925: 162; Massey & Wygant 1954: 5; Pierce 1908: 386; Price 1956: 22; Reeks & Barter 1951: 140; Riley 1940: 611; Rumbold 1936: 419–437; Swaine 1921: 345, 1924d: 1–20, 1925c: 262; Thomas, J. B. 1958: 393; Thompson, W. R. 1943: 40; Webb 1945: 70; Weiss & West 1920: 2. (**hb**) Anderson, R. F. 1960: 227; Blackman 1950; Boutin 1926: 100–107, 1927: 120–121; Brues 1920, 1947; Chamberlin 1939: 163; DeLeon et al. 1934; Doane et al. 1936; Evans 1952: 140; Felt 1906: 379, 1926: 249, 258, 1930a: 241, 249, 258; Felt & Rankin 1932: 406; Gobeil 1935: 60–65, 1936a, 1936b, 1936c; Graham 1939b, 1952; Hopkins 1901b, 1901e: 68, 1903: 265–270, 1904a: 26, 1909a: 130; Massey & Wygant 1954: 5; Nash 1937: 1, 1952: 70 in ed. 1, 75 in ed. 2; Peirson 1927: 118–120; Peirson & Dimond 1959: 24; Pierce 1907: 294; Simpson 1929b: 146; Swaine 1911b: 87, 1918a: 66, 1924d: 1–20, 1924e: 567, 1929: 145; Swaine et al. 1924: 85; Watson 1927: 120, 1928: 613–635, 1931: 126. (**ds**) Anderson, R. F. 1960: 227; Anonymous 1926c: 516; Balch 1933; Beaulne 1956; Blackman 1950; Blatchley & Leng 1916: 653; Brown, W. J. 1930: 246; Chamberlin 1925, 1939: 163; Cockerell et al. 1907; Craighead & Middleton 1930; Currie 1905; Dodge 1938; Evans 1952: 140; Felt 1926: 249, 258, 1930a: 241, 249, 258; Felt & Rankin 1932: 406; Gredley et al. 1922; Hagedorn 1910d: 22; Hopkins 1909a: 126–130, 1909b: 114–126; Kleine 1912b: 176, 1914b: 398, 1934a: 133; Lejeune 1946: 46; Leonard 1928: 516; Loughlan et al. 1945: 1; McIntyre 1939: 879; Proctor 1946: 207; Reeks & Smith 1945: 3; Schedl 1940: 339; Swaine 1909: 97, 1911b: 87; Wickham 1896a: 310. (**tx**) Anderson, R. F. 1960: 227; Blatchley & Leng 1916: 653; Chamberlin 1939: 163; Dodge 1938: 14, 27–28; Hagedorn 1910a: 60; Hopkins 1901b: 16, 1902e, 1909a: 126–130, 1915c: 199; Muesebeck 1942: 95, 1950: 131; Swaine 1909: 97, 1918a: 62, 66; Thomas, J. B. 1957: 4; Wood, S. L. 1963: 93. (**ms**) Balch, Webb, & Fettes 1955a; Craighead 1942b; Daviault 1974; Hopkins 1908e: 347, 1910a; Swaine 1925c: 262.

engelmanni Hopkins 1909a: 130. Holotype ♀; Capitan, New Mexico [USA]; USNM, Washington. Synonymy: Wood 1963: 95.
References: (**ay**) Cerezke 1964: 488; Hopkins 1909a: 130–133; Lyon 1958: 583. (**bv**) Anonymous 1953b; Knight 1961; Nagel 1953: 32; Shepherd 1965: 212. (**cn**) Alexander 1958: 14; Anderson, R. F. 1948: 140, 1960: 225; Annand 1944: 6, 1945: 20, 33, 1946: 30, 1947: 34, 1949: 10; Anonymous 1940i: 580, 1946h, 1952e: 96, 1953b, 1955c: 10, 1955j: 5, 1956p: 110, 1958a: 3, 6, 1960: 3, 1960g: 6, 1960h, 1960i, 1960j: 1, 1960k, 1960q, 1961h, 1961s, 1962b, 1962h, 1963: 16, 1963y, 1964u; Bailey 1955: 40–41, 1957: 31–38; Balch, Webbs, & Fettes 1955b: 453–465; Baldwin, P. H. 1965: 79; Beal 1951: 58–59; Becker, W. B. 1951; Benedict 1959: 245–259; Bloch 1946: 102–103, 1950a: 24–26, 1950b: 78–84, 1951: 22; Bongberg 1956a, 1957, 1960: 62, 1962; Brown, C. E., Cumming, & Robins 1957: 74, 1958: 67; Brown, C. E., Robins, & Stevenson 1960: 85, 1961: 85; Brown, C. E. & Stevenson 1963: 97; Buckhorn & Orr 1961: 19, 1962: 18; Buell 1953; Carhart 1949: 14–15, 41–42; Chansler 1959: 124; Chrystal 1949b; Craighead 1944, 1947, 1951, 1952; Craighead & Brown 1945: 4; Davis & Nagel 1956: 210–211; Doane et al. 1936; Dowden 1951: 216, 1953: 216, 1959: 267–270; Epley 1953; Escherich 1912a, 1913; Essig 1926: 512; Evenden 1937, 1953: 56–57; Felt 1924: 252–259, 1926: 259, 1930a: 249, 259; Findlay 1959: 1–7; Fitzgerald 1954: 24–25,

53–56; Forbes 1956; Funk 1950; Gardiner 1950: 105; Graham 1939b, 1952; Grinols 1952; Haeussler 1952: 145; Hatch 1938: 193; Heddergott 1952; Hetson 1950: 182–183; Hopkins 1908c: 161, 1909b: 126–132, 1909c: 58–59, 1909d: 574, 1910f: 2, 1910g: 57, 1912b: 36; Hoyt 1951a: 50, 1951b: 15, 1952: 41, 68, 1953: 20–21; Hunt 1954: 14; Jannone & Binaghi 1959; Johnson, Philip C. 1958; Keen 1938: 126, 1952c: 129, 163, 1958: 175, 178–179; Kelly 1948: 14; Kenney et al. 1950: 73, 1951: 63–64; Kinghorn 1955a: 501; Knight 1957: 47–48, 1958: 90, 1958: 603–607, 1960a: 249–252, 1960c: 1–4, 1961; Knight, McCambridge, & Wilford 1956; Knight & Wilford 1954: 2–8; Knight et al. 1956: 1; Koplin 1967: 2187; Landgraf 1959: 1–19; Landgraf & Ostmark 1958: 4; Lejeune 1959: 66–68; Lucht & Moore 1963: 17; Massey 1947: 6, 1953: 31, 1956a: 14, 1956b: 110; Massey & Wygant 1954: 1, 18–23, 35; Massey et al. 1953a: 951–955; McComb 1955: 1; McGugan et al. 1958: 75–76, 1959: 1–114; Mielke 1950: 882–888; Miller, P. C. 1970: 206–212; Mitchell, M. E. & Love 1973; Morse 1953a: 13, 1953b: 16, 1953c: 35, 1953d: 14, 1953e: 34, 1953f: 17; Morse et al. 1953: 56–63; Mote 1945a: 36; Mueller 1959: 1; Nagel 1958: 90; Nagel & Chansler 1959: 131; Nagel et al. 1956a: 48, 1956b: 20, 1957: 894–898; Neff 1955: 10; Nelson 1950: 182, 1954: 503–505; Nordwall 1953: 798; Olson 1953: 30; Orr, P. W. 1963a, 1963b, 1966; Orr, P. W. & Pettinger 1964; Orr, P. W., Pettinger, & Dolph 1965, 1966; Ostmark 1957: 48; Ostmark & Wilford 1956: 2–3; Parker 1959: 60–62; Prater 1951: 18–21; Prebble 1944: 48; Price 1955: 13–17, 1956: 21–26, 1957: 81–99, 1958: 56–69; Retting 1952: 50–51; Richmond 1951: 54, 1953a: 43, 1953b: 48; Richmond & McGuffin 1945: 43; Ronco 1961: 1–6; Ross & Jones 1951: 114, 121–123; Rudinsky 1960a; Salter 1949: 66; Schaeffer 1954: 860–862; Schwerdtfeger 1959a: 43; Shuder 1969: 76; Silver & Ross 1956: 95, 1957: 82, 1958: 75, 1959: 88, 1960: 98, 1961: 98, 1962b: 111, 1963a: 110; Smith, G. W. 1953: 14, 1955: 208–209; Sommers 1953: 60; Spencer 1945: 9–11; Strobl 1948c: 62; Swaine 1910d: 42, 1917: 321–328, 1918a: 65; Terrell 1950: 1–18; Thomson 1951: 4, 1954: 45; Thomson & Walters 1951: 3; Tunnock 1963: 11; Vaux 1954: 506–510; Villarreal Martinez 1957: 11–19; Watts 1950: 11, 40, 54; Wear & Buckhorn 1955: 13; Webb 1908: 117; Whiteside 1957: 34–40; Wilford 1953: 30, 1957: 15, 1960: 458; Wygant 1945: 14, 1958: 181–184, 1959: 274; Wygant & Nelson 1949: 417–422; Wykoff et al. 1947: 36; Yasinski 1956: 2–3; Yasinski & Pierce 1958: 5–12; Yeager 1953: 596–616. (**ec**) Amman & Baldwin 1960: 699–706; Anonymous 1962a, 1962b; Baldwin, P. H. 1960, 1965: 79; Bethlahmy 1974, 1975; Bue 1955; Burks 1979: 799; Bushing 1965: 458; Callaham & Shifrine 1960: 146; Carhart 1949; Cole 1973: 286; Craft 1955; Craighead et al. 1927: 10; Davidson 1951: 560, 1954: 485, 1955: 58–67, 1958: 661–670; Graham 1939b, 1952, 1956; Hawkworth & Hinds 1959; Hopkins 1909b: 126–132; Keen 1938: 126; Kendrick 1962: 776; Knight 1957: 47, 1958b: 603, 1961a, 1961b; Knight, McCambridge, & Wilford 1956; Knight et al. 1956: 1–12; Love 1955: 113–118; Mason, W. R. M. 1978; Massey 1956: 14, 24, 1956: 110, 1962a: 95; Massey & Wygant 1954: 1; Miller, P. C. 1965: 6913–6914; Nordwall 1953: 798; Ostmark 1957b: 48; Otvos 1965: 1186; Poinar 1972, 1975: 153; Reid 1963a: 23; Richerson, J. V. & Borden 1972a; Ronco 1961, 1967; Terrell 1954: 1; Wickerham 1960. (**hb**) Anderson, R. F. 1960: 225; Anonymous 1953b, 1960: 3, 1960k; Baldwin, P. H. 1960; Bongberg 1959a; Chamberlin 1939: 161, 1958: 75–76; Craighead 1953; Doane et al. 1936; Essig 1926: 512; Felt 1926: 259, 1930a: 249, 259; Graham 1939b, 1952; Hopkins 1909a: 71, 130–133, 1909b: 126–132; Keen 1938: 126, 1952b: 129, 163; Knight 1961: 209; Kozikowsky 1913: 341; Massey 1953: 31; Massey & Wygant 1954: 1; McCambridge 1967a; McComb 1955: 1; McMullen & Atkins 1961: 197; Nagel 1953: 32; Nagel & Davis 1956: 20; Schwerdtfeger 1959a: 43; Smith, G. W. 1953: 14; Swaine 1918a: 65; Terrell 1954: 1; Yeager & Riordan 1953: 596. (**ds**) Annand 1944: 6; Anonymous 1958a: 3, 6, 1960: 6, 1962z, 1963y, 1964u; Bongberg 1956a, 1957; Brown, C. E., Cumming, & Robins 1957: 74, 1958: 67; Brown, C. E., Robins, & Stevenson 1961: 85; Brown, C. E. & Stevens 1963: 97; Chamberlin 1917: 324, 1925, 1939: 161, 1958: 75–76; Craighead 1953; Essig 1926: 512; Evenden 1937; Felt 1926: 259, 1930a: 249, 259; Gredley et al. 1922; Hagedorn 1910d: 20; Hopkins 1909a: 130–133, 1909b: 126–132; Jannone & Binaghi 1959; Keen 1929a: 18, 1938: 126, 1952c: 163, 129; Kleine 1912b: 176, 1914b: 386, 1934a: 132; Knight 1961; Leng 1920: 338; MacKay 1950: 114–115; McComb et al. 1953: 3; Murayama 1957a: 36; Patterson & Hatch 1945: 149; Reid 1963a: 231; Schuder 1969: 76; Wood, S. L. 1951a: 127. (**tx**) Anderson, R. F. 1960: 225; Chamberlin 1939: 161, 1958: 75–76; Hagedorn 1910a: 60; Hopkins 1909a: 130–133; Keen 1928a: 18; Muesebeck 1942: 95, 1950: 131; Swaine 1918a: 65; Wood, S. L. 1963: 93–95. (**ms**) Block 1950a, 1950b, 1951a, 1951b, 1952; Bongberg 1956b, 1959a; Carhart 1949; Davis & Nagel 1956; Funk 1950; Furniss, M. M. 1962a; Hatch 1938: 193; Hill 1954; Hunt 1954: 14; Kelly 1948: 14; Morse 1953a: 13, 1953b: 16, 1953c: 35, 1953d: 14, 1953e: 34, 1953f: 17;

Mueller 1959: 1; Neff 1955: 10; Olson 1953: 30; Prater 1951: 18; Prebble 1944: 48; Retting 1952: 50; Thomson, M. G. 1954: 45; Wichmann 1961: 331.

borealis Hopkins 1909a: 133. Holotype ♀; Eagle, Alaska [USA]; USNM, Washington. Synonymy: Wood 1963: 96.

References: (**ay**) Hopkins 1909a: 133–135. (**cn**) Anderson, R. F. 1960: 27; Anonymous 1958a: 4, 7, 1960j: 2,4, 1961h, 1963y; Bongberg 1956a, 1957, 1962; Brown, C. E. & Stevenson 1963: 97; Crosby 1963; Doane et al. 1936; Downing 1957: 112, 1959; Essig 1926: 512, 1958: 513; Evans, D. 1949: 107, 1952: 140; Evans, D. & Dyer 1951: 110; Felt 1924: 260, 1926: 260, 1930a: 249, 260; Hewitt 1917: 35, 37, 40; Hopkins 1902e, 1909b: 132–136; Hopping, R. 1921: 10, 1946: 3–8; Jannone & Binaghi 1959; Keen 1938: 127, 1952c: 164; MacKay 1948: 93, 1949: 114–115; Massey 1956a: 17; Massey & Wygant 1954: 5; Schuder 1969: 76; Silver & Ross 1960: 98, 1961: 98, 1962b: 111, 1963a: 110; Swaine 1910d: 42, 1913: 41–43, 1918a: 61, 66, 1924d: 1–26; Twinn 1934: 123; Washburn & Downing 1960. (**ec**) Hopkins 1909b: 132, 136; Keen 1938: 127; Massey 1962: 67–75; Massey & Wygant 1954: 5; Poinar 1975: 153; Swaine 1924d: 1, 1925a: 262. (**hb**) Anderson, R. F. 1960: 227; Bongberg 1959a; Chamberlin 1939: 163–164, 1958: 76–77; Doane et al. 1936; Essig 1926: 512, 1958: 513; Evans 1952: 140; Felt 1926: 260, 1930a: 249, 260; Hopkins 1909a: 133–135; Keen 1938: 127, 1952c: 164; Massey & Wygant 1954: 5; Swaine 1918a: 61, 66, 1924d: 1. (**ds**) Anderson, R. F. 1960: 227; Anonymous 1958a: 4, 7, 1963y; Blatchley & Leng 1916: 655; Bongberg 1956a, 1957; Bongberg & Bennett 1960: 1–10; Brown, A. W. A. 1940a: 8, 1955: 104; Brown, C. E. & Stevenson 1963: 97; Chamberlin 1925, 1939: 163–164, 1958: 76–77; Essig 1926: 512, 1958: 513; Evans 1952: 140; Felt 1926: 260, 1930a: 249, 260; Hagedorn 1910d: 20; Hopkins 1909a: 133–135, 1909b: 132, 136; Hopping, R. 1921: 10, 1922: 131; Jannone & Binaghi 1951; Keen 1929a: 18, 1938: 127, 1952c: 164; Kleine 1912a: 218, 1912b: 176, 1934a: 132; Leng 1920: 338; MacKay 1948: 93, 1949: 114; McGuffin & Reid 1952: 98; Sherman 1910: 197; Shuder 1969: 76; Van Dyke 1924: 25. (**tx**) Anderson, R. F. 1960: 227; Blatchley & Leng 1916: 655; Chamberlin 1939: 163–164, 1958: 76–77; Hagedorn 1910a: 60; Hopkins 1902e, 1909a: 133–135; Keen 1929a: 18; Muesebeck 1942: 95, 1946: 427, 1950: 131; Swaine 1918a: 61, 66; Wood, S. L. 1963: 96. (**ms**) Bongberg 1959a; Swaine 1925c: 262.

***simplex* LeConte** 1868: 173. Lectotype ♂; Canada; MCZ, Cambridge, designated by Wood 1982b: 197. Figures: Ives & Wong 1988: 78, Wood 1963: 9, 13. Distribution: North America (Alaska/ all provinces in Canada/ Maine, Michigan, Minnesota, New Hampshire, New York, Vermont, West Virginia in USA).

Hosts: *Larix laricina*.

References: (**ay**) Cerezke 1964: 488; Duncan, B. 1987; Furniss, M. M. 1976b; Hopkins 1909a: 117–121; Langor 1987; Schofer & Lanier 1970: 1487–1488; Stock, M. W., Gregoire, & Furniss 1987; Thomas, J. B. 1957: 4, 1967. (**bv**) Baker, B. H., Hostetler, & Furniss 1977; Baker, W. L. 1972: 248; Barr, B. A. 1969: 641; Benoit & Blais 1984; Bergdahl 1982; Inscoe 1982; Langor 1985; Langor & Raske 1987; Schooley & Pardy 1981; Werner 1986; Werner et al. 1983. (**cn**) Anderson, R. F. 1960: 228; Anonymous 1967f, 1977x, 1978z, 1979a, 1979b, 1980, 1981, 1981e, 1983c, 1984c, 1987d, 1988d; Applejohn 1965; Baker, B. H., Hostetler, & Laurent 1975, 1977; Baker, B. H. & Laurent 1975; Baranyay & Stevenson 1966: 85; Benoit & Blais 1984; Benoit et al. 1982, 1983; Bergdahl 1982; Bergdahl, Smeltzer, & Halik 1984; Blackman 1950; Britton 1915, 1916: 125–134; Brown, C. E., Hopkins, & Robins 1960: 86; Brown, C. E. & Stevenson 1964: 99; Browne 1968b: 227; Caltrell 1969, 1970; Clarke, L. J. 1982: 24; Clarke, L. J. & Carew 1981, 1983a, 1983b, 1983c, 1984, 1984b, 1985, 1986, 1987, 1988; Clarke, L. J. et al. 1979: 26, 1980: 26, 1981: 27; Dearborn & Stark 1986: 7; Doane et al. 1936; Drooz 1985: 349; Emond, F. J. 1969; Fall & Cockerell 1907: 218; Felt 1906: 752, 1924: 261, 1926: 247, 257, 1930a: 256; Felt & Rankin 1932: 405; Foster, H. R. 1961, 1962, 1963, 1964; Gautreau 1970; Grisdale 1962; Grisdale & MacLeod 1962; Herrick 1935: 138; Hewitt 1914: 501–518, 1917: 36; Hodson & Christenson 1941: 1–12, 1942: 1–9; Hofacker, Loomis, & Tucker 1984: 55; Holsten, Eglitis, & Laurent 1981; Holsten, Laurent, & Averill 1980: 64; Holsten, Werner, & Laurent 1980; Hopkins 1898a: 105, 1898d: 68, 1899a: 343, 1899c: 394, 1907c: 515, 1909b: 103–106; Hostetler, Rush, & Laurent 1976, 1977; Howse et al. 1981: 40; Ives & Wong 1988: 79; Jackson, G. G. 1962; Jansons 1963, 1964; Kondo & Moody 1987: 20; Kondo & Taylor 1985, 1986; Lachance et al. 1981, 1984; Langor & Raske 1984, 1989; Lanier 1981; Layton, C. R. 1966, 1967, 1969, 1970; Lindquist, O. H. & Syme 1981: 38; Livesey, F. 1966; Lyons 1956: 602; Magasi 1977a, 1977b, 1979, 1980, 1981a, 1981b, 1982a, 1982b, 1983, 1984a, 1984b, 1985, 1986a, 1986b, 1987, 1988, 1989; Martineau 1985: 43; McGuffin & Barker 1947: 57; McGugan et al. 1959: 1–114; Mills 1983; Moody 1988: 19; Moody, Singh, & Clarke 1978: 4, 1979a, 1979b, 1979c, 1980, 1982; Mortenson, Emond, & Melvin 1974; Newell, R. 1977, 1978; Packard 1890: 722; Petty

1967; Pierson 1927: 79; Prentice & Hildahl 1959: 65; Rose, A. H. & Lindquist 1980; Rudinsky 1979a: 407; Rush 1977, 1986; Rush et al. 1978: 35; Sajan 1981; Schooley & Pardy 1981; Silver & Ross 1960: 98, 1961: 98, 1963a: 117; Singh & Clarke 1980: 10, 1981: 6, 1982a: 4, 1982b: 3; Singh, Moody, & Clarke 1982; Sippel, MacDonald, & Rose 1960: 61, 1961: 61, 1962: 69; Sterner & Davidson 1981: 8, 1982, 1983: 14; Susut 1967, 1969; Swaine 1906: 515, 1913: 89, 1913: 41–43, 1918a: 61, 62, 1925: 261–266; Syme & Nystrom 1988: 38; Teillin, Burns, & Kelley 1981, 1982, 1983, 1986: 25; Teillon, Kelley, & Schultz 1980; Teillon, Kelley, & Keenan 1979; Thomson 1964; Trieselman 1963; Trinnell 1962; Tripp & Blauel 1969: 104; Tripp & Robins 1968: 101; Tripp, Robins, & Blauel 1970: 89; Unger 1975, 1976, 1978a, 1978b, 1978c, 1979; Unger & Fiddick 1979; Weed & Fiske 1898: 69; Weir & Biggs 1974; Wescott 1970; Wever 1942: 79; Wilson, L. F. 1977: 70; Yarger, Holsten, & Laurent 1978. (**ec**) Baker, B. H., Hostetler, & Furniss 1977; Blackman & Stage 1918: 39; Bushing 1965: 459; Felt 1906: 752; Furniss, R. L. & Carolin 1977: 361; Graham 1947: 63–65; Heqvist 1957b: 44; Hirschmann 1972a; Hirschmann & Wisniewski 1982, 1983; Hopkins 1909b: 103–106; Hurlbutt 1967; Langor 1985; Langor & Raske 1988b; Mason, W. R. M. 1978; Mills 1983; Swaine 1925c: 263; Tomalak, Welch, & Galloway 1989b: 17; Viereck 1925; Woodring & Moser 1970. (**hb**) Anderson, R. F. 1960: 228; Baker, B. H., Hostetler, & Furniss 1977; Baker, W. L. 1972: 248; Blackman 1950; Blackman & Stage 1918; Bright 1976d: 62; Browne 1968b: 227; Chamberlin 1939: 162; Comtois 1988: 172; Cooper & Stephen 1978: 574; Doane et al. 1936; Drooz 1985: 349; Eidmann 1962: 161; Evans 1952: 140; Felt 1906: 752, 1926: 247, 257, 1930a: 256; Felt & Rankin 1932: 405; Fronk 1947; Furniss, M. M. 1976b; Furniss, R. L. & Carolin 1977: 361; Gobeil 1936c; Harrington 1884b, 1891: 27; Herrick 1935: 138; Holsten, Werner, & Laurent 1980; Hopkins 1899a: 343, 1899c: 392, 447, 1909a: 117–121; Ives & Wong 1988: 79; Kaston & Riggs 1937: 98; Langor 1985; Langor & Raske 1984, 1987a, 1987b; Lyons 1956: 602; Martineau 1985: 43; Mills 1983; Peirson 1927: 79; Pierce 1907: 294; Prebble 1933: 145–146; Reid 1956: 16; Rose & Lindquist 1980: 59; Schooley & Pardy 1981; Schwarz 1889d: 175; Simpson 1929: 274–279; Swaine 1911b: 81, 1912b: 142, 1918a: 61–62; Weed & Fiske 1898: 69; Werner 1986; Wilson, L. F. 1977: 70; Wolcott & Montgomery 1933: 165; Wood, S. L. 1963: 103, 1982b: 197. (**ds**) Anderson, R. F. 1960: 228; Anonymous 1926c: 516, 1967f, 1976x, 1978z; Ashworth et al. 1981; Baker, B. H., Hostetler, & Furniss 1977; Baker, B. H., Hostetler, & Laurent 1977; Baranyay & Stevenson 1966: 85; Beaulne 1956; Blackman 1950; Blatchley & Leng 1916: 653; Bright 1971a: 125, 1976d: 62; Brown A. W. A. 1940a: 23; Brown, C. E., Hopkins, & Robins 1960: 86; Browne 1968b: 227; Chamberlin 1925, 1939: 162; Cockerell et al. 1907; Deyrup 1981b: 4; Dodge 1938; Drooz 1985: 349; Drouin & Turnock 1967; Duncan, B. 1987; Evans, D., Lowe, & Hunt 1978; Evans, J. W. 1952: 140; Felt 1926: 247, 257, 1930a: 248, 256; Felt & Rankin 1932: 405; Ferrer 1942; Furniss, R. L. & Carolin 1977: 361; Hagedorn 1910d: 23; Harrington 1891: 27; Henshaw 1882: 269, 1885: 149; Hopkins 1909a: 117–121, 1909b: 103–106; Kleine 1912b: 176, 1914b: 395, 1934a: 133; Kusch 1967; Leng 1920: 338; Leonard 1928: 516; Lindquist, O. H. & Syme 1981: 38; Morgan, Anne, Morgan, & Elias 1985c; Provancher 1878: 13–14; Schwarz 1886: 56; Still, Tidsbury, & Melvin 1974b; Swaine 1909: 99, 1911b: 81; Syme & Nystrom 1988: 38; Wickham 1896a: 310; Wolcott & Montgomery 1933: 165; Wood, S. L. 1963: 103, 1972a: 406, 1982b: 197; Woods 1963. (**tx**) Anderson, R. F. 1960: 228; Benoit 1985: 89; Blatchley & Leng 1916: 653; Bright 1976d: 62; Chamberlin 1939: 162; Dietz 1890: 28, 31; Dodge 1938: 14, 26–27; Gemminger & Harold 1872: 2672; Hagedorn 1910a: 60; Hopkins 1909a: 117–121, 1915c: 199; Ives & Wong 1988: 78; Jacques 1951: 351; Kusch 1967; LeConte 1868: 173, 1876: 384–385; Lindquist, O. H. & Syme 1981: 38; Muesebeck 1942: 95, 1950: 131; Pardy 1974, 1983; Provancher 1878; Schedl 1938f: 38, 1940a: 339; Schwarz 1886: 56, 1888: 162, 1889d: 175; Swaine 1909: 99, 1918a: 61–62; Syme & Nystrom 1988: 38; Thomas, J. B. 1957: 4, 1965c, 1967; Titus, Meikle, & Harrison 1985: 56; Wood, S. L. 1963: 9, 13, 103, 1972a: 406, 1982b: 197. (**ms**) Langor & Raske 1988a; Swaine 1912b: 142, 1925c: 263.

***terebrans* (Olivier)** 1795b: 6 (*Scolytus*). Syntypes ♀, sex?; Amerique Septentrionale [USA]; MNHN, Paris (?), not found there.

Figures: Kowal 1961b: 10, Wood 1963: 7, 11, 13.

Distribution: North America (Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Indiana, Louisiana, Maryland, E Massachusetts, New Jersey, New York, North Carolina, Pennsylvania, South Carolina, E Texas, Virginia, West Virginia in USA).

Hosts: *Pinus echinata, P. elliottii, P. palustris, P. rigida, P. serotina, P. strobus, P. taeda*.

References: (**ay**) Godwin & Franklin 1978; Hopkins 1894g: 274–280, 1906b: 145, 1909a: 147–150; Hughes 1973c; Miller, M. C. 1979a, 1979b, 1981; Payne et al. 1973; Sanders 1960: 4; Stock, M. W., Gregoire, & Furniss 1987; Thomas, J. B. 1967. (**bv**) Anderson, R. F. 1961; Anonymous 1979a; Atkinson, Foltz, & Connor 1988; Baker, W. L. 1972: 244; Barker, J. A. 1976; Barker, J. A. & Schmid 1976; Barr, B. A. 1969: 641; Bennett & Ciesla 1972; Birch 1978b; Cameron, R. S. 1987;

Clark 1970; Drew 1977; Fatzinger et al. 1987; Godbee 1974; Godbee & Franklin 1976, 1978; Goldman, Cleveland, & Parker 1978; Goldman & Parker 1978a; Hetrick 1960; Hodges & Pickard 1971: 50; Hughes 1973c, 1975; Krawielitzkl et al. 1983; Payne & Wood 1981: 492; Payne et al. 1987; Phillips 1988: 430; Phillips et al. 1988, 1989; Rauschenberger 1968; Siefried et al. 1986; Smith, R. H. 1957: 241, 1963a: 817; Smith, R. H. & Lee 1972; Thatcher, R. C. & Connor 1985; Turnbow & Franklin 1980; Vite, Gara, & Scheller 1964: 461–470; Vite & Pitman 1967: 683–701; Wagner, Flamm, & Coulson 1985; White, R. A. 1980b. (**cn**) Adams 1937: 3; Anderson, D. A. 1947: 7–8; Anderson, R. F. 1960: 223, 1966; Anonymous 1943a: 1, 1952h: 7, 1955j: 14, 1958a: 4, 7, 1958j: 8, 1960a, 1960c, 1960f, 1960i, 1960j: 21, 1960m, 1960n, 1960p, 1960q, 1961g, 1961h, 1961q, 1961s, 1962h, 1962v, 1962w, 1962x, 1964h, 1964s, 1964u, 1964y, 1965b, 1965r, 1966f, 1966h, 1966u, 1967f, 1967t, 1968g, 1968p, 1969e, 1969m, 1970h, 1970j: 6, 1970t, 1971e, 1971h: 4, 1971v, 1972f, 1973b, 1973j: 47, 1974e, 1974w: 8, 1975d, 1976e, 1977u, 1977v: 42, 1979a, 1980v, 1981u, 1985k: 45; Bailey 1976; Baker, W. L. 1972: 244; Barker & Nettles 1954: 6; Beal 1958; Beal et al. 1952: 50–51; Bean 1966: 43; Becker, W. 1972a, 1972b; Bennett, W. H. 1954, 1955: 2–4, 8–12, 1956a: 2, 10–13, 1958, 1958b, 1962, 1965a: 358, 1966; Bennett, W. H. & Ostmark 1959, 1972; Bennett et al. 1958: 1–35; Berisford et al. 1986; Blackman 1950; Bongberg 1956a, 1962; Briegleb 1955: 68, 1956: 50, 1957: 67–68, 1958: 9; Bucera, Ward, & Wallace 1970; Buchanan 1964, 1965: 35; Cameron, R. S. 1987; Ciesla 1969; Clark 1970: 151–152; Clements 1974; Clements & Williams 1981; Clerke & Ward 1972b; Coleman 1977, 1982; Cooper 1958: 22–23; Coulson & Witter 1984: 530; Craighead 1930: 4, 1935: 136, 1951; Craighead & Middleton 1930; Cross 1953: 34; Demon 1955: 74–75, 1956: 74–75; Doane et al. 1936; Downing, Ciesla, & Rauschenberger 1968; Downing, Ward, & Ciesla 1970: 29; Drew 1978; Drooz 1985: 346; Ebel, Merkel, & Kowal 1964, 1968, 1971, 1975, 1977; Eikenbary, Arnold, & Pinkston 1974; Elliot & Mobley 1938; Fatzinger 1985a, 1985b; Fatzinger & DeBarr 1969: 1–4; Fatzinger et al. 1987; Feduccia & Mann 1975; Felt 1901: 480–481, 1902b: 64, 1906: 343, 1924: 262, 1926: 248, 262, 1930a: 248, 262; Felt & Bromley 1942: 170, 1944: 213; Felt & Rankin 1932: 406; Ferguson, Gibbs, & Thatcher 1960: 1–25; Fiske 1858; Fitch 1858: 728; Flory et al. 1955: 8; Friend 1942b: 145; Gentry, G. R. et al. 1979: 795; Goldman, Cleveland, & Parker 1979; Graham 1939b; Hamel 1980: 771; Hammerle 1952; Harrington 1881: 32; Harris 1826, 1841: 72, 1842: 72, 1852a: 75–76, 1862: 86, 1890: 86; Harrison 1956; Hepting 1952; Hertel & Williams 1975; Hertel, Williams, & Merkel 1977; Hetrick 1957, 1960; Hodges & Pickard 1971: 49; Hofacker & Loomis 1982: 26, 1983: 28; Hofacker, Loomis, & Gilstrap 1988: 62; Hofacker, Loomis, & Tucker 1984: 42, 1987; Hofacker et al. 1989; Hoffard & Oak 1980; Hopkins 1892b, 1893a: 143, 1894b: 213, 1894c, 1894d, 1897c: 141, 1899a: 343, 1899b: 27, 1899c: 284, 333, 415, 447, 1901i, 1904b: 12, 1905: 81, 145, 147, 1909b: 146–153, 1909c: 62, 1910d, 1910g: 61; Hoyt 1951: 16, 1952: 40, 1953: 22; Jackson et al. 1954: 26; Jones 1951: 16, 1952, 1953: 22; Jones & Ford 1952: 1–4; Jordan & Dyer 1956: 1–12; Keen 1949b: 427; Kislow, Jones, & Hastings 1979; Koch, P. 1972; Kowal 1950b: 28, 1953: 106, 1955d: 4, 1956a: 5, 1957b: 20, 1957d: 175, 1957e: 6, 1958a: 402, 1959a: 39, 1959b: 160, 1960c, 1961b, 1961d, 1962, 1964; Kowal & Coyne 1952: 91; Kowal & Ebel 1971, 1977; Kucera, Ward, & Wallace 1970: 104–106; Landgraf 1966b; LeBaron 1871: 42; Lee 1954a: 5; Lee & Coyne 1955: 4; Lee & Smith 1953: 105, 1955: 1–14; Lewis 1973; Livingston 1956: 55; Loomis, Hofacker, & Tucker 1986; Lugger 1899a: 317; Mask 1982; Mason, G. N. & Jones 1969: 5; Massey 1956a: 17; Merkel 1957: 119, 1977, 1978, 1979, 1981; McCambridge 1958: 1, 8; McCambridge & Kowal 1957: 4–5; Merkel & Kowal 1956: 3; Merkel & Kulman 1955: 4; Miller, M. C. 1979a, 1979b; Mistretta 1978: 51; Moore, G. E. 1977a, 1978b, 1982; Moore, G. E. & Thatcher 1973b; Moser 1989; Nagel 1959: 4; Neal 1979: 795; Nieland 1943: 8; Nord, Jones, & Hastings 1985; O'Byrne 1946: 1–4, 7; Ollieu & Mason 1967: 7, 1968: 8; Orr & Kowal 1956: 655; Ostrou 1955: 104; Outcalt & Stubbs 1979; Overgaard, Balmer, & Roberts 1977; Packard 1890: 721, 858; Payne & Wood 1981: 492; Pechanac 1957: 41–42, 1958: 47; Phelps 1977; Polioka 1938: 130, 1940: 230; Price, T. S. & Godbee 1978; Rauschenberger 1968; Robertson, R. L. & Whitefield 1968c: 1–8; Robinson, J. V. 1981; Ross & Mattoon 1939: 48; Ross, E. W. 1982; Rudinsky 1960a; Ruhm 1958: 319; Saunders 1879: 182, 1880: 5, 1884: 55; Schwerdtfeger 1959a: 43; Seal 1964; Smith, E. A. 1877: 1–55; Smith, J. B. 1900: 364; Smith, R. F. 1961; Smith, R. H. 1954a: 155–157, 1954b: 100, 1955a: 1–3, 1955b: 99–100, 1958: 190–194, 1962: 113–116; Smith, R. H. & Kowal 1968: 1430; Smith, R. H. & Lee 1957: 1–7, 1967: 1–12; Smith, R. K. 1961; Stephenson 1956: 220–221; St. George 1929b: 11, 1949: 97; Stewart, K. F. 1965; Stokes 1975d; Swaine 1918a: 61, 64, 1925: 261–266; Thatcher, R. C. 1957: 7, 1960, 1973; Thomas, C. 1876: 146; Wagner 1984; Walker 1956: 1–8; Walker, L. C. 1968; Ward, J. D. G., Kucera, & Downing 1971: 30; Williams, I. L. 1980; Wootten 1963: 23; Younan 1979. (**ec**) Baker, W. L. 1972: 244; Barras 1969: 520; Barras & Perry 1971b; Becker, G. 1952b; Bennett & Tatter 1988; Birch 1978b; Blakeslee & Oak 1979; Bridges 1978, 1981; Drew 1977; Fatzinger & DeBarr 1969; Felt 1906: 342; Godbee 1974; Godbee & Franklin

1978; Goldman, Cleveland, & Parker 1978: 373; Graham 1939b; Hetrick 1949c, 1960; Highley & Tatter 1985, 1987; Hill, T. M. & Fox 1972; Himes & Skelly 1972; Hirschmann & Wisniewski 1982, 1983; Hodges & Pickard 1979: 47, 50; Holt 1961: 93; Hopkins 1897c: 141, 1901b: 12, 1909b: 146–153; Kowal 1960c; Lindquist & Hunter 1965; Lorio 1973; Massey 1962: 67–75, 1966a; Moser 1976: 812, 1989; Moser & Branham 1988; Nelson & Beal 1929: 1102; Poinar 1975: 156; Rane & Tattar 1983, 1987; Rauschenberger 1968; Smith, R. H. 1963a; Smith, R. H. & Lee 1972; Swaine 1925c: 262; Tattar et al. 1981; Thatcher, R. C. 1973; Wagner, Flamm, & Coulson 1985; Wilkinson et al. 1978; Woodring 1966c: 123; Woodring & Moser 1970; Younan 1979. (**hb**) Anderson, R. F. 1960: 223, 1961; Anonymous 1970j: 6, 1979a, 1985k: 45; Atkinson, Foltz, & Connor 1988; Baker, W. L. 1972: 244; Beal & Massey 1945; Becker, W. 1972b; Bennett, W. H. 1955, 1956a, 1960b; Blackman 1922b, 1950; Bongberg 1956a, 1959a; Chamberlin 1939: 167; Chittenden 1890; Ciesla 1969; Clark 1970; Coleman 1977; Coulson & Witter 1984: 530; Craighead 1953; Deyrup & Atkinson 1987a: 64; Doane et al. 1936; Drooz 1985: 346; Eikenbary, Arnold, & Pinkston 1974; Fatzinger 1985a, 1985b; Felt 1906: 342, 1926: 248, 262, 1930a: 248, 262; Felt & Valens 1932: 406; Fiske 1858; Flamm & Coulson 1988; Godbee 1974; Godbee & Franklin 1976, 1978; Goldman, Cleveland, & Parker 1978; Goldman & Parker 1978a, 1978b; Graham 1939b; Harris 1841: 72, 1862: 86; Hoffmann & St.George 1949: 71; Hopkins 1894g, 1899a: 343, 1899c: 284, 333, 415, 447, 1901b: 12, 1909a: 147–150; Koch, P. 1972; Kowal & Ebel 1971; Lee & Smith 1955: 2; Lewis 1973; Lugger 1899a: 317; Moore, G. E. 1982; Ostmark 1968; Packard 1890: 721; Pierce, W. D. 1907: 294; Price, T. S. & Godbee 1978; Robertson, R. L. & Whitefield 1968c; Saunders 1884: 55; Schwarz 1888a: 80; Schwerdtfeger 1959a: 43; Smith, R. H. 1957: 241; Smith, R. H. & Lee 1972; St. George 1929b: 11; Swaine 1918a: 61, 64; Thatcher, R. C. 1960; Thatcher, R. C. & Connor 1985; Thatcher, R. C., Coster, & Payne 1978; Wagner, Flamm, & Coulson 1985; Williams, I. L. 1980; Wood, S. L. 1963: 71, 1982b: 179; Younan 1979. (**ds**) Adams & Moore 1963; Anderson, R. F. 1960: 223; Anderson, R. L. & Barry 1980: 47; Anderson, W. W. et al. 1983; Anonymous 1958a: 4, 7, 1960q: 3, 1963j, 1963y, 1964h, 1964u, 1965b, 1965r, 1966f, 1966h, 1966u, 1967f, 1967t, 1968g, 1968p, 1969e, 1969m, 1970h, 1973b, 1973j: 47, 1974e, 1975d, 1976e, 1977u, 1977v: 42; Beal & Massey 1945; Becker, W. 1972a, 1972b; Bennett 1954; Blackman 1922b, 1950; Blackwelder 1947; Blandford 1895b, 1897a; Bongberg 1956a; Britton 1920a; Chamberlin 1925, 1939: 167; Chapuis 1869, 1873; Chittenden 1890; Cockerell 1893; Craighead 1953; Craighead & Middleton 1930; Deyrup & Atkinson 1987a: 64; Drooz 1985: 346; Felt 1926: 248, 262, 1930a: 248, 262; Felt & Rankin 1932: 406; Frost 1964: 144; Goldman, Cleveland, & Parker 1978; Hagedorn 1910d: 23; Hamilton 1895a: 346, 378; Henshaw 1885: 149; Hoffmann & St. George 1949: 71; Hopkins 1893a: 143, 1909a: 147–150, 1909b: 146–153; Howden & Vogt 1951; Kirk 1969, 1979; Kleine 1912b: 176, 1934a: 133; Lacordaire 1866: 361; Leng 1920: 338; Melsheimer 1853: 87; Merkel 1957: 119; Merkel & Kowal 1956: 3; Nagel 1959: 4; Ostmark 1968; Provancher 1877: 572, 1878: 13–14; Schwarz 1878d: 469, 1886: 56, 1888a: 80; Sherman 1910: 197; Smith, J. B. 1900: 364, 1910: 404; Smith, R. H. & Lee 1972; Snow 1907: 64; Swaine 1909: 99; Townsend 1889: 235; Turnbow & Franklin 1980; Ulke 1902: 56; Wickham 1896a: 309, 1896c: 168; Wood, S. L. 1963: 71, 1982b: 179. (**tx**) Anderson, R. F. 1960: 223; Beal & Massey 1945; Benoit 1985: 89; Blackman 1922b: 57–58; Blandford 1895b, 1897a: 146; Chamberlin 1939: 167; Chapuis 1869: 35, 1873: 243; Dietz 1890: 28–29; Eikenbary, Arnold, & Pinkston 1974; Erichson 1836: 53; Gemminger & Harold 1872: 2672; Hagedorn 1910a: 60; Hopkins 1909a: 147–150, 1915c: 199; Kowal 1961b: 10; Lacordaire 1866: 361; LeConte 1868: 173, 1876: 384–385, 1878a: 469; Lee & Smith 1955: 2; Lindeman 1879: 54; Muesebeck 1942: 95, 1950: 131; Olivier 1795b: 6; Provancher 1877: 572; Swaine 1909: 99, 1918a: 61, 64; Thomas, J. B. 1965c, 1967; Wood, S. L. 1963: 7, 11, 13, 71, 1982b: 179; Zimmermann 1868: 149. (**ms**) Anderson, R. F. 1966; Anderson, R. F. et al. 1980; Anonymous 1985k: 45; Beal 1958, 1961: 81; Bongberg 1959a; Eckstein 1900c; Foltz, Merkel, & Wilkinson 1984; Jones 1952; Kowal 1957b: 20; Lee 1954a: 5; Lee & Coyne 1955: 4; Lewis 1973; Mask 1982; Moore, G. E. & Thatcher 1973b; Moser & Branham 1988; Robinson, J. V. 1981; Ross, E. W. 1982; Smith, R. H. 1956: 7; Swaine 1925c: 262; Thatcher, R. C. 1957: 7; Thatcher, R. C. et al. 1981; Wagner 1984.

***valens* LeConte** 1859: 59. Holotype ♂; San Francisco, California [USA]; MCZ, Cambridge.

Figures: Balachowsky 1949a: 23, Ives & Wong 1988: 78, Swaine 1914: 2 (adult), 1918a:pl. 12 (adult), Wood 1963: 7, 11, 13.

Distribution: North America (Alberta, British Columbia, New Brunswick, Newfoundland, Northwest Territories, Nova Scotia, Ontario, Quebec, Saskatchewan in Canada/ Guatemala/ Honduras/ Baja California, Chiapas, Chihuahua, Distrito Federal, Durango, Hidalgo, Mexico, Michoacan, Morelos, Puebla, Tlaxcala in Mexico/ Arizona, California, Colorado, Idaho, Illinois, Indiana, Kansas, Maine, Massachusetts, Michigan, Minnesota, Montana, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Oregon, Pennsylvania, South

Dakota, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming in USA).

Hosts: *Pinus* spp., uncommon in *Abies* spp., *Larix laricina, Picea* spp.

References: (**ay**) Boving & Craighead 1931; Bruhn 1947: 21; Cerezke 1964: 482; Chapman 1969b, 1972; Dewey 1973: 180; Furniss, M. M. & Campos 1984; Hopkins 1906b: 147, 1909a: 151–157, 1911a: 15, 16; Hughes 1973c; Kaston 1936: 645; Lekander 1959b: 36; Lyon 1958: 583; Nunberg 1928a: 139; Powell 1905: 237; Sanders 1960: 4; Schedl 1931a: 75; Stickney 1921: 15; Stock, M. W., Gregoire, & Furniss 1987; Thomas, J. B. 1957: 4; Thomas, J. B. & Krywienczyk 1966; Ting 1936: 96. (**bv**) Anonymous 1979a; Baker, W. L. 1972: 246; Barr, B. A. 1969: 641; Eaton & Rodriquez 1967b; Evans, W. G. 1972; Gardner 1957a; Goheen et al. 1985; Hall, R. W. 1983; Hobson, Kubo, & Wood 1988: 439; Hughes 1973c; Lanier & Burkholder 1974; Miller, J. M. & Keen 1960: 103; Rudinsky 1966a: 106; Rudinsky & Michael 1973; Rudinsky & Ryker 1977; Ryker 1988; Ryker & Rudinsky 1976a; Schmitz 1988; Silverstein & Young 1976: 20; Stark, R. W. et al. 1968; Vite & Pitman 1967: 683–701; Wolfenbarger 1946: 61; Zethner-Moller & Rudinsky 1967: 575–582. (**cn**) Anderson, R. F. 1947: 7–8, 1960: 223, 1966; Anonymous 1958a: 3, 1960q, 1961h, 1962h, 1962i, 1962z, 1963j, 1963k, 1963y, 1964i, 1964y, 1965b, 1965c, 1965i, 1966f, 1966i, 1967f, 1967h, 1968h, 1969e, 1971i, 1972h, 1973b, 1974m, 1975e, 1978b: 35, 1978f, 1978z, 1979a, 1980a, 1980m: 32, 1981g, 1982c, 1983d, 1984d; Baker, W. L. 1972: 246; Barr, B. A., Hanson, & Koehler 1978; Bauman 1969: 166; Beal 1939: 12; Beal et al. 1952: 50–51; Beatty 1980: 13, 1983; Becker, G. 1951, 1952a, 1955d, 1959b: 173–174, 1972a, 1972b; Bennett 1983; Bess 1944: 14–16; Blackman 1931c, 1950; Browne 1968b: 227; Burke 1908: 115, 1932: 366, 1937: 29; Chaffin, Ramirez-Genel, & Krogstad 1966; Chamberlin 1924; Chenier & Philogene 1989; Compre 1915: 574; Coulson & Witter 1984: 530; Craighead 1927: 4–5, 1930: 4, 1951; Currie 1905: 74; DeLeon 1942b; Doane et al. 1936; Drooz 1985: 347; Eaton & Rodriguez 1967b: 21–24; Ebel, Merkel, & Kowal 1964, 1968; Ebel et al. 1959; Elliot & Mobley 1938; Erickson & Wood 1979: 6; Essig 1926: 514, 1958: 516; Evans & Dyer 1951: 110; Felt 1924: 263, 1926: 248, 263, 1930a: 248, 263; Felt & Bromley 1914, 1942: 170, 1944: 213; Felt & Rankin 1932: 406; Fiddick 1980; Fiddick & Van Sickle 1980: 7; Flake & Germain 1970: 24; Fuller & Hostetler 1980; Gentry, G. R. et al. 1979: 808; Gibson et al. 1987; Gillette 1903: 118–119; Gillman & Bailey 1977; Goulding et al. 1988: 37; Graham 1939b, 1952; Hagle et al. 1987: 35; Hall, R. W. 1984; Hamel 1980: 782; Herbert 1919: 337; Herrick 1935: 250; Hofacker & Loomis 1982: 7, 1983: 8; Hofacker, Loomis, & Gilstrap 1988: 49; Hofacker, Loomis, & Tucker 1984: 14; Hofacker et al. 1989; Hopkins 1899b: 14, 1902c: 12, 1903: 61, 1904a: 19, 46, 1905b: 81, 1905c: 11, 17, 1909b: 153–165, 1909c: 62, 1910d, 1910g: 61, 1912b: 6; Hopping, R. 1921: 12; Hoyt 1951b: 16–17, 1952: 16–17; James & Linnane 1980: 14; Johnson, D. W. & Averill 1983; Johnson, D. W. & Creasap 1978a; Jones & Ford 1952: 1–4; Keen 1929: 37–41, 1938: 109, 1949b: 427, 1952c: 142; Klein, W. H. 1966: 20; Klein, W. H. & McGregor 1966; Kliejunas 1985; Knight & Wilford 1954: 4; Kondo & Moody 1987: 109; Kondo & Taylor 1985; Kowal & Ebel 1971, 1977; Lann 1951: 38; Leech 1945: 66; Lessard & Fuller 1981; Lindgren, B. 1980a: 62; Lindquist, O. H. & Syme 1981: 38; Linnane 1984; Lister & Hildebrand 1984; MacAloney & Schmiege 1962; Martin, J. L. 1965: 40–43; Martinez, F. B., Islas, & Villa 1975; Merkel 1957: 119; Miller, J. M. & Keen 1960: 103; Moreno Noriega 1956: 23, 35; Neal 1979: 808; Orr, P. W. & Pettinger 1964; Ostmark 1956: 8; Ostmark & Wilford 1956: 6; Owen 1986: 4; Parr 1943: 419; Patterson, V. B. et al. 1973: 7; Pearson 1950: 154; Perry 1951: 159; Pierce, J. R. 1966: 14, 1971: 12; Pierson 1927: 108, 121; Reeks et al. 1945: 66; Renlund 1971: 6; Robertson, R. L. & Whitefield 1968c: 1–8; Rogers, T. J. 1981; Rogers, T. J. & Hessburg 1985; Rogers, T. J. & Maffei 1987: 3; Rose-Chaffin 1966: 12–24, 1967b: 4181–4182; Ruhm 1964; Ruppel 1967: 33; Ryker & Rudinsky 1979: 201; Schuder 1969: 78; Schultz & Kliejunas 1984; Schwerdtfeger 1956b: 48, 1957b: 585, 1959a: 57; Shenefelt & Benjamin 1955: 84; Silver & Ross 1958: 75, 1959: 88, 1960: 97, 1961: 98; Sippel, Rose, & Gross 1974: 57; Smith, G. W. 1953: 14; Smith, R. H. 1961a: 1–8, 1971b, 1981; Sowder 1951: 23; Sterner & Davidson 1981: 17; Stevens, Brewer, & Leatherman 1980: 24, 1982: 24; Stevens & Hall 1960; Sugden & Ross 1960a; Svihra 1988, 1989; Swaine 1910d: 42, 1913: 41–43, 1913: 90, 1914: 20–21, 1918a: 61, 63, 1925: 261–266; Swaine & Craighead 1924: 1–27; Syme & Nystrom 1988: 38; Telfer 1982; Thomas, J. B. 1965a; Tunnock 1963: 10; Van Dyke 1922: 180; Villarreal Martinez 1857: 11–19; Walther 1933: 47, 1933: 828–831; Weidman & Robbins 1947: 428, 431–433; Wenz 1985; Wenz & Pronos 1983; Wheeler 1940: 636; Whiteside 1951: 3; Wilson, L. F. 1977; Wolfenbarger 1946: 61; Wood, C. S., Van Sickle, & Shore 1984: 12; Wood, R. O. 1967: 114, 1968: 102; Wood, R. O. & Doidge 1972: 20; Wykoff et al. 1947: 31; Yasinksi & Pierce 1957: 14, 1958: 7. (**ec**) Becker, G. 1954, 1955; Bedard 1966a: 936; Blackman 1931c: 31–32; Brand et al. 1975; Callaham 1955c: 916–917; Callaham & Shifrine 1960: 146; Chaffin, Ramirez-Genel, & Krogstad 1966; Cobb et al. 1968; Craighead et al. 1927; Dale & DeNitto 1986; DeLeon 1934a,

1942: 1–4; Francke-Grosmann 1954b; Furniss, R. L. & Carolin 1977: 362; Gardiner 1957a; Goheen & Cobb 1978; Goheen et al. 1985; Graham 1922: 15, 1939b, 1952; Harrington & Cobb 1983; Hines, J. W. & Heikkenen 1977; Holst 1936; Hopkins 1905c: 11, 1909b: 153–165; Hopping, R. 1928b; Hunt, R. S. & Cobb 1970, 1982; Kaya 1984; Keen 1938: 109; Kinn 1971; Lindquist & Hunter 1965; Livingston, W. H., Mangini, & Mielke 1981; Livingston, W. H. et al. 1983; Massey 1961: 358; Mathre 1964: 353–388, 1966; Miller, J. M. & Keen 1960: 103; Orr 1945: 739; Otvos 1977; Otvos & Stark 1985; Owen et al. 1987; Parmeter et al. 1989; Pettey & Shaw 1986; Poinar 1972, 1975: 156; Raffa & Smalley 1988a; Reid 1955: 316; Rice 1968; Rose-Chaffin 1967b; Ruhm 1964; Schmitz 1988; Shifrine & Pfaff 1956: 41–55; Sowder 1951: 23; Stark, R. W. et al. 1968; Stephen & Dahlsten 1976b: 292; Struble 1942d: 843; Sugden & Ross 1960a, 1960b; Swaine 1925c: 262; Thomas, J. B. 1955: 342; Tomalak, Welch, & Galloway 1989b: 22. (**hb**) Anderson, R. F. 1960: 223; Anonymous 1979a; Atkinson et al. 1986: 17; Baker, W. L. 1972: 246; Barr, B. A., Hanson, & Koeler 1978; Beal & Massey 1945; Beatty 1983; Becker, G. 1951: 186–209, 1952a, 1954, 1955; Blackman 1915, 1919a: 90, 1931c, 1950; Bright 1976d: 57; Bright & Stark 1973: 30; Browne 1968b: 227; Burgos & Saucedo 1983: 57; Burke 1908, 1932; Chaffin, Ramirez-Genel, & Krogstad 1966; Chamberlin 1939: 167–168, 1958: 78–79; Chapman & Kinghorn 1958: 364–369; Coulson & Witter 1984: 530; DeLeon 1942b; Doane et al. 1936; Drooz 1985: 347; Eaton & Rodriquez 1967b; Essig 1926: 514, 1942: 604, 1958: 516; Felt 1926: 248, 263, 1930a: 248, 263; Felt & Rankin 1932: 406; Francke-Grosmann 1954b; Furniss, R. L. & Carolin 1977: 362; Graham 1939b, 1952; Hagle et al. 1987: 35; Harrington 1902a: 116; Herrick 1935: 250; Hoffmann & St. George 1949: 73; Hopkins 1899b: 14, 1904a: 19, 46, 1905c: 11, 1909a: 151–157; Ives & Wong 1988: 79; Keen 1929: 37, 1938: 109, 1952c: 142; Kowal & Ebel 1971; Lekander 1959b: 36; Lindgren 1980a: 26; MacAloney & Schmiege 1962; Martinez, F. B., Islas, & Villa 1975; Miller, J. M. & Keen 1960: 103; Perry 1955: 2; Pierce 1907: 294; Pierson 1927: 108, 121; Powell 1905: 237–239; Reid 1955: 316, 323; Robertson, R. L. & Whitefield 1968c; Rose-Chaffin 1967b; Ryker & Rudinsky 1979: 210; Schmitz 1988; Schwerdtfeger 1956b: 48, 1959a: 57, 1960: 1–33; Smith, G. W. 1953: 14; Smith, R. H. 1961a, 1971b; Stevens, Brewer, & Leatherman 1980: 24, 1982: 24; Swaine 1907: 191, 193, 1918a: 61, 63; Trimble 1924: 384; Watson 1931: 126; Whiteside 1951: 3; Wilson, L. F. 1977; Wood, S. L. 1963: 76, 1982b: 182. (**ds**) Acciavatti & Weiss 1974; Adams & Moore 1963; Anderson, R. F. 1960: 223; Anonymous 1926c: 516, 1958a: 3, 1962i, 1962z, 1963j, 1963k, 1963y, 1965b, 1966f, 1969e, 1973b, 1974m, 1975e, 1978b: 35, 1978f, 1978z, 1979g, 1980a, 1980m: 32, 1981g, 1982c, 1984d; Atkinson & Equihua 1985a: 74, 1985b: 229; Atkinson et al. 1986: 17; Beal & Massey 1945: 81–82; Beaulne 1956; Becker, G. 1951, 1952a, 1954: 40, 1972a; Bedard 1938a; Berryman & Stark 1962a; Blackman 1950; Blackwelder 1947; Blatchley & Leng 1916: 654; Bright 1971a: 125, 1976d: 57; Bright & Stark 1973: 30; Britton 1920a; Brown, A. W. A. 1934, 1940a: 22; Browne 1968b: 227; Burgos & Saucedo 1983: 57; Chamberlin 1917: 323, 1918: 9, 1925, 1927b, 1939: 167–168, 1958: 78–79; Chapuis 1869, 1873; Cockerell et al. 1907; Currie 1905; DeLeon 1938; Dewey, Ciesla, & Meyer 1974; Deyrup & Atkinson 1987b: 67; Dodge 1936; Downing 1963: 8; Drooz 1985: 347; Eaton & Rodriquez 1967b; Essig 1926: 514, 1958: 516; Evans, D. 1983: 32; Fall 1906: 203; Felt 1926: 248, 263, 1930a: 248, 263; Felt & Rankin 1932: 406; Ferrer 1942; Frost 1912: 308; Furniss, M. M. & Furniss, R. L. 1972; Furniss, R. L. & Carolin 1977: 362; Gast et al. 1989: 385; Hagedorn 1910d: 23; Hall & Eaton 1960; Hatch 1924; Hendricks & Enkerlin 1979; Henshaw 1882: 269; Hoffmann & St. George 1949: 73; Hopkins 1902c: 12, 1903a, 1909a: 151–157, 1909b: 153–165; Hopping, R. 1921: 12, 1922: 130, 132; Horning & Barr 1970: 40; Keen 1929: 37, 1929a: 19, 1938: 109, 1949a: 93, 1952c: 142; Kleine 1912b: 176, 1914b: 358, 387, 1934a: 133; Knowlton 1931: 10; Kusch 1967; Lacordaire 1866: 361; Lange 1937: 172; Leng 1920: 338; Leonard 1928: 516; Lindquist, O. H. & Syme 1981: 38; Mank 1934: 81; McComb et al. 1953: 3 ; Merkel 1957: 119; Patterson & Hatch 1945: 150; Peresquia 1978; Perry 1951: 159; Powell, J. A. & Hogue 1979: 312; Proctor 1946: 207; Provancher 1877: 572; Ramirez 1921: 662–663; Ruppel 1967: 33; Schedl 1963c: 157, 1969: 78, 1977e: 42; Smith, G. S. 1929; Smith, J. B. 1910: 404; Smith, R. H. 1961a, 1971b; Snow 1881: 70, 1883: 44, 1906: 175, 1907: 188; Sugden & Ross 1960a; Swaine 1909: 100, 1913: 90, 1914: 20, 1919b: 9; Syme & Nystrom 1988: 38; Thomas, J. B. 1955: 342, 1966: 873; Van Dyke 1922: 180; Wickham 1896b: 170, 1898: 312; Wood, S. L. 1948: 22, 1951a: 127, 1963: 76, 1972a: 405, 1982b: 182. (**tx**) Anderson, R. F. 1960: 223; Beal & Massey 1945: 81–82; Benoit 1985: 89; Blackman 1922b: 1–130; Blandford 1895b: 146; Blatchley & Leng 1916: 654; Boving & Craighead 1931; Bright 1967d: 57; Chamberlin 1939: 167–168, 1958: 78–79; Chapuis 1869: 35, 1873: 243; DeLeon 1938; Dodge 1938: 26–29; Essig 1942: 604; Evans, D. 1983: 32; Hagedorn 1910a: 60; Hopkins 1905b: 81, 1909a: 151–157, 1915c: 184, 187, 194, 196, 199, 204; Ives & Wong 1988: 78; Keen 1929a: 19; Kusch 1967; Lacordaire 1866: 361; LeConte 1857: 22, 59, 1859: 59, 1868: 173, 1876: 385, 1878c: 472; Lekander 1959b: 36; Lindquist, O. H. & Syme 1981: 38; Muesebeck 1942: 95, 1950: 131; Nunberg

1928a: 139; Pardy 1974, 1977, 1983; Peresquia 1978; Powell, J. A. & Houge 1979: 312; Ryker & Rudinsky 1979: 210; Schedl 1931a: 75, 1940a: 339, 1955g: 14; Swaine 1909: 100, 1918a: 61, 63, 1919b: 9; Syme & Nystrom 1988: 38; Thatcher, T. O. 1954: 3; Thomas, J. B. 1957: 4, 1965c, 1967; Thomas, J. B. & Bright 1970: 480; Thomas, J. B. & Krywienczyk 1966; Titus, Meikle, & Harrison 1985: 56; Wood, S. L. 1963: 7, 11, 13, 76, 1972a: 405, 1974d: 280, 1982b: 182. (**ms**) Anderson, R. F. 1966; Berryman & Stark 1962a; Burke 1930; Chamberlin 1931; Chenier & Philogene 1989; Essig 1931: 685; Goulding et al. 1988: 37; Svihra 1988; Swaine 1907: 191, 193, 1925c: 262.

beckeri Thatcher 1954: 4. Holotype ♀; Totonicapan, Guatemala; USNM, Washington. Synonymy: Wood 1963: 78.

References: (**cn**) Schwerdtfeger 1959a: 43. (**ec**) Becker 1952b, 1954: 22, 1955. (**hb**) Becker 1954, 1955; Perry 1955: 5–6; Schedl 1955g: 15; Schwerdtfeger 1959a: 43. (**tx**) Thatcher, T. O. 1954: 3–4; Wood, S. L. 1963: 78.

***vitei* Wood** 1974d: 289. Holotype ♂; Patzun, Guatemala; Wood Collection.

Figures: Wood 1982b: 161 (posterolateral area of pronotum).

Distribution: North America (Guatemala/ Chiapas, Nuevo Leon (?) in Mexico).

Hosts: *Pinus pseudostrobus, P. teocote*.

Notes: (3) Existence of the Nuevo Leon population requires confirmation.

References: (**ay**) Lanier, Hendrichs, & Flores 1988a, 1988b. (**bv**) Inscoe 1982; Klassen, Ridgway, & Inscoe 1982; Payne & Wood 1981: 492; Renwick & Pitman 1979. (**cn**) Payne & Wood 1981: 492. (**ec**) Flores & Enkerlin 1978. (**hb**) Wood, S. L. 1982b: 158. (**ds**) Atkinson & Equihua 1985b: 229; Hendricks & Enkerlin 1979; Lanier, Hendrichs, & Flores 1988a, 1988b; Renwick & Pitman 1979; Wood, S. L. 1982b: 158. (**tx**) Lanier, Hendrichs, & Flores 1988a, 1988b; Wood, S. L. 1974d: 289, 1982b: 158.

Genus *Hylurdrectonus* Schedl

HYLURDRECTONUS SCHEDL 1938f: 40. Type-species: *Hylurdrectonus piniarius* Schedl, monobasic.

Xylogopinus Schedl 1972h: 64. Type-species: *Xylogopinus araucariae* Schedl, = *Hylurdrectonus corticinus* Wood, monobasic. Synonymy: Wood 1980c: 94.

References: (**tx**) Schedl 1972h: 64; Wood, S. L. 1980c: 94.

References: (**hb**) Wood, S. L. 1986a: 42. (**ds**) Wood, S. L. 1986a: 42. (**tx**) Gray, B. 1973: 50; Schedl 1938f: 40; Wood, S. L. 1986a: 42.

***araucariae* Schedl** 1964d: 213. Lectotype, sex?; New Guinea, Waw, Morobe District, 1200 m; Schedl Collection in NHMW, Wien, subsequent designation by Schedl 1979c: 24.

Figures: Gray 1968: 309.

Distribution: New Guinea.

Hosts: *Araucaria cunninghamii*.

References: (**hb**) Gray, B. 1973: 50. (**tx**) Gray, B. 1968: 309; Schedl 1964d: 213, 1966c: 43, 1979c: 24; Wood, S. L. 1980c: 94.

***corticinus* Wood** 1980c: 94. Holotype, sex?; 1 km E Heads Hump logging area, Bulolo, M. Dist., New Guinea; CSIRO, Canberra, automatic.

Distribution: New Guinea.

Hosts: *Araucaria hunstienii*.

References: (**tx**) Wood, S. L. 1980c: 94.

araucariae Schedl 1972h: 64 (*Xylogopinus*). Holotype, sex?; 1 km E Heads Hump logging area, Bulolo, M. Dist., New Guinea; CSIRO, Canberra, preoccupied by Schedl 1964.

Notes: (1) Wood 1980c: 94 (to *Hylurdrectonus*).

References: (**bv**) Gray, B. 1973a, 1973b, 1974d; Wylie 1982. (**cn**) Browne 1968b: 347; Gray, B. 1971a, 1971b, 1971c, 1974a, 1975, 1976; Gray, B. & Lamb 1975; Gray, B. & Wylie 1974; Johnson, N. E. 1976: 410; Wylie 1982. (**ec**) Gray, B. & Lamb 1975. (**hb**) Browne 1968b: 347; Gray, B. 1968: 308, 1974d; Gray, B. & Lamb 1975; Gray, B. & Wylie 1974. (**ds**) Browne 1968b: 347; Gray, B. 1968: 308, 1975; Schedl 1968e: 261, 1969e: 155. (**tx**) Gray, B. 1973b; Schedl 1972h: 64, 1979c: 24; Wood, S. L. 1980c: 94.

***nanus* Browne** 1984d: 87. Holotype, sex?; Papua New Guinea; BMNH, London.

Distribution: New Guinea.

Hosts: *Araucaria cunninghamii*.

References: (**tx**) Browne 1984d: 87.

***piniarius* Schedl** 1938f: 40. Lectotype ♂; Queensland, Australia; Schedl Collection at in NHMW, Wien, designated by Schedl 1979c: 195.

Figures: Schedl 1938f: 40–41.

Distribution: Australia (Queensland), New Guinea.

Hosts: *Araucaria bidwillii, A. cunninghamii*.

References: (**bv**) Weber, R. & Schurig 1984. (**cn**) Browne 1968b: 347; Wylie & Shanahan 1975. (**hb**) Brimblecombe 1945: 84; Browne 1968b: 347; Gray, B. 1973: 53; Wylie & Shanaham 1975. (**ds**) Browne 1968b: 347; Gray, B. 1968: 308; Schedl 1979a: 158. (**tx**) Carne et al. 1980; Schedl 1938f: 40–41, 1979c: 195. (**ms**) Weber, R. & Schurig 1984.

Genus *Hylurgonotus* Schedl

HYLURGONOTUS SCHEDL 1952a: 448. Type-species: *Hylurgonotus brunneus* Schedl =*Hylurgus tuberculatus* Eggers, monobasic.

References: (**ay**) Nobuchi 1969a: 49. (**hb**) Wood, S. L. 1986a: 43. (**ds**) Wood, S. L. 1986a: 43. (**tx**) Schedl 1952a: 448; Wood, S. L. 1986a: 43.

***antipodus* (Eggers)** 1942a: 14 (*Blastophagus*). Holotype, sex?; Valdivia, Chile; Hamburg Museum, lost.
Figures: Ruhm 1976: 138.
Distribution: South America (Chile).
Hosts: *Araucaria araucana*.
Notes: (1) Schedl 1979c: 22 (invalid designation of lectotype to replace lost holotype).
References: (**ec**) Hirschmann 1972c, 1972d; Mahunka 1972; Ruhm 1969. (**hb**) Ruhm 1976. (**ds**) Schedl 1965g: 25, 1967d: 5, 1972d: 135. (**tx**) Eggers 1942a: 14; Ruhm 1976: 138; Schedl 1951d: 16, 1955e: 256, 1965g: 25, 1966e: 43, 1972d: 135, 1979c: 22.

***armaticeps* Schedl** 1955e: 257. Syntypes ♀?; Chile: Llaima Cautin; Schedl Collection in NHMW, Wien, and Kuschel Collection.
Figures: Ruhm 1965a: 268.
Distribution: South America (Chile).
Hosts: *Araucaria* sp.
Notes: (1) Schedl 1979c: 25 (citation of holotype invalid).
References: (**ay**) Ruhm 1965a. (**bv**) Ruhm 1986. (**ec**) Hirschmann 1972b, 1972c. (**hb**) Ruhm 1965a, 1986. (**ds**) Schedl 1972d: 133. (**tx**) Ruhm 1965a: 268; Schedl 1955e: 256–257, 1972d: 133, 1979c: 25.

***solidus* (Schedl)** 1967d: 6 (*Blastophagus*). Holotype, sex?; Nahuelbuta (W), Arauco, Caramavida, Chile, 720–1000 m; ZSSM, Munchen.
Distribution: South America (Chile).
Hosts: *Araucaria* sp.
References: (**ds**) Schedl 1972d: 136. (**tx**) Schedl 1967d: 6, 1972d: 136.

***tuberculatus* (Eggers)** 1942a: 13 (*Hylurgus*). Holotype ♀; Bolivia oder Chile; Hamburg Museum, lost.
Distribution: South America (Argentina/ Chile).
Hosts: *Araucaria* sp.
References: (**ds**) Schedl 1972d: 134. (**tx**) Eggers 1942a: 13; Schedl 1951d: 16, 1972d: 134.
brunneus Schedl 1952a: 448. Holotype ♂; Gob. Rio Negro, Argentina; Schedl Collection at NHMW, Wien. Synonymy: Wood 1986a: 43.
References: (**ay**) Ruhm 1965a: 264. (**bv**) Ruhm 1986. (**ec**) Ruhm 1965a: 264, 1969, 1986. (**hb**) Gams & Grinberge 1970: 794–798; Ruhm 1965a: 264, 1986. (**ds**) Schedl 1965g: 25–26, 1966c: 43, 1967d: 5, 1972d: 134, 1973d: 161. (**tx**) Schedl 1951d: 16, 1952a: 448, 1955e: 256, 1972d: 134; Wood, S. L. 1986a: 43; Wylie & Yule 1977.

Genus *Pachycotes* Sharp

PACHYCOTES SHARP 1877: 10. Type-species: *Pachycotes ventralis* Sharp = *Hylastes peregrinus* Chapuis, monobasic.
References: (**hb**) Wood, S. L. 1986a: 43. (**ds**) Hagedorn 1910d: 80; Wood, S. L. 1986a: 43. (**tx**) Hagedorn 1910a: 133; Schedl 1938f: 37; Sharp 1877: 10; Wood, S. L. 1986a: 43.

***araucariae* Schedl** 1975f: 340. Holotype ♂; Bulolo, Morobe District, New Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
Hosts: *Araucaria cunninghamii*.
References: (**tx**) Schedl 1975f: 340.

***australis* Schedl** 1938f: 38. Syntypes ♂; Dorrigo, New S. Wales and Gallangowen, Queensland, Australia; SAM, Adelaide, restricted by Schedl 1979c: 32.
Figures: Schedl 1938f: 39.
Distribution: Australia (New South Wales/ Queensland).
Hosts: *Araucaria cunninghamii*.
References: (**cn**) Brimblecombe 1956. (**hb**) Brimblecombe 1956. (**ds**) Schedl 1959d: 56, 1975h: 352. (**tx**) Carne et al. 1980; Schedl 1938f: 38, 1959d: 67, 1979c: 32.

***clavatus* Schedl** 1938f: 39. Syntypes ♂; Sydney and New S. Wales, Australia; BMNH, London, and Schedl Collection in NHMW, Wien.
Distribution: Australia (New South Wales/ Queensland).
Hosts: *Araucaria cunninghamii*.
Notes: Schedl 1979c: 58 (citation of holotype invalid).
References: (**ds**) Schedl 1979a: 158. (**tx**) Carne et al. 1980; Schedl 1938f: 39, 1979c: 58.

***kuscheli* Schedl** 1972b: 267. Holotype ♀; Middlegate, Norfolk Island, Pacific Islands; CSIRO, Canberra.
Distribution: Norfolk Island.
Hosts: *Araucaria heterophylla*.
References: (**tx**) Schedl 1972b: 267.

***minor* Wood** 1985: 273. Holotype ♂; Palen Creek, 96 km S Brisbane, Australia, CSIRO, Canberra.
Distribution: Australia (Queensland).
Hosts: *Araucaria cunninghamii*.
References: (**tx**) Wood, S. L. 1985: 273.

***peregrinus* (Chapuis)** 1869: 21 (*Hylastes*). Holotype, sex?; Nouvelle-Zelande; IRSNB, Brussels.
Figures: Milligan 1979:fig. 3.
Distribution: New Zealand.
Hosts: *Araucaria* sp., *Pseudotsuga menziesii* (plantations).
References: (**bv**) Alma & van Boven 1976; Hosking 1977. (**cn**) Bain 1977c; Froggatt 1927; Hosking 1977; Zondag 1982. (**ec**) Hosking 1977. (**hb**) Bain 1977c; Froggatt 1927. (**ds**) Browne 1980a: 373; Hagedorn 1910d: 11; Hosking 1977; Hutton 1904: 219; Kleine 1912b: 166, 1914b: 304; Zondag 1982. (**tx**) Broun 1880; Chapuis 1869: 21, 1873: 229; Gemminger & Harold 1872: 2670; Hagedorn 1910a: 46; Milligan 1978:fig. 3; Schedl 1938f: 37, 1955b: 279.
ventralis Sharp 1877: 10. Holotype, sex?; New

Zealand; BMNH, London. Synonymy: Schedl 1938f: 37.
References: (**cn**) Anonymous 1943: 24, 1954k: 40; Bain 1977: 1–7. (**hb**) Anonymous 1954k: 40; Clark, A. F. 1932a: 235–243. (**ds**) Clark, A. F. 1932a; Hagedorn 1910d: 80; Hutton 1904: 219; Kleine 1913b: 148, 1914b: 304. (**tx**) Broun 1880; Hagedorn 1910a: 133; Hopkins 1914: 126; Lucas 1920: 473; Schedl 1938f: 37, 1955b: 279, 1962i: 74; Sharp 1877: 10. (**ms**) Lucas 1920: 473.

***villosus* Schedl** 1962i: 75. Holotype ♀; W. Australien, Murchison River; Frey Collection in NHMBS, Basel.
Distribution: Australia (Western Australia).
Hosts: *Araucaria* sp.
References: (**ds**) Schedl 1962i: 73–75.

Tribe Phrixosomini Wood

Phrixosomini

References: Wood, S. L. 1978a: 111, 1982b: 204, 1986: 43.

Genus *Phrixosoma* Blandford

PHRIXOSOMA BLANDFORD 1897a: 148. Type-species: *Phrixosoma rude* Blandford, monobasic.

Bothryperus Hagedorn 1909a: 742. Type-species: *Bothryperus psaltes* Hagedorn, monobasic. Synonymy: Schedl 1963h: 258.
References: (**tx**) Eggers 1927a: 196; Hagedorn 1909a: 742, 1910a: 29–30, 1910d: 6; Hopkins 1914: 117, 1915c: 227; Lucas 1920: 145; Schedl 1941d: 383, 1957d, 1959n: 341–358, 1961k: 341–358, 1963h: 258.

Neohylesinus Eggers 1920: 118. Type-species: *Neohylesinus quadrioculatus* Eggers, monobasic. Synonymy: Eggers 1927a: 196.
References: (**tx**) Eggers 1920: 118, 1927a: 196.

Sphaerosinus Eggers 1929a: 40. Type-species: *Sphaerosinus striatus* Eggers, monobasic. Synonymy: Wood 1982b: 204.
References: (**tx**) Chamberlin 1939: 189; Eggers 1929a: 40–41; Wood, S. L. 1982b: 204.

Keys: Wood 1982b: 204.

References: (**hb**) Schedl 1960f: 10, 1961k: 341; Wood, S. L. 1982b: 204–207, 1986a: 43. (**ds**) Schedl 1961k: 341; Wood, S. L. 1982b: 204–207, 1986a: 43. (**tx**) Blandford 1897a: 148; Hagedorn 1910a: 79, 1910d: 39; Lucas 1920: 507; Schedl 1959m: 545–557, 1961k: 341, 1963h: 258; Wood, S. L. 1982b: 204–207, 1986a: 43.

***brasiliensis* Schedl** 1959m: 546. Holotype ♂?; Matto Grosso, Rio Caraguata [Brasil]; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**ds**) Schedl 1973d: 153. (**tx**) Schedl 1959m: 546.

***caraibica* Schedl** 1966f: 101. Holotype ♀?; Guadeloupe; Schedl Collection in NHMW, Wien.
Distribution: Antilles Islands (Guadeloupe).
References: (**ds**) Bright 1985c: 171; Schedl 1966f: 78. (**tx**) Bright 1985c: 171; Schedl 1966f: 101.

***clusiae* Wood** 1969b: 1. Holotype ♀; Zamorano, Morazan, Honduras; Wood Collection.
Distribution: Central America (Honduras).
Hosts: *Clusia flava*.
References: (**ds**) Wood, S. L. 1982b: 207. (**tx**) Wood, S. L. 1969b: 1, 1982b: 207.

***costata* (Schedl)** 1941d: 383 (*Bothryperus*). Holotype, sex?; Kamerun; Schedl Collection in NHMW, Wien.
Figures: Schedl 1941d: 384.
Distribution: Africa (Cameroon).
References: (**ds**) Schedl 1961k: 342. (**tx**) Schedl 1941d: 382–384, 1961k: 342, 1979c: 67.

***crebra* Wood** 1971: 2. Holotype ♀; 8 km S Colonia (near Buenaventura), Valle de Cauca, Colombia; Wood Collection.
Distribution: South America (Colombia).
Hosts: *Rheedia madruno*.
References: (**tx**) Wood, S. L. 1971: 2.

***frustrata* Wood** 1971: 3. Holotype ♀; 8 km S Colonia (near Buenaventura), Valle de Cauca, Colombia; Wood Collection.
Distribution: South America (Colombia).
Hosts: *Rheedia madruno*.
References: (**tx**) Wood, S. L. 1971: 3.

***fuscovillosa* (Schedl)** 1957d: 29 (*Bothryperus*). Holotype, sex?; Congo Belge: Yangambi; MRCB, Tervuren.
Figures: Schedl 1961k: 345 (galleries).
Distribution: Africa (Zaire).
Hosts: *Allanblackia floribunda, Barteria nigritiana, Cleistanthus polystachyus, Harungana madagascariensis*.
References: (**hb**) Schedl 1961k: 342–345. (**ds**) Mayne & Donis 1962: 302; Schedl 1961k: 342–345. (**tx**) Schedl 1957d: 29, 1961k: 342–345, 1979c: 102.

***garciniae* (Schedl)** 1957d: 30 (*Bothryperus*). Holotype, sex?; Congo Belge: Yangambi; MRCB, Tervuren.
Figures: Schedl 1961k: 345 (galleries).
Distribution: Africa (Zaire).
Hosts: *Conopharyngia durissima, Garcinia punctata*.
References: (**ec**) Schedl 1958d: 190–192. (**hb**) Schedl 1961k: 346. (**ds**) Schedl 1961k: 344. (**tx**) Schedl 1957d: 30, 1961k: 344–346, 1979c: 102.

***magna* Blackman** 1943c: 392. Holotype ♀; Bolivia; USNM, Washington.
Figures: Blackman 1943c:pl. 17, figs. 37–40.
Distribution: South America (Bolivia).
References: (**ds**) Blackwelder 1947. (**tx**) Blackman 1943c: 392.

***major* (Eggers)** 1940c: 229 (*Bothryperus*). Holotype, sex?; Albertville, Congostaat; MRCB, Tervuren.
Distribution: Africa (Angola/ Zaire).
Hosts: *Garcinia polyantha*.
References: (**ds**) Ferreira 1965: 1112, Schedl 1959j: 16, 1961k: 348. (**tx**) Eggers 1940c: 229; Schedl 1961k: 348.

***minor* Wood** 1956c: 248. Holotype ♂; La Ceiba, Honduras; Wood Collection.
Figures: Wood 1956c: 249 (male, female heads).
Distribution: North America (Costa Rica/ Honduras/ Oaxaca in Mexico/ Panama), South America (Brazil/ Colombia/ Venezuela).
Hosts: *Rheedia edulis, Symphonia globulifera*.
References: (**hb**) Wood, S. L. 1982b: 206. (**ds**) Atkinson & Equihua 1986a: 419; Schedl 1976a: 51; Wood, S. L. 1982b: 206. (**tx**) Wood, S. L. 1956c: 248–249, 1969b: 1, 1982b: 206.

***nigra* (Eggers)** 1933e: 21 (*Bothryperus*). Holotype, sex?; Uganda; BMNH, London.
Figures: Schedl 1961k: 347 (galleries).
Distribution: Africa (Uganda/ Zaire).
Hosts: *Haronga paniculata*, and "Mudirira" stem.
References: (**hb**) Schedl 1961k: 347–349. (**ds**) Kleine 1934: 125; Schedl 1961k: 348. (**tx**) Eggers 1933e: 21; Schedl 1961k: 348.

***obesa* Blackman** 1943c: 393. Holotype ♀; Gatun, Canal Zone, Panama; USNM, Washington.
Distribution: North America (Costa Rica/ Panama), South America (Colombia/ Brazil).
Hosts: *Rheedia madruno*, *Symphonia globulifera*.
References: (**hb**) Wood, S. L. 1982b: 205. (**ds**) Blackwelder 1947; Wood, S. L. 1982b: 205. (**tx**) Blackman 1943c: 393; Wood S. L. 1956c: 248, 1982b: 205.

***parva* Blackman** 1943c: 393. Holotype ♀; Cayamas, Cuba; USNM, Washington.
Distribution: Antilles Islands (Cuba).
References: (**ds**) Blackwelder 1947; Bright 1985c: 171. (**tx**) Blackman 1943c: 393–394; Bright 1985c: 171.

***peruviana* Eggers** 1951: 148. Holotype ♀; Peru; Schedl Collection in NHMW, Wien.
Distribution: South America (Peru).
References: (**tx**) Eggers 1951: 148.

***psaltes* (Hagedorn)** 1909a: 742 (*Bothryperus*). Syntypes (2), sex?; Kamerun; MNB, Berlin.
Figures: Schedl 1961k: 341 (adult), 351 (galleries).
Distribution: Africa (Cameroon/ Zaire).
Hosts: *Garcinia* sp., *Synsepalum subcordatum*.
References: (**cn**) Ghesquiere 1933a: 34–35, 1933b: 784, 786. (**hb**) Schedl 1961k: 349–354. (**ds**) Ghesquiere 1933a: 34–35; Hagedorn 1910d: 6; Kleine 1912b: 160, 1914b: 309; Schedl 1961k: 350, 1964f: 617, 1967e: 209, 1971e: 2. (**tx**) Eggers 1927a: 196, 1933e: 21; Hagedorn 1909a: 742, 1910a: 30; Hopkins 1914: 117, 135; Lepesme 1947: 648–649; Lucas 1920: 145; Schedl 1939g: 170, 1941d: 383, 1950d: 6, 1961k: 341, 350, 1964m: 304, 1979c: 200. (**ms**) Lucas 1920: 145.

***quadrioculata* (Eggers)** 1920: 119 (*Neohylesinus*). Holotype, sex?; Buta (Kongo); MCG, Genova.
Figures: Schedl 1961k: 343 (adult), 353 (galleries).
Distribution: Africa (Zaire).
Hosts: *Garcinia polyantha*, *G. punctata*, *Pentadesma lebrunii*.
References: (**cn**) Mayne & Donis 1951: 332. (**ec**) Mayne & Donis 1951: 332; Schedl 1958d: 188. (**hb**) Schedl 1961k: 354–357. (**ds**) Browne 1981b: 600; Kleine 1934a: 125; Schedl 1961k: 354, 1964f: 617, 1971g: 190. (**tx**) Eggers 1920: 119, 1927a: 196, 1933e: 21; Schedl 1941d: 382, 1950d: 6, 1961k: 343, 354–357.

***rude* Blandford** 1897a: 148. Lectotype, sex?; Volcan de Chiriqui, Panama; BMNH, London, designated by Wood 1982b: 205.
Figures: Blandford 1897a:pl. 6, fig. 12.
Distribution: North America (Costa Rica/ Panama).
Hosts: *Rheedia edulis*.
References: (**hb**) Wood, S. L. 1982b: 205. (**ds**) Blackwelder 1947; Hagedorn 1910d: 39; Kleine 1913b: 117; Wood, S. L. 1982b: 205. (**tx**) Blackman 1943c: 392; Blandford 1897a: 148; Hagedorn 1910a: 79, 1914: 127; Lucas 1920: 507; Schedl 1959m: 546; Wood, S. L. 1982b: 205. (**ms**) Lucas 1920: 507.

***sinuosa* (Schedl)** 1941d: 392 (*Bothryperus*). Holotype ♀?; Span. Guinea; Schedl Collection in NHMW, Wien.
Distribution: Africa (Spanish Guinea).
References: (**tx**) Schedl 1941d: 382, 1961k: 357, 1979c: 231.

***striata* (Eggers)** 1929a: 41 (*Sphaerosinus*). Holotype, sex?; Amer. bor.; ZMA, Amsterdam.
Distribution: America (Central or South?).
References: (**ds**) Chamberlin 1939: 189; Leng & Mutchler 1933: 51. (**tx**) Chamberlin 1939: 189; Eggers 1929a: 41.

***uniseriata* (Eggers)** 1940c: 230 (*Bothryperus*). Holotype, sex?; Equateur (Bokuma), Congostaat; MRCB, Tervuren.
Distribution: Africa (Zaire).
Hosts: *Conopharynia durissima*, *Garcinia punctata*.
References: (**hb**) Schedl 1961k: 358. (**ds**) Schedl 1961k: 358. (**tx**) Eggers 1940c: 230; Schedl 1957d: 30, 1961k: 358, 1979c: 206.

***viriosa* Wood** 1971: 2. Holotype ♀; 40 km SE Socopo, Barinas, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Rheedia madruno*.
References: (**tx**) Wood, S. L. 1971: 2–3.

Tribe Hyorrhynchini Hopkins

Hyorrhynchinae
References: Hopkins 1915c: 225.

Hyorrhynchini
References: Murayama 1963b: 62–64; Nobuchi 1985c: 3; Wood, S. L. 1986: 43–44.

Sueinae
References: Murayama 1958: 7.

Genus *Sueus* Murayama

SUEUS MURAYAMA 1951a: 1. Type-species: *Sueus sphaerotrypoides* Murayama =*Hyorrhynchus niisimai* Eggers, original designation.

Parasphaerotrypes Murayama 1958: 933. Type-species: *Sphaerotrypes controversae* Murayama, original designation. Synonymy: Wood 1992:(in press).
References: (**tx**) Murayama 1958: 933, 1963: 70–72; Wood, S. L. 1986a: 46, 1992:(in press).

Neohyorrhynchus Schedl 1962p: 202. Type-species: *Hyorrhynchus niisimai* Eggers, original designation. Synonymy: Wood 1983a: 650.
References: (**tx**) Schedl 1962p: 202; Wood, S. L. 1983a: 650.

References: (**ay**) Nobuchi 1969a: 47. (**hb**) Wood, S. L. 1986a: 44. (**ds**) Wood, S. L. 1986a: 44. (**tx**) Murayama 1951a: 1; Wood, S. L. 1986a: 44.

***niisimai* (Eggers)** 1926b: 133 (*Hyorrhynchus*). Holotype ♀; Japan: Urakawa (Hakodate); USNM, Washington.
Figures: Nakane et al. 1963:pl. 191, Nobuchi 1964:pl. 1–2.
Distribution: Asia (Bengal in India/ Japan/ Malaya/ Sri Lanka), Fiji Islands, Indonesia (Java), New Guinea.
Hosts: *Cinnamomum obtusifolium, Citrus* spp., *Cornus controversa, Elaecarpus decipiens, Eurya japonica, Litsea domarensis, Machilus thunbergii, Osbeckia aspera, Parabenzoin praecox, Rhus succedanea.*
References: (**hb**) Beaver 1984; Beaver & Browne 1978: 588; Roberts 1976: 376; Takahashi 1989: 403. (**ds**) Beaver & Browne 1978: 588; Browne 1974a: 64; Murayama 1950c: 63; Nakane et al. 1963: 381; Nobuchi 1985: 3; Nohira & Ogawa 1986; Roberts 1976: 376; Schedl 1971a: 275, 1971c: 361, 367. (**tx**) Anderson, W. H. & Anderson 1971: 22; Eggers 1926b: 133, 1936e: 79, 81; Huang & Yin 1983; Murayama 1950c: 62; Nakane et al. 1963: 381, pl. 191; Nobuchi 1964: 130, pl. 1, 2; Schedl 1934f: 1635, 1954b: 198, 1962p: 202.

pilosus Eggers 1936e: 81 (*Hyorrhynchus*). Holotype ♀; Java: Salatiga (600 m hoch); Kalshoven Collection. Synonymy: Schedl 1962p: 202.
Notes: (3) Schedl 1954a: 146 (described male).
References: (**hb**) Browne 1961c: 60; Kalshoven 1958b: 162. (**ds**) Browne 1961c: 60; Schedl 1959a: 473. (**tx**) Eggers 1936e: 81; Schedl 1942d: 2, 1950g: 894, 1954a: 144–146, 1959a: 473, 1962p: 202.

controverse Murayama 1950: 62 (*Sphaerotrypes*). Lectotype ♀; Daidominamiyama, Kochi pref., Skikiu, Japan; USNM, Washington, designated by Wood 1992b: 85.
References: (**tx**) Murayama 1950: 62; Wood, S. L. 1992b:85.

sphaerotrypoides Murayama 1951a: 2. Holotype ♀; Sue, Ohshima VIII, Nishimuro County, Wakayama Pref., Japan; Murayama Collection in USNM, Washington. Synonymy: Wood 1983a: 650.
References: (**ds**) Murayama 1951a: 2, 1952a: 19, 1953a: 8, 1953c: 150, 1955: 98. (**tx**) Murayama 1951a: 2, 1952a: 19, 1953a: 8, 1954b: 161, 1955: 98; Wood, S. L. 1983a: 650.

***striatulus* (Schedl)** 1954a: 145 (*Hyorrhynchus*). Holotype ♀; Java (?); Schedl Collection in NHMW, Wien.
Distribution: Indonesia (apparently Java).
Notes: (1) Schedl 1962p: 202 (to *Neohyorrhynchus, =Sueus*).
References: (**tx**) Schedl 1954a: 144–145, 1962p: 202.

Genus *Hyorrhynchus* Blandford

HYORRHYNCHUS BLANDFORD 1894d: 58. Type-species: *Hyorrhynchus lewisi* Blandford, monobasic.
References: (**ay**) Nobuchi 1969a: 47. (**hb**) Wood, S. L. 1986a: 44. (**ds**) Browne 1961c: 60; Wood, S. L. 1986a: 44. (**tx**) Blandford 1894d: 58; Browne 1961c: 60; Gardner 1934: 1–17; Hagedorn 1910a: 36, 1910d: 7; Murayama 1950: 61; Niisima 1908: 18, 1909: 131; Wood, S. L. 1986a: 44; Yin & Huang 1981: 557.

***birmanus* Eggers** 1939b: 1. Syntypes, sex?; Nordost-Birma (Kambaiti, 7000 Fuss hoch); NHR, Stockholm.
Distribution: Asia (Burma).
References: (**tx**) Eggers 1927b, 1939b: 1–2.

***blandfordi* Sampson** 1913: 446. Holotype ♂; Kali Pokri, Darjeeling; BMNH, London.
Figures: Yin & Huang 1981: 557.
Distribution: Asia (Bengal in India).
References: (**ds**) Yin & Huang 1981: 557. (**tx**) Huang & Yin 1983; Sampson 1913: 446–447; Yin & Huang 1981: 557.

***ebianensis* Huang & Yin** 1983: 339. Holotype, sex?; China; IZAS, Beijing.
Distribution: Asia (China).
References: (**tx**) Huang & Yin 1983: 339.

***elongatus* Eggers** 1939b: 2. Holotype ♀; Nordost-Birma (Kambaiti, 7000 Fuss hoch); NHR, Stockholm.
Distribution: Asia (Burma).
References: (**tx**) Eggers 1939b: 2.

***flavopannus* Huang & Yin** 1983: 338. Holotype, sex?; China; IZAS, Beijing.
Distribution: Asia (China).
References: (**tx**) Huang & Yin 1983: 338.

***kalimpongensis* Maiti & Saha** 1988: 41–50. Holotype ♂; Samsingh, Darjeeling Dist., West Bengal, India.
Distribution: Asia (Bengal in India).
References: (**tx**) Maiti & Saha 1988: 41–50.

***lewisi* Blandford** 1894d: 60. Syntypes, sex?; Sapporo [Japan]; BMNH, London.
Figures: Nakane et al. 1963:pl. 191.
Distribution: Asia (Japan/Taiwan), Indonesia (Java).
Hosts: *Acer pictum, Caesalpinia sappan, Cornus controversa, Fagus japonica, Ulmus campestris.*
References: (**hb**) Krivolutskaya 1965a: 228, 1973: 132. (**ds**) Blandford 1894c: 60; Hagedorn 1910d: 7; Kleine 1912b: 162, 1914b: 254, 1934a: 126; Krivolutskaya 1965a: 227, 1973: 132; Miwa 1931: 268; Murayama 1949c: 99, 1950c: 62, 1953c: 148; Nakane et al. 1963: 38; Nobuchi 1967: 18, 1985: 3. (**tx**) Blandford 1894d: 60; Eggers 1926b: 135; Hagedorn 1910a: 36; Hopkins 1914: 123; Murayama 1950c: 62, 1954b: 159, 1959c: 62; Nakane et al. 1963: 381, pl. 191; Niisima 1909: 131, 1910a: 2; Nobuchi 1966: 52; Sampson 1913: 447; Schedl 1934f: 1635, 1962p: 202.

granulatus Eggers 1936e: 80. Holotype ♀; Java: Buitenzorg; Kalshoven Collection. Synonymy: Schedl 1962p: 202.
References: (**hb**) Kalshoven 1958b: 162. (**tx**) Eggers 1936e: 80; Schedl 1962p: 202.

drescheri Eggers 1936e: 82. Holotype ♀; Java (Batoerraden); ZMA, Amsterdam. Synonymy: Schedl 1962p: 202.
References: (**tx**) Eggers 1936e: 80–82; Schedl 1962p: 202.

***obesus* Browne** 1977b: 369. Holotype, sex?; Malaysia: Penang, Telok Bahang; BMNH, London.
Distribution: Asia (Malaya).
References: (**hb**) Beaver & Browne 1978: 588. (**ds**) Beaver & Browne 1978: 588. (**tx**) Browne 1977b: 369.

***sensarmai* Maiti & Saha** 1988: 41–50. Holotype ♂; Debrepani, Darjeeling Dist., West Bengal, India; FRI, Dehra Dun.
Distribution: Asia (Bengal in India).
References: (**tx**) Maiti & Saha 1988: 41–50.

***shiva* Maiti & Saha** 1988: 41–50. Holotype ♂; Samsingh, Darjeeling Dist., West Bengal, India; FRI, Dehra Dun.
Distribution: Asia (Assam, Bengal in India).
References: (**tx**) Maiti & Saha 1988: 41–50.

***tuberopectus* Huang & Yin** 1983: 340. Holotype, sex?; China; IZAS, Beijing.
Distribution: Asia (China).
References: (**tx**) Huang & Yin 1983: 340.

***unicornis* Nobuchi** 1966e: 51. Holotype, sex?; Gamushi, Hokkaido, Japan; Nobuchi Collection, Ibaraki.
Figures: Nobuchi 1966e:pl. 2.
Distribution: Asia (Japan).
References: (**ds**) Nobuchi 1985: 3. (**tx**) Nobuchi 1966e: 51, pl. 2.

Genus *Pseudohyorrhynchus* Murayama

PSEUDOHYORRHYNCHUS MURAYAMA 1950c: 61. Type-species: *Pseudohyorrhynchus wadai* Murayama, original designation.
References: (**hb**) Wood, S. L. 1986a: 44. (**ds**) Wood, S. L. 1986a: 44. (**tx**) Murayama 1950c: 61, 1963: 65–66; Wood, S. L. 1986a: 44.

***wadai* Murayama** 1950c: 61. Holotype, sex?; Daidominamiyama, Kochi Pref., Japan; Murayama Collection in USNM, Washington.
Figures: Nakane et al. 1963:pl. 191.
Distribution: Asia (Japan).
Hosts: *Cornus controversa.*
References: (**ds**) Murayama 1950c: 61, 1953c: 149; Nakane et al. 1963: 381; Nobuchi 1985: 3. (**tx**) Murayama 1950c: 61; Nakane et al. 1963: 381, pl. 191; Schedl 1954b: 198, 1962p: 202.

Tribe Diamerini Hagedorn

Diamerinae
References: Hagedorn 1909a: 734, 1909b: 162, 1910a: 24, 29, 1910d: 6.

Diamerini
References: Wood, S. L. 1978a: 11, 1986: 44.

Strombophorini
References: Schedl 1959n: 75.

Sphaerotrypini
References: Murayama 1963b: 5, 66–68; Nobuchi 1985c: 2.

Genus *Acacacis* Lea

ACACACIS LEA 1910: 149. Type-species: *Acacacis abundans* Lea, monobasic.

Trogloditica Sampson 1922b: 148. Type-species: *Trogloditica trahax* Sampson, monobasic. Synonymy: Wood 1978a: 116.
References: (**tx**) Sampson 1922b: 148; Schedl 1960g: 125; Wood, S. L. 1978a: 116.

Pseudoacacacis Schedl 1963j: 477. Type-species: *Acacacis borneensis* Browne, original designation. Synonymy: Wood 1978a: 116.
References: (**tx**) Browne 1965a: 189; Schedl 1963j: 477, 1964h: 423; Wood, S. L. 1978a: 116.

Neodiamerus Schedl 1971a: 282. Type-species: *Neodiamerus granulicollis* Schedl, original designation. Synonymy: Wood 1979b: 133.
References: (**tx**) Schedl 1971a: 282; Wood, S. L. 1979b: 133.

Notes: (3) An unpublished manuscript by Schedl 1978 treating Australian species cites *spectabilis* Schedl, nomen nudum.

References: (**hb**) Wood, S. L. 1986a: 45. (**ds**) Browne 1961c: 65; Schedl 1960g: 125; Wood, S. L. 1986a: 45. (**tx**) Browne 1960: 201–220, 1961c: 65, 1965a: 189; Lea 1910: 149; Lucas 1920: 67; Schedl 1960g: 125; Wood, S. L. 1978a: 116, 1979b: 133, 1986a: 45.

***abundans* Lea** 1910: 149. Syntypes, sex?; Hobart, Mount Wellington, Bruni Island, etc., in Tasmania, Emerald in Victoria; SAM, Adelaide.
Figures: Schedl 1936g: 525 (antenna).
Distribution: Australia (New South Wales/ Queensland/ South Australia/ Tasmania/ Victoria), New Zealand.
Hosts: *Acacia* spp.
References: (**ds**) Brimblecombe 1953: 3; Nicholls 1923: 15–17; Schedl 1936g: 525, 1959d: 67, 1979a: 158. (**tx**) Hopkins 1914: 116; Lea 1910: 149; Lucas 1920: 67; Schedl 1936g: 525, 1955b: 278–279, 1958i: 214, 1959d: 67. (**ms**) Lucas 1920: 67.

***bicornis* Wood** 1988a: 34. Holotype ♂; near Bulolo, Morobe District, New Guinea; Wood Collection.
Distribution: New Guinea.
Hosts: Tree seedling.
References: (**tx**) Wood, S. L. 1988a: 34.

***borneensis* Browne** 1962c: 203. Holotype ♀; Sarawak: Kuching, F.G.B.6317; BMNH, London.
Distribution: Indonesia (Sarawak in Borneo).
Hosts: *Vatica* sp.
References: (**tx**) Browne 1962c: 203, 1965a: 187; Schedl 1963j: 477, 1964h: 423; Wood, S. L. 1978a: 116.

***carphoboroides* (Nunberg)** 1960a: 287 (*Trogloditica*). Holotype, sex?; Tanganyika Terr., Katesh, Contrefort Sud du Mt. Hanang, 1850 m; MRCB, Tervuren.
Figures: Nunberg 1960a: 290.
Distribution: Africa (Tanzania).
References: (**tx**) Nunberg 1960a: 287, 290; Schedl 1962k: 1064.

***globosus* (Eggers)** 1935c: 298 (*Trogloditica*). Holotype ♀?; Congostaat: Elisabethville; MRCB, Tervuren.
Figures: Schedl 1960g: 125.
Distribution: Africa (Mozambique/ Zaire).
References: (**tx**) Eggers 1935c: 298; Schedl 1960g: 125.

***granulicollis* (Schedl)** 1971a: 282 (*Neodiamerus*). Holotype ♂; Ceylon: Central Prov., Hantane Estate, Kandy; Schedl Collection in NHMW, Wien.
Figures: Schedl 1971a: 283.
Distribution: Asia (Sri Lanka).
Hosts: Liana.
References: (**tx**) Schedl 1971a: 282–283; Wood, S. L. 1979b: 133.

***kivuensis* (Nunberg)** 1967b: 314 (*Trogloditica*). Holotype, sex?; Kivu, foret Biambwe, terr. Lubero, 950 m; MRCB, Tervuren.
Figures: Nunberg 1967b: 335.
Distribution: Africa (Zaire).
References: (**tx**) Nunberg 1967b: 314, 335.

***malayanus* Browne** 1962c: 202. Holotype ♀; Malaya: Selangor, Kepong, F.G.B.5225; BMNH, London.
Distribution: Asia (Malaya).
Hosts: *Fissistigma elegans*.
References: (**hb**) Browne 1961c: 66. (**ds**) Browne 1961c: 66, 1962c: 202. (**tx**) Browne 1962c: 202.

***minor* Schedl** 1936g: 525. Syntypes, sex?; Australia, New South Wales: Sidney and Wollongong; SAM, Adelaide, restricted by Schedl 1979c: 154 to SAM, Adelaide specimens.
Distribution: Australia (New South Wales).
References: (**ds**) Brimblecombe 1953: 3; Schedl 1936g: 525. (**tx**) Browne 1962c: 202; Schedl 1936g: 525, 1958i: 214, 1979c: 154.

***squamosus* (Eggers)** 1933e: 20 (*Trogloditica*). Holotype ♀?; N. Rhodesia: Mwengwa (27 degrees 40′ Ost, 13 degrees Sud); BMNH, London.
Distribution: Africa (Zaire/ Zambia).
References: (**ds**) Beaver & Loeyttyniemi 1985a:

65; Schedl 1960g: 126. (**tx**) Eggers 1933e: 20, 1934b: 27, 1935c: 298; Schedl 1960g: 125–126, 128.

***syrutschcki* (Wichmann)** 1913a: 143 (*Dendrosinus*). Holotype ♀; Morogoro, Deutsch-Ost-Afrika; NHMW, Wien.
Distribution: Africa (Tanzania).
References: (**tx**) Eggers 1934: 27; Schedl 1960g: 126; Wichmann 1913a: 143.

***trahax* (Sampson)** 1922b: 148 (*Troglodítica*). Holotype, sex?; Siam: Rajburi and Chiengami Div.; BMNH, London.
Distribution: Asia (Thailand).
Hosts: *Sindora siamensis*.
Notes: (3) Wood, S. L. 1978a: 116 (to *Acacicis*).
References: (**cn**) Mathur & Singh 1961a: 55. (**hb**) Beaver & Browne 1975: 296. (**ds**) Beaver & Browne 1975: 296; Beeson 1961: 301; Kleine 1934a: 131; Mathur & Singh 1961i: 55. (**tx**) Eggers 1933e: 20; Sampson 1922b: 148; Wood, S. L. 1978a: 116.

***zeylanicus* Wood** 1988a: 34. Holotype ♂; Buttala, Sri Lanka, 50 m; USNM, Washington.
Distribution: Asia (Sri Lanka).
Hosts: Liana.
References: (**tx**) Wood, S. L. 1988a: 34.

Genus *Pseudodiamerus* Eggers

PSEUDODIAMERUS EGGERS 1933e: 18. Type-species: *Pseudodiamerus striatus* Eggers, monobasic.
References: (**hb**) Wood, S. L. 1986a: 45. (**ds**) Wood, S. L. 1986a: 45. (**tx**) Eggers 1933e: 18; Schedl 1950d: 2, 1959n: 387–389; Wood, S. L. 1986a: 45.

***aspericollis* Eggers** 1936c: 33. Holotype, sex?; S. Rhodesia: Salisbury; BMNH, London.
Distribution: Africa (Zimbabwe).
References: (**tx**) Eggers 1936c: 33–34; Schedl 1959n: 387.

***obscurus* Eggers** 1943e: 72. Syntypes, sex?; Mozambique (Chimoio); MNHN, Paris.
Figures: Schedl 1959n: 388 (adult).
Distribution: Africa (Mozambique/ South Africa).
References: (**tx**) Eggers 1943e: 72; Schedl 1959n: 388.

obscura Schedl 1962b: 189 (*Phloeoditica*). Holotype, sex?; Basutoland; Schedl Collection at NHMW, Wien. Synonymy: Wood 1988b: 189.
References: (**tx**) Schedl 1962b: 189; Wood, S. L. 1988b: 189.

obscura Schedl 1963h: 261 (*Phloeoditica*). Holotype, sex?; Basutoland; Schedl Collection at NHMW, Wien. Synonymy: Wood 1988b: 189.
References: (**tx**) Schedl 1962b: 189, 1963h: 261; Wood, S. L. 1988b: 189.

***striatus* Eggers** 1933e: 18. Holotype ♂; Angola; BMNH, London.
Figures: Schedl 1959n: 388 (antenna).
Distribution: Africa (Angola/ Zaire).
References: (**tx**) Eggers 1933e: 18, 1936c: 33–34, 1943e: 72; Schedl 1950d: 2, 1959n: 388.

Genus *Bothrosternoides* Schedl

BOTHROSTERNOIDES SCHEDL 1969a: 210. Type-species: *Bothrosternoides malayensis* Schedl, monobasic.
References: (**hb**) Wood, S. L. 1986a: 45. (**ds**) Wood, S. L. 1986a: 45. (**tx**) Schedl 1969a: 210; Wood, S. L. 1986a: 45.

***malayensis* Schedl** 1969a: 211. Holotype ♀; Singapore, Malaya; PPST, Tokyo.
Distribution: Asia (Singapore in Malaya).
Hosts: Nyatoh log.
References: (**tx**) Schedl 1969a: 210–211, 1979c: 146.

Genus *Diamerus* Erichson

DIAMERUS ERICHSON 1836: 57. Type-species: *Hylesinus hispidus* Klug, monobasic.
Acanthurus Eichhoff 1886: 24. Type-species: *Acanthurus spinipennis* Eichhoff = *Hylesinus curvifer* Walker, designated by Hopkins 1914: 116. Synonymy: Hagedorn 1909a: 736.
References: (**tx**) Eichhoff 1886: 24; Hagedorn 1909a: 736; Hopkins 1914: 116; Lucas 1920: 69.

Lissoclastus Schaufuss 1905: 71. Type-species: *Lissoclastus pimelioides* Schaufuss, monobasic. Synonymy: Eggers 1922b: 164.
References: (**tx**) Eggers 1922b: 164; Hagedorn 1910a: 54, 1910d: 30; Lucas 1920: 378; Schaufuss 1905: 71.

References: (**ay**) Nobuchi 1969a: 48. (**bv**) Schedl 1960f: 10. (**hb**) Browne 1961c: 57, 1968b: 232; Schedl 1960g: 142, 1977b: 21; Wood, S. L. 1986a: 45. (**ds**) Browne 1961c: 57; Schedl 1960g: 142, 1977b: 21; Wood, S. L. 1986a: 45. (**tx**) Beeson 1941 (1961: 72); Blanchard 1845; Blandford 1895a; Browne 1938: 23, 1948: 894, 1961c: 57; Chapuis 1869: 50, 1873: 258; Eggers 1922b: 164–165, 1927b: 391–392, 1930a: 167, 1933e: 18; Erichson 1836: 57; Gardner 1934: 3, 6–7; Hagedorn 1909a: 736, 1909b: 137–138, 162, 1910a: 29–32, 54, 1910d: 61, 1913: 253; Hopkins 1914: 120, 1915c: 227; Sampson 1922: 148; Schedl 1936g: 524, 1941d: 383, 1959k: 39–42, 1960f: 10, 1960g: 142–154, 1977b: 21; Wood, S. L. 1986a: 45.

***ater* Hagedorn** 1909a: 735. Holotype, sex?; Nilgiri Hills; Hamburg Museum, lost.
Distribution: Asia (Burma/ Yunnan in China/ Assam, Bengal, Bombay, Kerala, Tamil Nadu in India).
Hosts: *Ficus* spp.
References: (**ds**) Beeson 1961: 287; Hagedorn 1910d: 6; Kleine 1912b: 160, 1914b: 268, 1934a: 125; Schedl 1969c: 47. (**tx**) Eggers 1925: 157; Hagedorn 1909a: 734–735, 1910a: 32; Schedl 1959k: 40.

***batoensis* Eggers** 1927b: 392. Lectotype ♀; Batoe Inseln (Tanah Masa); USNM, Washington, designated by Anderson & Anderson 1971: 5.
Distribution: Indonesia (Batoe Island).
References: (**ds**) Schedl 1966b: 11. (**tx**) Anderson, W. H. & Anderson 1971: 5; Eggers 1927b: 392; Nobuchi 1983: 299; Schedl 1979c: 36.

***brevicollis* Eggers** 1923a: 131. Holotype ♂?; Moroka, Sudost-New Guinea (1300 m); MCG, Genova.
Distribution: New Guinea.
References: (**tx**) Eggers 1923a: 131.

***caesius* Hagedorn** 1909a: 735. Holotype, sex?; Sumatra; MNB, Berlin.
Distribution: Indonesia (Sumatra).
References: (**ds**) Hagedorn 1910d: 6; Kleine 1912b: 160, 1914b: 285. (**tx**) Hagedorn 1909a: 735, 1910a: 32.

***cherenus* Eggers** 1919: 230. Syntypes, sex?; Harrar in Abessinien; Hamburg Museum, lost.
Distribution: Africa (Ethiopia).
References: (**tx**) Eggers 1919: 230; Schedl 1937b: 397, 1960g: 143, 1979c: 56.

***cinerascens* Fairmaire** 1897: 195. Holotype, sex?; Madagascar; not located.
Distribution: Madagascar.
References: (**ds**) Alluaud 1900: 438; Hagedorn 1910d: 6; Kleine 1912b: 160, 1914b: 325. (**tx**) Fairmaire 1897: 195; Hagedorn 1910a: 32, 1913b.

***curvifer* (Walker)** 1859: 261 (*Hylesinus*). Holotype, sex?; Ceylon; BMNH, London.
Distribution: Asia (Burma/ Hainan Island, Yunnan in China/ Andaman Islands, Assam, Bengal, Himachal Pradesh, Maharashtra, Tamil Nadu, Uttar Pradesh in India/ Sri Lanka/ Tonkin Island in Vietnam), Australia (Queensland), Indonesia (Amboina, Borneo, Java, Sumatra), New Guinea, Philippine Islands.
Hosts: *Artocarpus integrifolia, Ficus* spp., *Macaranga andamanica, Symplocos* sp.
References: (**cn**) Roonwal 1954: 87. (**ec**) Thompson, W. R. 1943: 40. (**hb**) Beaver & Browne 1978: 586; Browne 1961c: 57; Kalshoven 1958b: 161. (**ds**) Beaver & Browne 1978: 586; Beeson 1961: 287; Brimblecombe 1953: 5; Browne 1960: 201, 1961c: 57, 1980d: 490, 1986c: 662; Hagedorn 1910d: 6; Kalshoven 1958: 161; Kleine 1912b: 160, 1914b: 272, 1934a: 125; Lacordaire 1866: 363; Motschulsky 1863: 515; Roonwal 1954: 87; Schedl 1959a: 472, 1962b: 186, 1965g: 23, 1966b: 11, 1969c: 47, 1971a: 275, 1974c: 262, 1975a: 454. (**tx**) Browne 1961c: 56; Eggers 1927b: 392, 1936a: 79; Gemminger & Harold 1872: 2674; Hagedorn 1910a: 32; Kalshoven 1959b: 93, 1960d; Lacordaire 1866: 363; Nobuchi 1983: 299; Schedl 1942d: 1, 1954a: 138, 1959a: 472, 1959k: 40, 1965g: 23; Walker 1859: 261.

spinipennis Eichhoff 1886: 24 (*Acanthurus*). Syntypes, sex?; Sumatra (Soepajang: Sum. Exp.; Boenga mas); Hamburg Museum, lost.
Synonymy: Eggers 1927b: 392 (synonymy?), Kalshoven 1959b: 93.
Notes: (1) Kalshoven 1959b: 93 (Synonymy based on 2 specimens in RNH, Leiden examined by Eichhoff).
References: (**ds**) Hagedorn 1910d: 6; Kleine 1912b: 160, 1914b: 285. (**tx**) Browne 1955: 343; Eggers 1923a: 130–131, 1927b: 392; Eichhoff 1886: 24; Hagedorn 1909a: 736, 1910a: 32, 116; Kalshoven 1959b: 93.

dissimilis Hagedorn 1909a: 735. Holotype, sex?; Tharawaddy, Burma; H. E. Andrews Collection, not located. Synonymy: Schedl 1959k: 40.
References: (**ds**) Hagedorn 1910d: 6; Kleine 1912b: 160, 1914b: 278. (**tx**) Hagedorn 1909a: 734–735, 1910a: 32; Kalshoven 1959b: 93; Schedl 1959k: 40.

***eggersi* Schedl** 1937b: 397. Holotype, sex?; Cheren [Eritrea]; Schedl Collection at NHMW, Wien.
Distribution: Africa (Eritrea in Ethiopia/ Somalia).
References: (**tx**) Schedl 1937b: 397, 1960g: 144, 1979c: 87.

***fici* Blandford** 1898: 426. Holotype ♂?; E Himalayas, Tieta Valley; BMNH, London.
Distribution: Asia (Burma/ Yunnan, Xizang [Tibet] in China/ Assam, Bengal in India/ Sri Lanka/ Tonkin Island in Vietnam).
Hosts: *Ficus elastica, F.* spp.
Notes: (3) Beeson 1941(1961: 287) (*naganus*, nomen nudum, synonymy in Schedl 1959k: 40; Beeson series examined by Wood in 1981).
References: (**cn**) Kleine 1932a: 295; Stebbing 1914: 472. (**ec**) Beeson 1922c: 495; Stebbing 1914: 472. (**hb**) Beeson 1922c: 495; Kleine 1932a: 295; Stebbing 1914: 472. (**ds**) Beeson 1922c: 495, 1961: 287; Hagedorn 1910d: 6; Kleine 1912b: 160, 1932a: 295; Schedl 1975a: 452. (**tx**) Blandford 1898a: 426; Hagedorn 1909a, 1910a: 32, 1912a: 337; Schedl 1959k: 40; Stebbing 1914: 472.

***granifer* Browne** 1984d: 87. Holotype, sex?; New Guinea: Popondetta; BMNH, London.
Distribution: New Guinea.
Hosts: *Myristica* sp.
References: (**tx**) Browne 1984d: 87.

***granulatus* Eggers** 1923a: 131. Holotype ♀; Sumatra; USNM, Washington.
Distribution: Indonesia (Sumatra).
References: (**ds**) Schedl 1966b: 12. (**tx**) Anderson, W. H. & Anderson 1971: 14; Eggers 1923a: 131, 1927b: 406, 1936e: 79; Nobuchi 1983: 299.

***griseopubescens* Schedl** 1951i: 52. Holotype ♀; Philippinen, Mt. Makiling, Prov. Laguna, Luzon; Schedl Collection in NHMW, Wien.
Distribution: Philippine Islands (Luzon).
References: (**ds**) Schedl 1966b: 12. (**tx**) Nobuchi 1983: 299; Schedl 1951i: 52, 1979c: 111.

***hispidus* (Klug)** 1832: 202 (*Hylesinus*). Syntypes, sex?; Madagascar; MNB, Berlin.
Distribution: Africa (Kenya/ Tanzania), Madagascar.
References: (**ay**) Imhoff 1856: 228. (**hb**) Schedl 1977b: 23. (**ds**) Alluaud 1900: 438–442; Chapuis 1869: 50, 1873: 258; Fairmaire 1897: 165; Gerstaecker 1873: 250; Hagedorn 1910d: 6; Kleine 1912b: 160, 1914b: 325; Lacordaire 1866: 367; Maire & Lesne 1917: 39; Schedl 1960g: 144. (**tx**) Castelnau 1840; Chapuis 1869: 50, 1873: 258; Erichson 1836: 57; Gemminger & Harold 1872: 2677; Hagedorn 1909a: 736, 1910a: 32, 1910d: 6, 1913b: 253; Hopkins 1914: 120; Klug 1832: 202–203; Lacordaire 1866: 367; Lucas 1920: 230; Schaufuss 1897b: 215; Schedl 1955d: 272, 1960g: 144, 1977b: 23. (**ms**) Lucas 1920: 230.

***impar* Chapuis** 1869: 50. Syntypes, sex?; Guinee, Senegal; IRSNB, Brussels.
Figures: Mayne & Donis 1962: 305, Schedl 1960g: 143.
Distribution: Africa (Angola/ Cameroon/ "French Equatorial Africa"/ Ghana/ Guinea/ Ivory Coast/ Nigeria/ Senegal/ Togo/ Uganda/ Zaire).
Hosts: *Antiaria* sp., *Bosqueia angolensis*, *B.* spp., *Celtis* sp., *Dalhousiea* sp., *Ficus* spp., *Garcinia* sp., *Gossweilerodendron* sp.
References: (**bv**) Schedl 1960f: 53. (**cn**) Ghesquiere 1933a: 30, 36; Thompson, G. H. 1960. (**ec**) Schedl 1961e: 144, 1972c: 57. (**hb**) Browne 1963a: 230; Schedl 1960g: 144; Thompson, G. H. 1963: 38. (**ds**) Browne 1963a: 230, 1975a: 758; Ferreira 1965: 111; Gardner 1957a: 31; Ghesquiere 1933a: 30, 36, 1933b: 780; Hagedorn 1910d: 6; Kleine 1912b: 160, 1914b: 307–309; Lepesme 1948: 145; Mayne & Donis 1960: 102, 1962: 304; Nunberg 1952: 17, 1961a: 328, 1965b: 17; Schedl 1959p: 16, 1960f: 39, 1960g: 144, 1962k: 1064, 1965e: 351, 1965f: 3, 1971e: 2, 1971g: 190, 1972e: 280, 1972k: 295; Thompson, G. H. 1960, 1963: 38. (**tx**) Chapuis 1869: 50, 1873: 258; Eggers 1920: 123–124, 1922b: 164, 1927b: 392, 1940e: 227–228; Gemminger & Harold 1872: 2678; Hagedorn 1909a: 734, 736, 1909b: 162, 1910a: 32; Lepesme 1948: 145; Mayne & Donis 1962: 305; Nunberg 1952: 17; Roberts 1969: 124; Schaufuss 1897a: 215–217, 1905: 3, 71; Schedl 1939g: 170, 1950d: 6, 15, 1953g: 241, 1954e: 49, 1955d: 268, 1959: 16, 1960g: 143–144, 1962j: 10, 64, 1965f: 3.

impar nanus Hagedorn 1909a: 734. Holotype, sex?; Togo; MNB, Berlin.
Notes: (1) Cited as a variety; its status has not been determined. (3) Schedl 1960g: 151 (cited in Kamerun).
References: (**ds**) Nunberg 1961a: 328; Schedl 1960g: 151, 1962k: 1065. (**tx**) Hagedorn 1909a: 734, 1910a: 32, 1910d: 6; Schedl 1954e: 47, 1960g: 151, 1962k: 1065.

***imperfectus* Eggers** 1940c: 227. Holotype, sex?; Franz. Congo: Ogowe; MRCB, Tervuren.
Distribution: Africa (Burkina Faso/ Ghana/ Nigeria/ Zambia).
Hosts: *Ficus exasperata*, *Triplochiton scleroxylon*.
References: (**hb**) Browne 1963a: 231. (**ds**) Beaver & Loeyttyniemi 1985a: 65; Browne 1963a: 231; Schedl 1960i: 151, 1962k: 1065, 1964j: 40, 1965g: 19; Thompson, G. H. 1963: 39. (**tx**) Eggers 1940c: 227; Roberts 1969: 124; Schedl 1954e: 49, 1960g: 151, 1962k: 1065, 1979c: 122.

***inermis* Eggers** 1940c: 228. Holotype, sex?; Congostaat: Haut Uele; MRCB, Tervuren.
Distribution: Africa (Kenya/ Tanzania/ Zaire).
References: (**ds**) Nunberg 1952: 17, 1965b: 17. (**tx**) Eggers 1920: 124, 1940c: 228; Nunberg 1952: 17; Schedl 1960g: 152, 1979c: 124.

***interstitialis* (Lea)** 1910: 145 (*Hylesinus*). Syntypes, sex?; Queensland: Cairns; SAM, Adelaide.
Distribution: Asia (Andaman Islands), Australia (New South Wales/ Queensland), Indonesia (Sarawak in Borneo, Ternate), New Guinea, Philippine Islands.
Hosts: *Artocarpus anisophylla*.
References: (**ds**) Brimblecombe 1953: 5; Browne 1966: 242, 1985a: 190; Ohno, Yoneyama, & Nakazawa 1987: 93; Ohno et al. 1988a: 91, 1989: 60; Schedl 1936g: 524, 1965g: 25, 1966b: 12, 1972a: 143. (**tx**) Browne 1966: 242; Eggers 1940h: 62; Lea 1910: 145; Nobuchi 1983: 299; Schedl 1936g: 524, 1940c: 206, 1955b: 279, 1958i: 214, 1965g: 25.

subsulcatus Eggers 1923a: 130. Lectotype ♀; Australia (Somerset); USNM, Washington, designated by Anderson & Anderson 1971: 33.
Synonymy: Eggers 1940h: 62.
References: (**tx**) Anderson, W. H. & Anderson 1971: 33; Eggers 1923a: 130, 1927b: 406, 1940h: 62; Schedl 1979c: 244.

***lignivorus* Browne** 1955: 343. Holotype ♂; Malay Peninsula: Kelantan, Temangan; BMNH, London.
Distribution: Asia (Malaya).
References: (**hb**) Browne 1961c: 158. (**tx**) Browne 1955: 343, 1961c: 58.

***luteus* Hagedorn** 1909a: 735. Holotype, sex?; Sumatra; MNB, Berlin.
Distribution: Asia (Malaya), Indonesia (Java, Sumatra).
Hosts: *Artocarpus kunstleri*, *Garcinia* sp.
References: (**hb**) Beaver & Browne 1978: 587; Browne 1938a, 1961c: 59; Kalshoven 1958b: 161. (**ds**) Beaver & Browne 1978: 587; Beeson 1961: 287; Browne 1938a, 1961c: 59, 1983a: 554; Hagedorn 1910d: 6; Kalshoven 1958: 162; Kleine 1912b: 160. (**tx**) Eggers 1927b: 406, 1936e: 77; Hagedorn 1909a: 734–735, 1910a: 32; Schedl 1939e: 328, 1979c: 143.

***mangiferae* Browne** 1955: 344. Holotype ♀; Malay Peninsula: Malacca; BMNH, London.
Distribution: Asia (Malaysia).

Hosts: *Mangifera indica*.
References: (**hb**) Browne 1961c: 59. (**ds**) Browne 1961c: 59. (**tx**) Browne 1955: 344.

***matangi* Sampson** 1919: 108. Holotype ♂?; Sarawak: Mt. Matang; BMNH, London.
Distribution: Asia (Xizang [Tibet] in China), Indonesia (Sarawak in Borneo).
References: (**ds**) Sampson 1919: 108; Schedl 1975a: 454. (**tx**) Eggers 1927b: 406; Sampson 1919: 107–108; Schedl 1979c: 149.

***merinjaki* Sampson** 1919: 107. Holotype ♂?; Sarawak: Mt. Merinjak; BMNH, London.
Distribution: Indonesia (Sarawak in Borneo), Philippine Islands (Luzon/ Mindanao).
Notes: (3) Schedl 1938g: 424 (described female).
References: (**ds**) Sampson 1919: 107; Schedl 1938g: 424, 1966b: 13. (**tx**) Eggers 1923a: 132; Nobuchi 1983: 299; Sampson 1919: 107–108; Schedl 1938g: 424, 1951i: 50, 1979c: 151.

***minor* Eggers** 1936e: 79. Holotype ♀; Java: Semarang, Teak-forest; Kalshoven Collection, not located.
Distribution: Indonesia (Java).
Hosts: *Ficus* cf *glabella*, *Tectona grandis*.
References: (**hb**) Kalshoven 1958b: 162. (**tx**) Eggers 1936e: 79–80; Schedl 1979c: 154.

***nigrisetosus* Eggers** 1936e: 79. Holotype ♂; Java (Nr. 528b); Kalshoven Collection, not located.
Distribution: Asia (Bengal in India), Indonesia (Java).
Hosts: *Macaranga denticulata*, *Mangifera indica*, *Terminalia tomentosa*.
References: (**hb**) Kalshoven 1958b: 162. (**tx**) Eggers 1936e: 79; Schedl 1942a: 169, 1959k: 40, 1979c: 167.

***obtusus* Eggers** 1936e: 78. Holotype, sex?; Java (G. Tangkoeban Praho, 4000–5000 Fuss hoch, Preanger); ZMA, Amsterdam.
Distribution: Indonesia (Java).
References: (**tx**) Eggers 1936e: 78; Schedl 1979c: 176.

***opacus* Eggers** 1923a: 132. Lectotype ♀; Si Rambe, Sumatra; USNM, Washington, designated by Anderson & Anderson 1971: 23.
Distribution: Asia (Maharashtra in India), Indonesia (Sumatra).
References: (**tx**) Anderson, W. H. & Anderson 1971: 23; Browne 1955: 341; Eggers 1923a: 132.

***parvus* Eggers** 1943e: 71. Holotype, sex?; Mozambique (Vallee du Pungoue Guenguere); MNHN, Paris, on loan to Schedl in NHMW, Wien.
Distribution: Africa (Mozambique).
Notes: (1) Eggers died before the holotype could be returned to MNHN, Paris; the holotype was then taken on loan by Schedl and has not been returned.
References: (**tx**) Eggers 1943e: 71; Schedl 1960g: 152, 1979c: 186.

***pimelioides* (Schaufuss)** 1905: 71 (*Lissoclastus*). Syntypes, sex?; Kamerun; Hamburg Museum, lost.
Distribution: Africa (Cameroon/ Tanzania/ Zaire).
Hosts: Bosqueria angolensis.
Notes: (1) Eggers 1922b: 164 (to *Diamerus*).
References: (ds) Hagedorn 1910d: 30; Kleine 1912b: 187, 1914b: 310; Roberts 1969: 125; Schedl 1960g: 152, 1965f: 3. (**tx**) Eggers 1920: 123, 1922b: 164; Hagedorn 1909b: 162, 1910a: 54; Hopkins 1914: 124; Lucas 1920: 378; Schaufuss 1905: 1, 71; Schedl 1960g: 152, 1965g: 19; Strohmeyer 1910c: 70. (**ms**) Lucas 1920: 378.
tuberculatus Hagedorn 1909a: 734. Holotype, sex?; Kamerun; MNB, Berlin. Synonymy: Hagedorn 1909b: 162.
References: (**ds**) Hagedorn 1910d: 6; Kleine 1912b: 160, 1914b: 309. (**tx**) Eggers 1920: 123, 1922b: 164–165; Hagedorn 1909a: 734, 1909b: 162, 1910a: 32.

***propinquus* Nunberg** 1969a: 399. Holotype, sex?; Ivory Coast; MRCB, Tervuren.
Distribution: Africa (Ivory Coast).
References: (**tx**) Nunberg 1969a: 399.

***pulverulentus* Gerstaecker** 1873: 249. Syntypes 2 ♀; Auf den Bura-Bergen, am See Jipe und bei Endara; MNB, Berlin, USNM, Washington.
Distribution: Africa (Cameroon/ French Guinea/ Ghana/ Kenya/ Mozambique/ Somalia/ Tanzania/ Zaire/ Zanzibar).
Hosts: *Ficus* spp.
References: (**cn**) Anonymous 1970c: 13. (**hb**) Loyttyniemi, Beaver, & Loyttyniemi 1984. (**ds**) Anonymous 1970c: 13; Beaver & Loeyttyniemi 1985a: 66; Gardner 1957a: 31; Hagedorn 1910d: 6; Kleine 1912b: 160, 1914b: 323; Kolbe 1897: 283; Schedl 1960g: 19, 153, 1965e: 351, 1970h: 180, 1971e: 2, 1971g: 190, 1975k: 276, 1982: 278. (**tx**) Eggers 1920: 123–124, 1923a: 131, 1927a: 197, 1943e: 71; Gemminger & Harold 1872: 2678; Gerstaecker 1873: 249; Hagedorn 1910a: 32; Schedl 1937b: 397, 1950d: 17, 1954e: 47, 1955c: 30, 1955d: 268, 271, 1960g: 153, 1965g: 19, 1979c: 204.

***puncticollis* Eggers** 1927c: 68. Lectotype ♀; Philippinen: Luzon, Provinz Rizal, Montalban; USNM, Washington, designated by Anderson & Anderson 1971: 27.
Distribution: Philippine Islands (Luzon).
References: (**ds**) Schedl 1966b: 13. (**tx**) Anderson, W. H. & Anderson 1971: 27; Browne 1955: 343; Eggers 1927c: 68; Nobuchi 1983: 299; Schedl 1951i: 52, 1979c: 205.

***ritsemae* (Eichhoff)** 1886: 25 (*Acanthurus*). Holotype ♂; Sumatra (Serdang); RNH, Leiden.
Distribution: Indonesia (Java, Sumatra).
References: (**cn**) Kalshoven 1932: 243. (**hb**) Browne 1961c: 58. (**ds**) Browne 1961c: 58; Eichhoff 1886: 25; Hagedorn 1910d: 6; Hagen 1890; Kalshoven 1932: 243; Kleine 1912b: 160, 1914b: 285. (**tx**) Browne 1961: 58; Eichhoff 1886: 25;

Hagedorn 1909a, 1910a: 32; Kalshoven 1959b: 93, 1960d.

nigrescens Eggers 1936e: 77. Holotype, sex?; Java (G. Slamat, Batoerraden); ZMA, Amsterdam. Synonymy: Kalshoven 1959b: 93.

References: (**tx**) Browne 1961: 58; Eggers 1936e: 72–79; Kalshoven 1959b: 93; Schedl 1979c: 167.

***striatus* Eggers** 1927c: 67. Lectotype ♀; Phlippinen: Mindoro, San Teodoro; USNM, Washington, designated by Anderson & Anderson 1971: 31.

Distribution: Asia (Yunnan in China/ Bengal in India/ Malaya), Philippine Islands (Mindoro).

References: (**hb**) Browne 1961c: 59. (**ds**) Browne 1955: 345, 1961c: 59; Schedl 1966b: 13. (**tx**) Anderson, W. H. & Anderson 1971: 31; Browne 1955: 343, 345; Eggers 1927c: 67, 1936e: 78; Nobuchi 1983: 299; Schedl 1951i: 50, 1979c: 238.

***variegatus* Schedl** 1959k: 41. Holotype ♀; Dehra Dun, Thano R.; supposedly deposited in FRI, Dehra Dun.

Distribution: Asia (Burma/ Madhya Pradesh, Tamil Nadu, Uttar Pradesh in India).

Hosts: *Ficus bengalensis, F. religiosa, F. rumphii, F.* spp.

Notes: (3) Beeson 1941(1961: 287) (*variegatus*, nomen nudum). All specimens sent by FRI, Dehra Dun, to Schedl are acounted for; none were ever returned to FRI by him; one of the Schedl paratypes at NHMW, Wien, may be the missing holotype.

References: (**ds**) Beeson 1961: 287. (**tx**) Schedl 1959k: 41, 1979c: 264.

Genus *Sphaerotrypes* Blandford

SPHAEROTRYPES BLANDFORD 1894d: 61. Type-species: *Sphaerotrypes pila* Blandford, subsequent designation by Hopkins 1914: 129.

References: (**ay**) Nobuchi 1969a: 47. (**hb**) Browne 1961c: 60; Schedl 1961k: 335; Wood, S. L. 1986a: 45. (**ds**) Browne 1961c: 60; Schedl 1961k: 335; Wood, S. L. 1986a: 45. (**tx**) Beeson 1921: 514–518, 1941: 385–387; Blandford 1894d: 61, 1897a: 151; Browne 1938: 23, 1961: 60; Choo 1983: 42; Choo, Woo, & Nobuchi 1988b; Gardner 1934: 3, 5–6; Garthwaite 1940: 94–106; Hagedorn 1909a: 739–740, 1910a: 35, 50–51, 1910d: 18, 61; Hopkins 1914: 129, 1915c: 227; Kalshoven 1958: 163; Lucas 1920: 602; Murayama 1951: 2, 1963: 68–71; Schedl 1957d, 1959k: 39–42, 1959n: 335–340, 1961k: 335; Stebbing 1907: 28; Strohmeyer 1911: 18; Wood, S. L. 1986a: 45; Yin & Huang 1981: 558.

***bangensis* Eggers** 1927c: 73. Lectotype, sex?; Philippinen: Mindanao, Prov. Zamboanga, Port Banga; USNM, Washington, designated by Anderson & Anderson 1971: 5.

Distribution: Asia (Vietnam), Philippine Islands (Mindanao).

References: (**ds**) Schedl 1966b: 14. (**tx**) Anderson, W. H. & Anderson 1971: 5; Eggers 1927c: 73; Nobuchi 1983: 299; Schedl 1953b: 123.

***barbatus* Hagedorn** 1909a: 739. Syntypes, sex?; Nordost-Sumatra; Kamerun; MNB, Berlin.

Distribution: Indonesia (Sumatra).

References: (**ay**) Heymons 1920b: 98. (**ds**) Eggers 1920; Hagedorn 1910d: 18; Kleine 1912b: 174, 1914b: 285; Nunberg 1964a: 234. (**tx**) Eggers 1920: 122; Hagedorn 1909a: 739, 1910a: 51; Nunberg 1964a: 234; Strohmeyer 1911: 20.

***bengalensis* Wood** 1988a: 35. Holotype ♂; Samsingh, Kalimpong, Bengal, India; FRI, Dehra Dun.

Distribution: Asia (Bengal in India).

Hosts: *Sahaje jahara*.

References: (**tx**) Wood, S. L. 1988a: 35.

***bicolor* Eggers** 1927c: 70. Holotype ♀; Borneo, Sandakan; USNM, Washington.

Distribution: Indonesia (Borneo).

References: (**tx**) Anderson, W. H. & Anderson 1971: 5; Eggers 1927c: 70.

***biseriatus* Schedl** 1964g: 243. Holotype, sex?; Sarawak, Serapah; BMNH, London.

Distribution: Indonesia (Sarawak in Borneo).

Hosts: *Vatica* sp.

References: (**ds**) Browne 1980c: 482, 1984c: 448; Ohno, Yoneyama, & Nakazawa 1982b: 7. (**tx**) Nobuchi 1983: 299; Schedl 1964g: 243.

***blandfordi* Schaufuss** 1897b: 102. Holotype, sex?; Birma; Hamburg Museum, lost.

Distribution: Asia (Burma).

References: (**ds**) Hagedorn 1910d: 18; Kleine 1912b: 174, 1914b: 278. (**tx**) Eggers 1925: 152, 1927c: 72; Hagedorn 1910a: 51; Schaufuss 1897b: 102; Strohmeyer 1911: 20.

***boettcheri* Eggers** 1927c: 72. Holotype ♀; Philippinen: Mindoro, Suban; USNM, Washington.

Distribution: Philippine Islands (Mindoro).

References: (**ds**) Schedl 1966b: 14. (**tx**) Anderson, W. H. & Anderson 1971: 6; Eggers 1927c: 72; Nobuchi 1983: 299.

***brevisetosus* Browne** 1979: 599. Holotype, sex?; Malaysia; BMNH, London.

Figures: Beaver & Browne 1978: 576.

Distribution: Asia (Malaysia).

References: (**hb**) Beaver & Browne 1978: 599. (**tx**) Beaver & Browne 1978: 576; Browne 1979: 599.

***brunneus* Heymons** 1920b: 98. Holotype, sex?; Bisheriges Deutsch-Sudwestafrika; Hamburg Museum, lost.

Distribution: Africa (Kenya).

References: (**ds**) Schedl 1961k: 336. (**tx**) Eggers 1932: 27; Heymons 1920b: 98; Schedl 1961k: 336.

***bryanti* Browne** 1961a: 300. Holotype ♂; Sarawak: Mt. Merinjak, 2200 ft.; BMNH, London.

Distribution: Indonesia (Sarawak in Borneo).
References: (**ds**) Browne 1985a: 190. (**tx**) Browne 1961a: 300.

***carinatus* Eggers** 1927c: 71. Holotype ♀; Borneo, Sandakan; USNM, Washington.
Distribution: Indonesia (Sarawak in Borneo).
References: (**hb**) Browne 1961c: 60–61. (**ds**) Browne 1961c: 60–61, 1986c: 662. (**tx**) Anderson, W. H. & Anderson 1971: 9; Eggers 1927c: 71.

***carpini* Eggers** 1926b: 134. Lectotype, sex?; Sapporo, Japan; USNM, Washington, designated by Anderson & Anderson 1971: 9.
Distribution: Asia (Japan).
Notes: (3) Murayama 1966: 68 (treated as a synonym of *pila*).
References: (**ds**) Nobuchi 1985: 2. (**tx**) Anderson, W. H. & Anderson 1971: 9; Eggers 1926b: 134; Krivolutskaya 1970: 211; Michalski 1969b: 566; Murayama 1966: 68; Schedl 1934f: 1635, 1954b: 198.

***coimbatorensis* Stebbing** 1906: 395. Syntypes 2 ♂; India; FRI, Dehra Dun.
Distribution: Asia (Burma/ Karnataka, Maharashtra, Tamil Nadu in India/ Sri Lanka).
Hosts: *Anogeissus acuminata, A. latifolia.*
Notes: (3) Schedl 1959k: 40 (Schedl confused at least three species under this name).
References: (**cn**) Mathur & Singh 1961b: 41; Roonwal 1954: 73; Stebbing 1914: 490. (**ec**) Stebbing 1914: 490. (**hb**) Stebbing 1914: 490. (**ds**) Beeson 1921a: 514–518, 1961: 297; Hagedorn 1910d: 18; Kleine 1912b: 174, 1914b: 268, 1934a: 131; Mathur & Singh 1961b: 41; Roonwal 1954: 73. (**tx**) Beeson 1921a: 514–518; Eggers 1927c: 74; Hagedorn 1910a: 51; Murayama 1911: 19; Schedl 1959k: 40–41; Stebbing 1906: 395, 1907: 24, 1908b: 4, 1914: 490; Strohmeyer 1911b: 19.

***congonus* Eggers** 1932c: 27. Holotype, sex?; Congostaat: Bukama; MRCB, Tervuren.
Distribution: Africa (Angola/ Zaire).
References: (**ds**) Ferreira 1965: 1111; Schedl 1961k: 336. (**tx**) Eggers 1932c: 27; Schedl 1961k: 336.

***costatus* Wood** 1988a: 35. Holotype ♂; North Andaman Island; FRI, Dehra Dun.
Distribution: Asia (North Andaman Island in India).
Hosts: *Dipterocarpus turbinatus.*
References: (**tx**) Wood, S. L. 1988a: 35.

***cristatus* Wood** 1988a: 36. Holotype ♂; Gilmale, Ratnapura District, Sri Lanka; USNM, Washington.
Distribution: Asia (Sri Lanka).
Hosts: *Doonia cordifolia, Vateria copalifera.*
References: (**tx**) Wood, S. L. 1988a: 36.

***expressus* Schedl** 1937b: 398. Syntypes ♀; Ussambara, Congo; Schedl Collection in NHMW, Wien.
Distribution: Africa (Zaire).
References: (**ds**) Schedl 1975k: 276. (**tx**) Schedl 1937b: 398, 1961k: 337, 1979c: 94.

***globulus* Blandford** 1894d: 63. Syntypes, sex?; India, Belgaum; BMNH, London.
Distribution: Asia (Bangladesh/ Burma/ Maharashtra, Tamil Nadu, Uttar Pradesh in India/ Sri Lanka).
Hosts: *Anogeissus latifolia, Lagerstroemia lanceolata, L. parviflora, Shorea robusta, Terminalia arjuna, T. tomentosa.*
References: (**cn**) Kleine 1932a: 296; Mathur & Singh 1960c: 6, 1961a: 45, 1961b: 41; Pierce, W. D. 1917: 193; Roonwal 1954: 73; Stebbing 1914: 487. (**ec**) Stebbing 1914: 487. (**hb**) Beaver & Browne 1975: 295; Kleine 1932a: 296; Stebbing 1914: 487. (**ds**) Beaver & Browne 1975: 295; Beeson 1921a: 514–518; Browne 1980b: 380; Hagedorn 1910d: 18; Kleine 1912b: 174, 1914b: 268, 1932a: 296, 1934a: 131; Mathur & Singh 1961b: 41, 1961a: 45, 1960c: 6; Pierce, W. D. 1917: 193; Roonwal 1954: 73; Schedl 1962b: 186. (**tx**) Beeson 1915: 296, 1921a: 514–518, 1922: 498; Blackman 1936: 536; Blandford 1894d: 63; Eggers 1927c: 74; Hagedorn 1910a: 51; Schedl 1959k: 42; Stebbing 1914: 487; Strohmeyer 1911b: 19.

***grandis* Schedl** 1957d: 31. Holotype, sex?; Gold Coast; Schedl Collection in NHMW, Wien.
Figures: Schedl 1961k: 337–338.
Distribution: Africa (Ghana/ Uganda/ Zaire).
References: (**ds**) Gardner 1957a: 32; Schedl 1961k: 337. (**tx**) Schedl 1955i: 211, 214, 1957d: 31, 1961k: 337–338.

***hagedorni* Eggers** 1920: 122. Holotype, sex?; Kamerun; MNB, Berlin.
Distribution: Africa (Cameroon/ Nigeria).
References: (**cn**) Kudler 1978; Anderson, W. H. & Anderson 1971: 16. (**ds**) Roberts 1966a; Schedl 1961k: 338, 1962k: 1065. (**tx**) Eggers 1920: 122, 1932c: 27–28; Nunberg 1964: 234; Roberts 1969: 128; Schedl 1961k: 338, 1962k: 1065.

***helferi* Eggers** 1925: 152, 154. Holotype, sex?; Tenasserim, Birma; Prague Museum.
Distribution: Asia (Burma).
References: (**tx**) Eggers 1925: 152, 154.

***inermis* Browne** 1981a: 127. Holotype, sex?; intercepted: Sablayan, Philippines to Takamatsu, Japan; BMNH, London.
Distribution: Philippine Islands.
Hosts: *Shorea* sp.
References: (**tx**) Browne 1981a: 127; Nobuchi 1893: 299.

***insularis* Eggers** 1927c: 74. Holotype ♀; Philippinen: Mindanao, Prov. Lanao, Kolambugan; USNM, Washington.
Distribution: Philippine Islands (Mindanao).
References: (**ds**) Schedl 1966b: 14. (**tx**) Anderson, W. H. & Anderson 1971: 16; Eggers 1927c: 74; Nobuchi 1983: 299.

***juglansi* Tsai & Yin** 1966: 239. Holotype ♂; Shensi, Shihchuan, China; IZAS, Beijing.
Distribution: Asia (Anhui, Shanxi, Sichuan in China).
Hosts: *Juglans regia, Pterocarpa stenoptera*.
References: (**ds**) Krivolutskaya 1983. (**tx**) Krivolutskaya 1970: 207; Tsai & Yin 1966: 239.

***juglansis* Krivolutskaya & Kupyanskaya** 1973: 210. Holotype, sex?; Primorye region, Russian SFSR; not located, presumably at Vladivostok.
Figures: Krivolutskaya 1970: 208–209.
Distribution: Asia (E USSR).
Hosts: *Juglans* sp.
References: (**tx**) Krivolutskaya 1970: 208–209; Krivolutskaya & Kupyanskaya 1973: 210.

***limbatus* Eggers** 1943d: 244. Holotype, sex?; Indien; Strohmeyer Collection.
Distribution: Asia (India).
References: (**tx**) Eggers 1943d: 244.

***magnus* Tsai & Yin** 1966: 234. Holotype ♂; Szechwan: Miyalo, 2600 m; IZAS, Beijing.
Distribution: Asia (Sichuan, Yunnan in China).
Hosts: *Tsuga chinensis*.
References: (**tx**) Tsai & Yin 1966: 234.

***minutus* Browne** 1961a: 302. Holotype ♀?; Malaya: Penang; BMNH, London.
Distribution: Asia (Malaya).
Hosts: *Shorea leprosula, Vatica* sp.
References: (**hb**) Browne 1961c: 61. (**ds**) Beaver & Browne 1978: 600; Browne 1961a: 302, 1961c: 61. (**tx**) Browne 1961a: 302.

***moseri* Eggers** 1927c: 73. Lectotype, sex?; Philippinen: Mindanao, Prov. Zamboanga, Port Banga; USNM, Washington, designated by Anderson & Anderson 1971: 21.
Distribution: Philippine Islands (Mindanao).
References: (**ds**) Schedl 1966b: 14, 1969a: 204. (**tx**) Anderson, W. H. & Anderson 1971: 21; Eggers 1927c: 73; Nobuchi 1983: 299; Schedl 1951i: 50.

***palawanus* Eggers** 1927c: 74. Syntypes 2, sex?; Philippinen: Palawan, Binaluan; 1 in Linnaniemi Collection, Turku, Finland, Eggers syntype in Schedl Collection in NHMW, Wien.
Distribution: Philippine Islands (Palawan).
References: (**ds**) Schedl 1966b: 14. (**tx**) Eggers 1927c: 74; Nobuchi 1983: 299.

***pentacme* Wood** 1988a: 36. Holotype ♂; Mohnyin Res., Myitkyina, Burma; FRI, Dehra Dun.
Distribution: Asia (Burma).
Hosts: *Pentacme suavis*.
References: (**tx**) Wood, S. L. 1988a: 36.

***philippinensis* Strohmeyer** 1911b: 18. Holotype, sex?; Philippine Is.: Mindanao, Zamboanga; Philippine Bureau of Science, Manila.
Distribution: Philippine Islands (Mindanao).
Hosts: *Hopea* sp.
References: (**cn**) Kleine 1932a: 296. (**hb**) Kleine 1932a: 296. (**ds**) Kleine 1912b: 174, 1914b: 290, 1932a: 296; Schedl 1966b: 15. (**tx**) Nobuchi 1983: 299; Strohmeyer 1911b: 18–20.

***pila* Blandford** 1894d: 62. Syntypes, sex?; Hitoyoshi, Japan; BMNH, London.
Figures: Nakane et al. 1963:pl. 191.
Distribution: Asia (China/ Korea/ Japan/ Taiwan).
Hosts: *Distylium racemosum, Quercus acutissima, Q. myrsinaefolia, Thea japonica*.
Notes: (3) Murayama 1966: 68 (*carpini* Eggers a synonym of *pila*).
References: (**cn**) Anonymous 1980g; Shiraki 1952. (**ds**) Anonymous 1980g; Blandford 1894c; Choo 1957, 1983: 42; Choo & Woo 1985: 163; Choo, Woo, & Nobuchi 1988a: 133; Hagedorn 1910d: 18; Kleine 1912b: 174, 1914b: 255, 1934a: 131; Ko 1969: 283; Murayama 1929b: 2, 1930b: 9, 1937b: 375, 1953b: 150, 1955: 100; Nakane et al. 1963: 381; Nobuchi 1967: 18; Shiraki 1952. (**tx**) Blandford 1894d: 62; Choo 1983: 42; Eggers 1926b: 134, 1927c: 74; Hagedorn 1910a: 151; Hopkins 1914: 129; Murayama 1930a: 9, 13, 30, 1937b: 375, 1954b: 161, 1955: 100, 105, 1963b: 68; Nakane et al. 1963: 381, pl. 191; Niisima 1910a: 7; Schedl 1934f: 1635, 1955d: 273; Strohmeyer 1911b: 19, 1914: 32.

imitans Eggers 1926b: 134. Lectotype, sex?; Japan, Takaoberg bei Hachioji; USNM, Washington, designated by Anderson & Anderson 1971: 15. Synonymy: Murayama 1965b: 9.
References: (**ds**) Nobuchi 1985: 2. (**tx**) Anderson, W. H. & Anderson 1971: 15; Eggers 1926b: 134; Murayama 1965b: 9; Schedl 1934f: 1635; Yin & Huang 1981: 558.

***pygeumi* Schedl** 1955i: 214. Syntypes, sex?; Kenya: Londiani; BMNH, London.
Distribution: Africa (Kenya/ South Africa/ Tanzania).
Hosts: *Pygeum africanum*.
References: (**cn**) Anonymous 1970c: 13. (**ds**) Anonymous 1970c: 13; Browne 1970: 539; Gardner 1957a: 32; Schedl 1961k: 339. (**tx**) Schedl 1955i: 211, 214, 1961k: 339.

***pyri* Tsai & Yin** 1966: 240. Holotype ♂; Yunnan: Menghai [China]; IZAS, Beijing.
Distribution: Asia (Shanxi, Sichuan, Yunnan in China).
Hosts: *Pyrus betulaefolia*.
References: (**tx**) Tsai & Yin 1966: 240.

***quadrituberculatus* Sampson** 1922b: 150. Holotype, sex?; Assam, Chittagong; BMNH, London.
Distribution: Asia (Bangladesh/ Assam in India), Philippine Islands (Luzon).
Hosts: *Drimycarpus racemosus, Parashorea plicata, Pentacme contorta, P. suavis*.
References: (**hb**) Beaver & Browne 1975: 296. (**ds**) Beaver & Browne 1975: 296; Beeson 1961: 297; Browne 1970: 539; Kleine 1934a: 131; Schedl 1938g: 424. (**tx**) Eggers 1927c: 70–71; Sampson 1922b: 150; Schedl 1938g: 424, 1959k: 42.

***querci* Stebbing** 1908b: 5. Syntypes, sex?; India: N-W Himalaya, Kumaun; FRI, Dehra Dun, lost.
Distribution: Asia (Anhui, Habei, Shanxi, Sichuan, Yunnan in China/ Maharashtra, Punjab, Uttar Pradesh in India).
Hosts: *Quercus dilatata, Q. incana, Q. semicarpifolia.*
References: (**cn**) Stebbing 1914: 493. (**ec**) Stebbing 1914: 493. (**hb**) Stebbing 1914: 493. (**ds**) Beeson 1921a: 514–518, 1961: 297; Kleine 1914b: 268. (**tx**) Beeson 1921a: 514–518; Hagedorn 1910a: 51; Stebbing 1908b: 5, 1914: 493.

globulus Stebbing 1909b: 21 (*Chramesus*). Holotype, sex?; Kathian, Chakrata, U.P., India on holotype, published as Jaunsar, North-West Himalaya, India; FRI, Dehra Dun, preoccupied by Blandford 1894. Synonymy: Wood 1992b: 84.
Notes: (1) Beeson 1921a: 514 (to *Sphaerotrypes*).
References: (**cn**) Pierce 1917: 193; Stebbing 1914: 498. (**ec**) Beeson 1922c: 499; Stebbing 1914: 498. (**hb**) Beeson 1915b, 1922c: 499; Stebbing 1914: 498. (**ds**) Beeson 1915b, 1922c, 1961: 297; Heyden, Reitter, & Weise 1906: 98; Pierce 1917: 193. (**tx**) Eggers 1927c; Hagedorn 1909a; Stebbing 1909b: 21, 1914: 498; Wood, S. L. 1992b: 84.

tectus Beeson 1921a: 514. Holotype, sex?; Kathian, Chakrata, U.P., India; FRI, Dehra Dun, automatic. Synonymy: Wood 1992b:84–85.
References: (**cn**) Kleine 1932a: 296. (**ec**) Beeson 1922c: 499. (**hb**) Beeson 1922c: 499; Kleine 1932a: 296. (**ds**) Beeson 1921a: 514–518, 1922c: 499, 1961: 298; Kleine 1932a: 296, 1934a: 131. (**tx**) Beeson 1921a: 514–518; Browne 1970: 545; Schedl 1964g: 243; Wood, S. L. 1992b: 84–85.

***ranasinghei* Wood** 1988a: 37. Holotype ♂: Kanneliya, Sri Lanka; USNM, Washington.
Distribution: Asia (Sri Lanka).
References: (**tx**) Wood, S. L. 1988a: 37.

***rufopalliatus* Schedl** 1939e: 338. Syntypes, sex?; Malaya, Selangor: Sungei Buloh For. Res.; BMNH, London.
Distribution: Asia (Malaya).
Hosts: *Shorea parvifolia.*
References: (**cn**) Mathur & Singh 1961a: 41. (**hb**) Browne 1938a, 1961c: 61. (**ds**) Beeson 1961: 297; Browne 1938a, 1961c: 61; Mathur & Singh 1961a: 41. (**tx**) Schedl 1939e: 338.

***siwalikensis* Stebbing** 1906: 389. Syntypes, sex?; India: United Provinces E into Nepal; FRI, Dehra Dun, lost.
Figures: Stebbing 1914: 476 (adult).
Distribution: Asia (Bangladesh/ Burma/ Assam, Bengal, Madhya Pradesh, Uttar Pradesh in India/ Nepal).
Hosts: *Shorea robusta, S. assamica.*
References: (**cn**) Browne 1968: 655; Kleine 1932a: 296; Mathur & Singh 1961a: 37; Pierce, W. D. 1917: 193; Stebbing 1914: 476. (**ec**) Beeson 1922c: 498, 1923; Pierce, W. D. 1917: 193; Stebbing 1914: 476. (**hb**) Beeson 1915b: 296, 1922c: 498, 1923, 1934: 539–543; Browne 1968: 655; Coks 1889; Gardner 1930: 15–18, 1934: 1–17; Kleine 1932a: 296; Stebbing 1908a: 109, 1914: 476. (**ds**) Beaver & Browne 1975: 296; Beeson 1915b: 296, 1919b: 10–15, 1921a: 514–518, 1922c: 498, 1923, 1934: 539–543, 1961: 297; Browne 1968: 655, 1980a: 370; Hagedorn 1910d: 18; Kleine 1912b: 174, 1914b: 268, 1932a: 296, 1934a: 131; Mathur & Singh 1961a: 37; Pierce, W. D. 1917: 193; Schedl 1975a. (**tx**) Beeson 1921a: 514–518; Eggers 1925: 159; Hagedorn 1910a: 51; Schedl 1955d: 272, 1959k: 42; Stebbing 1906: 389, 1907a: 23–24, 1908b: 3, 1914: 476; Strohmeyer 1911b: 19.

assamensis Stebbing 1907a: 23. Holotype ♀; Kuchugaon, Goalpara, Assam; FRI, Dehra Dun. Synonymy: Beeson 1915b: 296.
References: (**cn**) Pierce, W. D. 1917: 193; Stebbing 1914: 481. (**ec**) Stebbing 1914: 481. (**hb**) Beeson 1915b: 296; Stebbing 1914: 481. (**ds**) Beeson 1915b: 296, 1921a: 514–518; Kleine 1914b: 268; Pierce, W. D. 1917: 193. (**tx**) Beeson 1921a: 514–518; Hagedorn 1910a: 50; Stebbing 1907a: 23, 1908b: 4, 1914: 310, 314, 481.

***subtectus* Browne** 1970: 545. Holotype, sex?; India: Nilgiri Hills; BMNH, London.
Distribution: Asia (Assam, Maharashtra, Tamil Nadu in India).
Hosts: *Hopea parviflora, H. wrightiana.*
Notes: (3) Beeson 1941 (1961: 297) (*dulcispei*, nomen nudum).
References: (**ds**) Beeson 1941 (1961: 297). (**tx**) Browne 1970: 545; Schedl 1959k: 41.

***sulcatus* Browne** 1986a: 90. Holotype, sex?; Tanjong Mani (Sarawak) to Imabari, Japan, imported; BMNH, London.
Distribution: Indonesia (Sarawak in Borneo).
Hosts: Medang (Lauraceae) log.
References: (**tx**) Browne 1986a: 90.

***tanganus* Schaufuss** 1897b: 101. Holotype, sex?; Ostafrika; Hamburg Museum, lost.
Figures: Kudler 1978: 24.
Distribution: Africa (Ostafrika[Tanzania?]).
References: (**cn**) Kudler 1978. (**hb**) Heymons 1920: 99. (**ds**) Hagedorn 1910d: 18; Kleine 1912b: 174, 1914b: 321; Schedl 1961k: 340. (**tx**) Eggers 1932c: 27; Hagedorn 1910a: 51; Kudler 1978: 24; Schaufuss 1897b: 101; Schedl 1937b: 398, 1961k: 339–340; Strohmeyer 1911: 20.

***tsugae* Tsai & Yin** 1966: 240. Holotype ♂; Ningshen [China]; IZAS, Beijing.
Distribution: Asia (Shanxi, Sichuan, Yunnan in China).

Hosts: *Tsuga chinensis*.
References: (**tx**) Tsai & Yin 1966: 240.

***ulmi* Tsai & Yin** 1966: 240. Holotype ♂; Shansi, Shihchuan [China].
Distribution: Asia (Shanxi, Sichuan in China).
Hosts: *Ulmus pumila*.
References: (**tx**) Tsai & Yin 1966: 240.

***variegatus* Eggers** 1932c: 26. Holotype, sex?; Congostaat (Lusindoi); MRCB, Tervuren.
Figures: Schedl 1961k: 339.
Distribution: Africa (Zaire).
References: (**cn**) Anonymous 1970c: 13. (**ds**) Anonymous 1970c: 13; Schedl 1961k: 340, 1970h: 180, 1975k: 276. (**tx**) Eggers 1932c: 26–27; Schedl 1937b: 398, 1961k: 339–340.

***yunnanensis* Tsai & Yin** 1966: 240. Holotype ♀; Yunnan: Menghai [China]; IZAS, Beijing.
Distribution: Asia (Yunnan in China).
Hosts: *Quercus* sp.
References: (**tx**) Tsai & Yin 1966: 240.

Genus *Pernophorus* Strohmeyer

PERNOPHORUS STROHMEYER 1910d: 92. Type-species: *Acanthophorus brevicollis* Strohmeyer, automatic.

Acanthophorus Strohmeyer 1910c: 69. Type-species: *Acanthophorus brevicollis* Strohmeyer, monobasic, preoccupied by Audinet-Serville 1832: 152.
References: (**tx**) Lucas 1920: 68; Strohmeyer 1910c: 69, 1910d: 92.

Notes: (1) Replacement name for *Acanthophorus* Strohmeyer 1910c: 69.
References: (**ay**) Nobuchi 1968a: 48. (**hb**) Schedl 1960g: 84–89; Wood, S. L. 1986a: 46. (**ds**) Wood, S. L. 1986a: 46. (**tx**) Hopkins 1914: 116, 132, 1915c: 227; Schedl 1941d: 385, 1960g: 84–89; Strohmeyer 1910d: 92; Wood, S. L. 1986a: 46.

***abhorrens* Eggers** 1943e: 71. Holotype, sex?; Zambeze (Environ de Chemba); MNHN, Paris.
Figures: Schedl 1960g: 85.
Distribution: Africa (Mozambique/ Uganda).
Hosts: *Vitex cuneata*.
Notes: (1) There are 4 Eggers cotypes in Schedl Collection in NHMW, Wien.
References: (**hb**) Schedl 1960g: 84–85. (**ds**) Nunberg 1952: 18, 1965b: 18; Schedl 1960g: 84–85, 1975k: 276, 1977c: 394. (**tx**) Eggers 1943e: 71; Nunberg 1952: 18; Schedl 1960g: 84–85.

***armatus* Eggers** 1933e: 21. Holotype ♂; Port. Ost. Africa (Ankuaze); BMNH, London.
Distribution: Africa (Mozambique/ Zambia).
References: (**ds**) Browne 1973a: 280; Lee 1971: 31. (**tx**) Eggers 1933e: 21–22; Schedl 1960g: 86.

***brevicollis* (Strohmeyer)** 1910c: 70 (*Acanthophorus*). Syntypes 1♂, 3♀; Usambara occidentalis (Mgila); Strohmeyer Collection.
Distribution: Africa (Tanzania).
Hosts: *Usambara occidrentalis*.
References: (**hb**) Schedl 1960g: 86. (**ds**) Kleine 1912b: 187, 1914b: 323; Schedl 1960g: 86. (**tx**) Eggers 1933e: 21; Hopkins 1914: 126; Lucas 1920: 68; Schedl 1941d: 385, 1960g: 86; Strohmeyer 1910c: 70–71, 1910d: 93. (**ms**) Lucas 1920: 68.

***obscurus* Eggers** 1940c: 230. Holotype, sex?; Congostaat: Haut Uele (Moku Moto); MRCB, Tervuren.
Distribution: Africa (Zaire).
References: (**tx**) Eggers 1940c: 230; Schedl 1940c: 230, 1960g: 88–89.

***pondoanus* Eggers** 1933e: 22. Holotype ♂; Sudafrica: Pondoland, Port St. Johns; BMNH, London.
Distribution: Africa (South Africa).
References: (**tx**) Eggers 1933e: 22; Schedl 1960g: 89.

Genus *Strombophorus* Hagedorn

STROMBOPHORUS HAGEDORN 1909a: 740. Type-species: *Strombophorus crenatus* Hagedorn, subsequent designation by Hopkins 1914: 130.
References: (**hb**) Schedl 1960f: 10; Wood, S. L. 1986a: 46. (**ds**) Wood, S. L. 1986a: 46. (**tx**) Hagedorn 1909a: 740, 1910a: 29, 33–34, 1910d: 7; Hopkins 1914: 130, 1915c: 227; Lucas 1920: 618; Nobuchi 1969a: 48; Schedl 1957d, 1959q: 705–710, 1960g: 89–114; Wood, S. L. 1986a: 46.

***camerunus* Hagedorn** 1909a: 742. Syntypes, sex?; Kamerun; MNB, Berlin.
Distribution: Africa (Cameroon).
References: (**ds**) Hagedorn 1910d: 7; Kleine 1912b: 161, 1914b: 310. (**tx**) Eggers 1919: 231–232, 1920: 117–118; Hagedorn 1909a: 742, 1910a: 34; Schedl 1957d: 21, 1960g: 90–91.

***capensis* Schedl** 1965h: 113. Holotype, sex?; Cape Prov., Alexandria; Transvaal Museum, Pretoria.
Distribution: Africa (South Africa).
Hosts: *Celtis africanus*.
References: (**ds**) Schedl 1975k: 276. (**tx**) Schedl 1965h: 113.

***celtis* Schedl** 1955i: 214. Syntypes, sex?; Uganda: Kiwafu; BMNH, London, and Schedl Collection in NHMW, Wien.
Distribution: Africa (Uganda).
Hosts: *Celtis durandii, C. kraussiana*.
Notes: (1) Schedl 1979c: 55 (citation of holotype invalid).
References: (**ds**) Gardner 1957a: 32; Schedl 1960g: 91. (**tx**) Schedl 1955i: 211, 214, 1960g: 91, 1979c: 55.

***cordatus* Hagedorn** 1909a: 741. Holotype, sex?; Kamerun; MNB, Berlin.
Distribution: Africa (Cameroon).
References: (**ds**) Hagedorn 1910d: 7; Kleine 1912b: 161. (**tx**) Eggers 1919: 231–232; Hagedorn 1909a: 740–742, 1910a: 34; Schedl 1960g: 91.

***crenatus* Hagedorn** 1909a: 740. Syntypes, sex?; Kamerun; MNB, Berlin, lost except for slide mounts of antenna and mouthparts.
Figures: Nunberg 1961a: 333, 335.
Distribution: Africa (Cameroon/ Guinea/ Zaire).
Hosts: *Millettia duchesnii*.
References: (**ec**) Schedl 1960g: 92. (**ds**) Hagedorn 1910d: 7; Kleine 1912b: 161, 1914b: 310; Schedl 1960g: 92, 1964f: 617, 1965e: 350, 1967e: 209, 1971g: 192, 1972e: 279. (**tx**) Eggers 1919: 232, 1932c: 24; Hagedorn 1909a: 740–742, 1910a: 34; Hopkins 1914: 130, 133; Lucas 1920: 618; Roberts 1969: 128; Schedl 1950d: 6, 1955d: 268, 1960g: 92, 1962k: 1063.
nudus Nunberg 1961a: 332. Holotype ♂; Congo: Stanleyville, Yangambi; MRCB, Tervuren.
Synonymy: Schedl 1962j: 96.
References: (**tx**) Nunberg 1961a: 332–333, 335; Schedl 1962j: 96, 1962k: 1063.

***dialiumi* Schedl** 1957d: 20. Holotype ♀; Congo Belge: Yangambi; MRCB, Tervuren.
Distribution: Africa (Nigeria/ Zaire).
Hosts: *Dialium corbisieri*.
References: (**hb**) Schedl 1960g: 94. (**ds**) Schedl 1962k: 1064, 1964j: 39. (**tx**) Schedl 1957d: 19–20, 1960g: 94.

***elongatus* Eggers** 1919: 231. Holotype, sex?; Daressalaam (Ostafrika); Hamburg Museum, lost.
Distribution: Africa (Tanzania).
References: (**tx**) Eggers 1919: 231–232; Schedl 1960g: 95.

***ericius* (Schaufuss)** 1897a: 217 (*Diamerus*). Holotype, sex?; Natal; Hamburg Museum, lost.
Distribution: Africa (Natal in South Africa/ Uganda/ Zaire).
Hosts: *Celtis zenkeri, Gossweilerodendron balsamiferum, Oxystigma oryphyllum*.
References: (**ec**) Schedl 1958d: 185, 193, 1960g: 95. (**hb**) Browne 1963a: 230; Schedl 1960g: 95. (**ds**) Beaver & Loeyttyniemi 1989; Browne 1963a: 230; Hagedorn 1910d: 6; Kleine 1912b: 160, 1914b: 319; Schedl 1959q: 705, 1960g: 95, 1964f: 617, 1964j: 39, 1965e: 350, 1965g: 19, 1971g: 192. (**tx**) Beaver & Loeyttyniemi 1989; Eggers 1922b: 165; Hagedorn 1910a: 32; Roberts 1969: 129; Schaufuss 1897a: 217–218; Schedl 1950d: 6, 1960b: 162; 1960g: 95.
variegatus Eggers 1940c: 231. Holotype, sex?; Congostaat: Elisabethville; MRCB, Tervuren.
Synonymy: Schedl 1950d: 6.
References: (**tx**) Eggers 1940c: 231; Schedl 1950d: 6.

***flavipubens* Schedl** 1959q: 706. Holotype ♀; Tanganyika: Gologolo; BMNH, London.
Distribution: Africa (Tanzania).
Hosts: *Catha edulis*.
References: (**ds**) Schedl 1959q: 705–706. (**tx**) Schedl 1959q: 706, 1960g: 99.

***granulifer* Eggers** 1932c: 23. Holotype, sex?; Congostaat (Mayumbe: Pulu Banzi); USNM, Washington.
Distribution: Africa (Zaire).
References: (**tx**) Anderson, W. H. & Anderson 1971: 14; Eggers 1932c: 23, 25; Schedl 1936b: 136, 1960g: 99.

***hispidus* Eggers** 1932c: 26. Holotype, sex?; Congostaat (Lulonga-Befale); MRCB, Tervuren.
Distribution: Africa (Zaire).
References: (**tx**) Eggers 1932c: 26; Schedl 1936b: 136, 1960g: 99.

***intermedius* Eggers** 1920: 117. Holotype, sex?; Kamerun; USNM, Washington.
Distribution: Africa (Cameroon/ Fernando Po Island).
References: (**ds**) Schedl 1960g: 100. (**tx**) Anderson, W. H. & Anderson 1971: 16; Eggers 1920: 117–118; Roberts 1969: 129; Schedl 1941d: 385, 1957d: 21, 1960g: 100.

***interstitialis* Browne** 1963b: 241. Holotype ♀; Nigeria: Calabar; BMNH, London.
Distribution: Africa (Nigeria).
Hosts: *Lonchocarpus* sp.
References: (**tx**) Browne 1963b: 241; Roberts 1969: 129.

***kaszabi* Schedl** 1967e: 223. Holotype ♀; Kindamba, Meya, Bangou Forest, Congo; NHMB, Budapest.
Distribution: Africa (Zaire).
References: (**tx**) Schedl 1967e: 223–224.

***laevis* Eggers** 1919: 232. Holotype, sex?; Kamerun; USNM, Washington.
Distribution: Africa (Cameroon).
References: (**tx**) Anderson, W. H. & Anderson 1971: 17; Eggers 1919: 232, 1920: 117–118; Schedl 1957d: 21, 1960g: 100.

***latus* Eggers** 1919: 233. Holotype, sex?; Nkolentangan (Span. Guinea); MNB, Berlin.
Distribution: Africa (Equatorial Guinea).
References: (**tx**) Eggers 1919: 233; Schedl 1960g: 100.

***lukengeae* Schedl** 1957d: 20. Holotype, sex?; Congo Belge: Bas-Congo, Jombo de Bombo, N. Ouest de Tshela; MRCB, Tervuren.
Distribution: Africa (Zaire).
Hosts: *Dialium corbisiera, D. pachyphyllum, D.* sp.
References: (**ec**) Schedl 1958d: 188, 1960g: 101–103. (**hb**) Schedl 1960g: 101–103. (**ds**) Mayne & Donis 1962: 313; Schedl 1960g: 101–103, 1964j: 40. (**tx**) Roberts 1969: 129; Schedl 1957d: 20, 1960g: 101–103.

***major* Schedl** 1941d: 385. Holotype ♀; Usambara: Derema (Tanganyika); Schedl Collection in NHMW, Wien.
Distribution: Africa (Tanzania).
References: (**tx**) Schedl 1941d: 385, 1957d: 21, 1960g: 104.

***millettiae* Schedl** 1957d: 21. Holotype ♀; Congo Belge: Yangambi; MRCB, Tervuren.
Distribution: Africa (Angola/ Zaire).
Hosts: *Millettia duchesnii*.
References: (**bv**) Schedl 1960f: 39. (**ec**) Schedl 1958d: 193–194, 1960g: 104. (**hb**) Schedl 1960g: 104. (**ds**) Mayne & Donis 1962: 313; Schedl 1959p: 16, 1960f: 39, 1960g: 104. (**tx**) Schedl 1957d: 21, 1960g: 104.

***minor* Eggers** 1919: 233. Holotype, sex?; Kamerun; USNM, Washington.
Distribution: Africa (Cameroon).
References: (**tx**) Anderson, W. H. & Anderson 1971: 20; Eggers 1919: 233, 1944b: 92; Schedl 1960g: 106.

***minutissimus* Schedl** 1936b: 136. Holotype ♀; Stanleyville, Congo; Schedl Collection in NHMW, Wien.
Distribution: Africa (Zaire).
References: (**tx**) Schedl 1936b: 136, 1960g: 106.

***movoliae* Schedl** 1957d: 22. Holotype ♀; Congo Belge: Kivu, Mulungu; MRCB, Tervuren.
Figures: Schedl 1957d: 23 (female).
Distribution: Africa (Zaire).
Hosts: Liana known as Movolia.
References: (**hb**) Schedl 1960g: 106. (**ds**) Mayne & Donis 1962: 313. (**tx**) Nunberg 1961: 336; Schedl 1957d: 22–23, 1960g: 106.

***nigrescens* Schedl** 1941d: 387. Holotype ♂; Nairobi, Kenya; Schedl Collection in NHMW, Wien.
Distribution: Africa (Kenya).
References: (**tx**) Schedl 1941d: 387, 1960g: 108.

***occidentalis* Schedl** 1941d: 385. Holotype ♂; Spanish Guinea; Schedl Collection in NHMW, Wien.
Distribution: Africa (Equatorial Guinea).
References: (**tx**) Schedl 1941d: 385, 1957d: 21, 1960g: 108.

***pilifer* (Eggers)** 1927a: 172 (*Hylesinus*). Holotype, sex?; Belg.-Congo (Haut Uele: Watsa); MRCB, Tervuren.
Distribution: Africa (Zaire).
References: (**tx**) Eggers 1927a: 172–173; Schedl 1960g: 109.

***pusillus* Eggers** 1932c: 24. Holotype, sex?; Congostaat (Mayumbe: Pulu Banzi); USNM, Washington.
Distribution: Africa (Zaire).
References: (**tx**) Anderson, W. H. & Anderson 1971: 27; Eggers 1932c: 24–25, Schedl 1936b: 136, 1957d: 10, 1960g: 109.

spinosus Eggers 1932c: 25. Holotype, sex?; Congostaat (Mayumbe: Pulu Banzi); USNM, Washington. Synonymy: Schedl 1957d: 10.
References: (**tx**) Anderson, W. H. & Anderson 1971: 31; Eggers 1932c: 25; Schedl 1941d: 386, 1957d: 10, 1960g: 110.

***setulosus* Schedl** 1941d: 386. Holotype ♂; Kuango, Congo; Schedl Collection in NHMW, Wien.
Distribution: Africa (Zaire).
References: (**tx**) Schedl 1941d: 385–386, 1960g: 109.

***spathulatus* Schedl** 1941d: 386. Holotype ♀; Kamerun; Schedl Collection in NHMW, Wien.
Distribution: Africa (Cameroon).
References: (**tx**) Schedl 1941d: 385–386, 1960g: 110.

***testudo* Eggers** 1944b: 92. Holotype, sex?; Belgisch-Congo (Equateur: Flandria); MRCB, Tervuren.
Distribution: Africa (Zaire).
References: (**tx**) Eggers 1944b: 92; Schedl 1960g: 110.

***vagans* Schedl** 1957d: 23. Holotype, sex?; Congo Belge: Yangambi; MRCB, Tervuren.
Distribution: Africa (Zaire).
Hosts: *Cillaeus contractus, Croton haumanianus, Millettia duchesnei, Pterygota bequaerti*.
References: (**bv**) Schedl 1960f: 39. (**hb**) Schedl 1960g: 110. (**ds**) Schedl 1960f: 39, 1960g: 110. (**tx**) Schedl 1957d: 23, 1960g: 110.

***vittatus* Eggers** 1935c: 297. Holotype ♀; Congostaat (Haut-Uele: Yebo Moto); MRCB, Tervuren.
Figures: Nunberg 1961a: 335, 337, Schedl 1960g: 89.
Distribution: Africa (Burkina Faso/ Zaire).
References: (**hb**) Schedl 1960g: 112. (**ds**) Mayne & Donis 1962: 313; Schedl 1960g: 112, 1971g: 192, 1972e: 279. (**tx**) Eggers 1935c: 297, 1940c: 231; Schedl 1960g: 89, 112, 1962k: 1064.

pseudomovoliae Nunberg 1961a: 336. Holotype ♂; Bas-Congo: Kimwenza; MRCB, Tervuren. Synonymy: Schedl 1962r: 96.
References: (**tx**) Nunberg 1961a: 335–337; Schedl 1962k: 1064, 1962r: 96.

Tribe Bothrosternini Blandford

Bothrosterni
References: Blandford 1896e: 120.

Bothrosterninae
References: Hopkins 1915c: 225.

Bothrosternini
References: Leng 1920: 337; Wood, S. L. 1978a: 111, 1982b: 208–255, 1986: 46.

Genus *Cnesinus* LeConte

CNESINUS LECONTE 1868: 171. Type-species: *Cnesinus strigicollis* LeConte, monobasic.
Nemophilus Chapuis 1869: 27. Type-species: *Nemophilus strigillatus* Chapuis = *Cnesinus strigicollis* LeConte, subsequent designation by Hopkins 1914: 125. Synonymy: LeConte 1876: 378.
References: (**tx**) Chapuis 1869: 27, 1873: 235; Hopkins 1914: 125; LeConte 1876: 378; Swaine 1909: 89.
Keys: Wood 1968a: 88, 1982b: 209 for North and Central America.
References: (**hb**) Wood, S. L. 1986a: 46. (**ds**) Wood, S. L. 1982b: 208, 1986a: 46. (**tx**) Arnett 1960: 1040, 1968: 1040; Beal & Massey 1945: 57, 71; Blackman 1943c: 371; Blandford 1896e: 132, 135; Blatchley & Leng 1916: 586; Chamberlin 1939: 240–241; Eggers 1940a: 123–141; Hagedorn 1910a: 130, 1910d: 80; LeConte 1868: 171, 1876: 378; LeConte & Horn 1883: 523; Leng 1920: 337; Lucas 1920: 193; Swaine 1909: 89, 1918a: 39; Wood, S. L. 1961a: 42, 1967b: 79, 1968a: 88–110, 1982b: 208–245, 1986a: 46.

***acuminatus* Schedl** 1978c: 298. Holotype ♂; Brasilien, Nova Teutonia, 300–350 m; Schedl Collection at NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1978c: 298.

***adusticus* Wood** 1967b: 87. Holotype ♀; Los Almendros, Paraiso, Honduras; Wood Collection.
Distribution: North America (Costa Rica/ Honduras), South America (Colombia).
Hosts: *Acacia pennatula*, *Coffea arabica*.
References: (**ds**) Wood, S. L. 1982b: 244. (**tx**) Wood, S. L. 1967b: 87, 1982b: 244.

***adustus* Schedl** 1948f: 266. Syntypes ♀; Costa Rica: Turrialba; Eggers specimens, in NHMW, Wien.
Figures: Wood 1968a: 97.
Distribution: North America (Costa Rica/ Honduras).
Hosts: *Valeriana scandens*.
Notes: (1) Schedl 1979c: 12 (citation of holotype invalid).
References: (**hb**) Wood, S. L. 1982b: 239. (**ds**) Wood, S. L. 1982b: 239. (**tx**) Schedl 1948f: 266, 1979c: 12; Wood, S. L. 1967b: 87, 1974d: 279, 1982b: 239.
atrodeclivis Wood 1968a: 108. Holotype ♀; Zamorano, Morazan, Honduras; Wood Collection. Synonymy: Wood 1974d: 279.
References: (**tx**) Wood, S. L. 1968a: 97, 108, 1974d: 279.

***advena* Schedl** 1973d: 169. Holotype ♀; Brasilien, Mato Grosso, Utiariti, 325 m, Rio Papagaio; MZUSP, Sao Paulo.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1979c: 12; Wood, S. L. 1973d: 169.

***alienus* Wood** 1974a: 3. Holotype ♂; 40 km SE Socopo, Barinas, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: Bejuco blanco (liana).
References: (**tx**) Wood, S. L. 1974a: 3.

***ampliatus* Schedl** 1938i: 21. Syntypes, sex?; Argentinien, Buenos Aires, Isla Martin Garcia; Viana Collection, and Schedl Collection in NHMW, Wien.
Distribution: South America (Argentina).
Notes: (1) Schedl 1979c: 19 (citation of holotype invalid).
References: (**hb**) Viana 1964: 128. (**ds**) Blackwelder 1947; Viana 1964: 128. (**tx**) Schedl 1938i: 21–22, 1979c: 19.

***amplipennis* Schedl** 1963d: 219. Holotype, sex?; Brasilien: Santa Catarina, Nova Teutonia; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1963d: 219, 1979c: 19.

***annectens* Wood** 1967b: 86. Holotype ♀; Zamorano, Morazan, Honduras; Wood Collection.
Distribution: North America (Honduras).
Hosts: *Verbisina agricultorum*.
References: (**hb**) Wood, S. L. 1967b: 87, 1982b: 233. (**ds**) Wood, S. L. 1982b: 233. (**tx**) McNamara 1977: 194; Wood, S. L. 1967b: 86, 1982b: 233.

***atavus* Wood** 1968a: 106. Holotype ♂; Rinconada, Veracruz, Mexico; Wood Collection.
Distribution: North America (Veracruz in Mexico).
Hosts: Herbaceous plant.
References: (**hb**) Wood, S. L. 1982b: 233. (**ds**) Wood, S. L. 1982b: 233. (**tx**) Wood, S. L. 1968a: 106, 1982b: 233.

***ater* Schedl** 1952d: 352. Holotype ♀; Brasilien, Santa Catarina; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**ds**) Blackwelder 1947; Schedl 1966f: 82, 1973d: 153, 1976a: 50, 1978c: 291. (**tx**) Schedl 1952d: 352, 1979c: 29.

***atrocis* Wood** 1982a: 226. Holotype ♀; Cerro Punta (labeled Volcan Chiriqui), Panama; Wood Collection.
Distribution: North America (Panama).
References: (**tx**) Wood, S. L. 1982a: 226.

***beaveri* Wood** 1974a: 2. Holotype ♀; about 260 km N Xavantina, Mato Grosso, Brazil; BMNH, London.
Distribution: South America (Brazil).
References: (hb) Beaver 1973a. (**ds**) Beaver 1973a. (**tx**) Wood, S. L. 1974a: 2.

***bicinctus* Schedl** 1954b: 29. Syntypes, sex?; Brasilien: Nova Teutonia; Schedl Collection in NHMW, Wien, and Plaumann Collection.
Distribution: South America (Brazil).
Hosts: Lauraceae.
Notes: (1) Schedl 1979c: 37 (citation of holotype invalid).
References: (**ds**) Schedl 1966f: 82. (**tx**) de Ruette 1970: 90; Schedl 1954b: 29, 1979c: 37.

***bicolor* Eggers** 1943a: 376. Holotype ♀; Bolivia (Cochabamba); USNM, Washington.
Distribution: South America (Bolivia).
References: (**tx**) Anderson, W. H. & Anderson 1971: 6; Eggers 1943a: 376; Schedl 1979c: 38.

***bicornus* Wood** 1967b: 80. Holotype ♀; Morelia, Michoacan, Mexico; Wood Collection.
Distribution: North America (Michoacan, Morelos in Mexico).
References: (**ds**) Atkinson et al. 1986: 48. (**tx**) Wood, S. L. 1967b: 80–81, 1968a: 93.

***bicostatus* Schedl** 1936i: 106. Holotype ♂; Costa Rica, Turrialba, 800 m; Schedl Collection in NHMW, Wien.
Figures: Wood 1968a: 90.
Distribution: North America (Costa Rica), South America (Venezuela).
Hosts: *Nectandra* sp.
References: (**ds**) Blackwelder 1947; Wood, S. L. 1982b: 215. (**tx**) Schedl 1936i: 106–107, 1979c: 39; Wood, S. L. 1968a: 90, 1972e: 193, 1982b: 215.

***bispinatus* Schedl** 1976a: 62. Holotype ♀?; Brasilien; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1976a: 62.

***bisulcatus* Schedl** 1948f: 266. Holotype ♀; Colombia; Schedl Collection in NHMW, Wien.
Distribution: South America (Colombia).
References: (**tx**) Schedl 1948f: 266, 1951m: 77, 1979c: 41.

***bituberculatus* Schedl** 1966f: 102. Holotype ♂; Brasilien, Nova Teutonia; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**ds**) Schedl 1966f: 82. (**tx**) Schedl 1966f: 102, 1979c: 41.

***blackmani* Schedl** 1948f: 268. Holotype ♂; Tampico, Mexico; USNM, Washington, automatic, replacement name for *nitidus* Blackman.
Figures: Blackman 1943c:pl. 15, figs. 12–13, Wood 1968a: 90.
Distribution: North America (Guatemala/ Veracruz in Mexico/ Panama), South America (Colombia).
References: (**ds**) Wood, S. L. 1982b: 219. (**tx**) Schedl 1948f: 268, 1960i: 104; Wood, S. L. 1968a: 90, 1982b: 219.

nitidus Blackman 1943c: 377. Holotype ♂; Tampico, Mexico; USNM, Washington, preoccupied by Eggers 1943a: 376.
References: (**ds**) Blackwelder 1947. (**tx**) Anderson, W. H. & Anderson 1971: 22; Blackman 1943c: 377; Nunberg 1956d: 207; Schedl 1940a: 331, 1948f: 268, 1960i: 104, 1979c: 169.

mexicanus Nunberg 1956d: 207. Holotype ♂; Tampico, Mexico; USNM, Washington, unnecessary replacement name for *nitidus* Blackman.
References: (**tx**) Nunberg 1956d: 207; Schedl 1960i: 104.

***brighti* Wood** 1974: 6. Holotype ♀; 14 km SE Teopisca on Highway 24, Chiapas, Mexico; CNCI, Ottawa.
Distribution: North America (Chiapas in Mexico).
References: (**ds**) Wood, S. L. 1982b: 226. (**tx**) McNamara 1984: 753; Wood, S. L. 1974: 6, 1982b: 226.

***carbonarius* Schedl** 1952d: 354. Holotype ♂; Brasilien; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**ds**) Schedl 1966f: 83, 1976a: 50. (**tx**) Schedl 1952d: 354, 1979c: 53.

***carinatus* Wood** 1967b: 88. Holotype ♀; Ciudad Hidalgo, Michoacan, Mexico; Wood Collection.
Distribution: North America (Michoacan, Morelos in Mexico).
Hosts: *Persea americana*, (?) *Crataegus* sp.
References: (**hb**) Atkinson et al. 1986: 19; Burgos & Saucedo 1983: 59; Wood, S. L. 1982b: 242. (**ds**) Atkinson & Equihua 1985b: 230; Atkinson et al. 1986: 19; Burgos & Saucedo 1983: 59; Wood, S. L. 1982b: 242. (**tx**) Muskus, A. 1984: 53; Wood, S. L. 1967b: 88–89, 1982b: 242.

***coffeae* Schedl** 1939n: 12. Holotype ♀; Colombia: La Esperanza; BMNH, London.
Figures: Schedl 1939n: 13.
Distribution: South America (Colombia).
Hosts: *Coffea arabica*.
References: (**ds**) Blackwelder 1947. (**tx**) Schedl 1939n: 12, 1979c: 59.

***colombianus* Wood** 1967b: 84. Holotype ♂; El Bosque, Caicedonia, Valles, Colombia; Wood Collection.
Distribution: South America (Colombia).
References: (**tx**) Wood, S. L. 1967b: 84.

***coracinus* Wood** 1974a: 6. Holotype ♀; 8 km S Simojovel, Chiapas, Mexico; CNCI, Ottawa.
Distribution: North America (Chiapas in Mexico).
References: (**ds**) Wood, S. L. 1982b: 228. (**tx**) McNamara 1984: 753; Wood, S. L. 1974a: 6, 1982b: 228.

***cornutus* Wood** 1983a: 655. Holotype ♀; San Tlatotico, Morelos, Mexico; Wood Collection.
Distribution: North America (Morelos in Mexico).
Hosts: Compositae.
References: (**hb**) Atkinson et al. 1986: 19. (**ds**) Atkinson et al. 1986: 19. (**tx**) Wood, S. L. 1983a: 655.

***costulatus* Blandford** 1896e: 137. Lectotype ♀; Panama: Volcan de Chiriqui, Chiriqui; BMNH, London, designated by Wood 1982b: 234.
Figures: Blackman 1943c:pl. 15, figs. 6–7, Wood 1968a: 97.
Distribution: North America (Costa Rica/ Oaxaca, Veracruz in Mexico/ Panama). South America (Colombia/ Venezuela).
Hosts: *Persea americana*.
References: (**hb**) Wood, S. L. 1982b: 234. (**ds**) Atkinson & Equihua 1985b: 230; Blackwelder 1947; Hagedorn 1910d: 80; Kleine 1913b: 148, 1914b: 339, 365; Wood, S. L. 1982b: 234. (**tx**) Blandford 1896e: 137; Hagedorn 1910a: 131; Schedl 1936i: 106–107, 1979c: 67; Wood, S. L. 1968a: 97, 1972b: 144, 1982b: 234.
similis Blackman 1943c: 375. Holotype ♀; Panama; USNM, Washington. Synonymy: Wood 1972c: 144.
References: (**ds**) Blackwelder 1947. (**tx**) Blackman 1943c: 375; Wood, S. L. 1972c: 144.

***cubensis* Blackman** 1943c: 371. Holotype, sex?; Cayamas, Cuba; USNM, Washington.
Figures: Blackman 1943c:pl. 15, figs. 1–2.
Distribution: Antilles Islands (Cuba).
References: (**ds**) Blackwelder 1947; Bright 1985c: 171. (**tx**) Blackman 1943c: 371–372; Bright 1985c: 171.

***degener* Wood** 1968a: 105. Holotype ♀; 11 km N Matias Romero, Oaxaca, Mexico; Wood Collection.
Figures: Wood 1968a: 90.
Distribution: North America (Oaxaca, Veracruz in Mexico).
Hosts: *Sechium edule*, *Serjania* sp.
References: (**hb**) Wood, S. L. 1982b: 225. (**ds**) Atkinson & Equihua 1988: 86; Wood, S. L. 1982b: 225. (**tx**) Wood, S. L. 1968a: 90, 105, 1982b: 225.

***denotatus* Wood** 1968a: 107. Holotype ♀; Barro Colorado Island, Canal Zone, Panama; Wood Collection.
Distribution: North America (Costa Rica/ Panama).
Hosts: *Oreopanax capitatus*.
References: (**hb**) Wood, S. L. 1982b: 238. (**ds**) Wood, S. L. 1982b: 238. (**tx**) Wood, S. L. 1968a: 107, 1982b: 238.

***deperditus* Wood** 1974a: 4. Holotype ♀; Piedras Blancas, 10 km E Medellin, Antioquia, Colombia; Wood Collection.
Distribution: South America (Colombia).
Hosts: *Quercus humboldti*.
References: (**tx**) Wood, S. L. 1974a: 4.

***discretus* Wood** 1985: 271. Holotype ♂; Rancho Grande, Aragua, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
References: (**tx**) Wood, S. L. 1985: 271.

***dividuus* Schedl** 1938i: 22. Lectotype ♀; Argentinien, Buenos Aires, Tigre; Schedl Collection in NHMW, Wien, designated by Wood 1985: 267.
Figures: Schedl 1951m: 79.
Distribution: South America (Argentina/ Brazil).
Hosts: *Acacia nigra*.
Notes: (1) Schedl 1979c: 83 (citation of holotype invalid).
References: (**hb**) Viana 1964: 128. (**ds**) Blackwelder 1947; Schedl 1973d: 153; Viana 1964: 128. (**tx**) Schedl 1938i: 22, 1958f: 34, 1979c: 83.
dryographus Schedl 1951m: 78. Lectotype ♀; Brasilien, Nova Teutonia; Schedl Collection in NHMW, Wien, designated by Wood 1985: 267.
Synonymy: Wood 1985: 267.
Notes: (1) Schedl 1979c: 84 (citation of holotype invalid).
References: (**hb**) Viana 1964: 128. (**ds**) Pedrosa-Macedo & Schonherr 1985: 12; Schedl 1966f: 83, 1970e: 80, 1973d: 153, 1976a: 50; Viana 1964: 128. (**tx**) Pedrosa-Macedo & Schonherr 1985: 12; Schedl 1951m: 78, 1979c: 84; Wood, S. L. 1985: 267.
laevicollis Schedl 1951m: 79. Lectotype ♀; Brasilien, Santa Catarina, Nova Teutonia; Schedl Collection in NHMW, Wien, designated by Wood 1985: 267. Synonymy: Wood 1985: 267.
Notes: (1) Schedl 1979c: 135 (citation of holotype invalid).
References: (**ds**) Schedl 1971f: 146; 1973a: 366, 1973d: 162, 1976a: 50, 1979e: 57. (**tx**) Schedl 1951m: 79, 1979c: 135; Wood, S. L. 1985: 267.

***electinus* Wood** 1967b: 82. Holotype ♂; Mazamitla, Jalisco, Mexico; Wood Collection.
Figures: Wood 1968a: 90.
Distribution: North America (Jalisco, Morelos, Veracruz in Mexico).
Hosts: *Persea americana*.
References: (**hb**) Atkinson et al. 1986: 20; Wood, S. L. 1982b: 223. (**ds**) Atkinson & Equihua 1985b: 229; Atkinson et al. 1986: 20; Wood, S. L. 1982b: 223. (**tx**) Wood, S. L. 1967b: 82–83, 1968a: 90, 1982b: 223.

***electus* Wood** 1975a: 23. Holotype ♂; Cartago, Cartago, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
References: (**hb**) Wood, S. L. 1982b: 217. (**ds**) Wood, S. L. 1982b: 217. (**tx**) Wood, S. L. 1967b: 81, 1975a: 23, 1982b: 217.

***elegans* Blandford** 1896e: 140. Lectotype ♀; Guatemala: Cerro Zunil; BMNH, London, designated by Wood 1982c: 226.
Figures: Blandford 1896e:pl. 6, figs. 17–18, Wood 1968a: 90.

Distribution: North America (Guatemala/ Honduras/ Chiapas, Hidalgo, Oaxaca, Puebla, Veracruz in Mexico/ Panama), South America (Venezuela).
Hosts: *Arbutus* sp., *Inga* sp., *Rosa* sp., *Rubus* sp., *Serjania* sp., *Struthanthus* sp., *Vitis* sp.
References: (**hb**) Wood, S. L. 1982b: 226. (**ds**) Atkinson & Equihua 1988: 86; Blackwelder 1947; Ferrer 1942; Hagedorn 1910d: 80; Kleine 1913b: 148, 1914b: 339, 352, 365; Wood, S. L. 1982b: 226. (**tx**) Blandford 1896e: 140; Hagedorn 1910a: 131; Schedl 1936i: 106, 1940a: 331, 1951m: 78, 1952d: 352, 1979c: 88; Wood, S. L. 1967b: 79, 1968a: 90, 1982b: 226.

***elegantis* Wood** 1967b: 79. Holotype ♀; Volcan Zunil, Quezaltenango, Guatemala; Wood Collection.
Figures: Bright 1972b: 1490.
Distribution: North America (Guatemala/ Chiapas, Oaxaca in Mexico).
Hosts: *Arbutus* sp., *Quercus* sp.
References: (**hb**) Wood, S. L. 1982b: 227. (**ds**) Wood, S. L. 1982b: 227. (**tx**) McNamara 1977: 194; Wood, S. L. 1967b: 79–80, 1973c: 174, 1982b: 227.
zapotecus Bright 1972b: 1493. Holotype ♀; 5 km N Suchixtepec, Oaxaca, Mexico; CNCI, Ottawa. Synonymy: Wood 1973c: 174.
References: (**tx**) Bright 1972b: 1490, 1493; McNamara 1977: 194; Wood, S. L. 1973c: 174.

***equihuai* Wood** 1982a: 226. Holotype ♀; between Cuetzalan and Pasa del Jardin, Puebla, Mexico; Wood Collection.
Distribution: North America (Puebla, Veracruz in Mexico).
Hosts: *Croton* sp.
References: (**tx**) Wood, S. L. 1982a: 226.

***foratus* Wood** 1967b: 81. Holotype ♂; El Bosque, Caicedonia, Valles, Colombia; Wood Collection.
Distribution: South America (Colombia).
References: (**tx**) Wood, S. L. 1967b: 81–82.

***frontalis* Wood** 1968a: 104. Holotype ♀; Puerto Viejo, Heredia, Costa Rica; Wood Collection.
Figures: Wood 1968a: 97.
Distribution: North America (Costa Rica).
Hosts: Liana.
References: (**hb**) Wood, S. L. 1982b: 236. (**ds**) Wood, S. L. 1982b: 236. (**tx**) Wood, S. L. 1968a: 97, 104, 1982b: 236.

***fulgens* Wood** 1974a: 4. Holotype ♂; La Carbonera Experimental Forest, 50 km NW Merida, Merida, Venezuela, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Rubus* sp.
References: (**hb**) Burgos & Saucedo 1983: 59. (**ds**) Burgos & Saucedo 1973: 59; Wood, S. L. 1982b: 228. (**tx**) Schedl 1979c: 103; Wood, S. L. 1974a: 4, 1982b: 228.

***fulgidus* Wood** 1974a: 5. Holotype ♂; Piedras Blancas, 10 km E Medellin, Antioquia, Colombia; Wood Collection.
Distribution: South America (Colombia).
Hosts: *Quercus humboldtii*.
References: (**tx**) Wood, S. L. 1974a: 5.

***garrulus* Schedl** 1940a: 332. Holotype ♀; Yautepec [presumably Morelos in Mexico], incorrectly published as Yucatan; Schedl Collection in NHMW, Wien.
Distribution: North America (Morelos in Mexico).
References: (**ds**) Atkinson & Equihua 1985b: 230, 1986: 48; Blackwelder 1947; Ferrer 1942. (**tx**) Schedl 1940a: 332–333.

***gibbosus* Wood** 1968a: 101. Holotype ♀; Volcan Poas, Heredia, Costa Rica; Wood Collection.
Figures: Wood 1968a: 93.
Distribution: North America (Costa Rica).
Hosts: Liana.
References: (**hb**) Wood, S. L. 1982b: 229. (**ds**) Wood, S. L. 1982b: 229. (**tx**) Wood, S. L. 1968a: 93, 101, 1982b: 229.

***gibbulus* Wood** 1968a: 100. Holotype ♀; Villa Mills, Cartago, Costa Rica, 3000 m; Wood Collection.
Figures: Wood 1968a: 93.
Distribution: North America (Costa Rica).
Hosts: *Quercus* sp.
References: (**ds**) Wood, S. L. 1982b: 229. (**tx**) Wood, S. L. 1968a: 93, 100, 1982b: 229.

***gibbus* (Chapuis)** 1869: 28 (*Nemophilus*). Holotype, sex?; Cumana (Venezuela); IRSNB, Brussels.
Distribution: South America (Venezuela).
References: (**ds**) Blackwelder 1947; Hagedorn 1910d: 80; Kleine 1913b: 148; 1914b: 339. (**tx**) Chapuis 1869: 28, 1873: 236; Gemminger & Harold 1872: 2672; Hagedorn 1910a: 131.

***gracilis* Blandford** 1896e: 141. Holotype ♀; Panama: Volcan Chirqui, Chirqui; BMNH, London.
Figures: Wood 1968a: 90.
Distribution: North America (Belize/ Costa Rica/ Honduras/ Oaxaca, Veracruz in Mexico/ Panama), South America (Colombia).
Hosts: *Coffea arabica*, *Persea americana*, *Serjania* sp.
References: (**ec**) Wichmann 1955a: 107. (**hb**) Beaver 1973a; Wood, S. L. 1982b: 216. (**ds**) Atkinson & Equihua 1988: 86; Beaver 1973a; Blackwelder 1947; Bright 1985c: 171; Hagedorn 1910d: 80; Kleine 1914b: 365; Wichmann 1955a: 107; Wood, S. L. 1982b: 216. (**tx**) Blandford 1896e: 141; Bright 1985c: 171; Eggers 1940a: 137; Hagedorn 1910a: 131; Schedl 1951m: 79, 1979c: 107; Wood, S. L. 1967b: 85, 1968a: 90, 1972c: 144, 1982b: 216.
substrigatus Blackman 1943c: 376. Holotype ♀; Santander, Colombia; USNM, Washington. Synonymy: Wood 1972c: 144.

References: (**ds**) Blackwelder 1947. (**tx**) Blackman 1943c: 376–377; Wood 1972c: 144.

***grandis* Schedl** 1935f: 273. Holotype ♀; Brazil; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**ds**) Blackwelder 1947. (**tx**) Schedl 1935f: 273, 1979c: 108.

***guadeloupensis* Eggers** 1940a: 137. Holotype, sex?; Guadeloupe (Trois-Rivieres, 250 m); Fleutiaux Collection (MNHN, Paris?).
Distribution: Antilles Islands (Guadeloupe).
References: (**ds**) Bright 1985c: 171. (**tx**) Bright 1985c: 171; Eggers 1940a: 137; Wood, S. L. 1967b: 86.

***hispidus* Eggers** 1943a: 378. Holotype, sex?; Bolivia (Cochabamba); USNM, Washington.
Distribution: South America (Bolivia).
References: (**ds**) Schedl 1976a: 50. (**tx**) Anderson, W. H. & Anderson 1971: 14; Eggers 1943a: 378; Schedl 1979c: 118.

***insularis* Eggers** 1940a: 138. Lectotype, sex?; Guadeloupe (Courbeyre, Environ de Trois-Rivieres); USNM, Washington, designated by Anderson & Anderson 1971: 15.
Distribution: Antilles Islands (Guadeloupe).
References: (**ds**) Bright 1985c: 171; Schedl 1966f: 83. (**tx**) Anderson, W. H. & Anderson 1971: 15; Bright 1985c: 171; Eggers 1940a: 138; Schedl 1979c: 125.

***intermedius* Schedl** 1936i: 105. Holotype ♂; Costa Rica: Turrialba, 800 m; Schedl Collection in NHMW, Wien.
Figures: Wood 1968a: 90.
Distribution: North America (Costa Rica, Panama).
Hosts: *Nectandra* sp.
References: (**hb**) Wood, S. L. 1982b: 218. (**ds**) Blackwelder 1947; Wood, S. L. 1982b: 218. (**tx**) Schedl 1936i: 105, 1979c: 126; Wood, S. L. 1968a: 90, 1982b: 218.

***laetus* Schedl** 1978c: 299. Holotype ♀; Brasil, Corcovado, Guanabara; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1978c: 299.

***lecontei* Blandford** 1896e: 138. Lectotype ♂; Guatemala: Quiche Mts., El Quiche; BMNH, London, designated by Wood 1982b: 231.
Figures: Wood 1968a: 93.
Distribution: North America (Costa Rica/ Guatemala/ Panama).
Hosts: *Croton gossypiifolia, C.* sp.
References: (**hb**) Wood, S. L. 1982b: 231. (**ds**) Blackwelder 1947; Hagedorn 1910d: 80; Kleine 1913b: 148, 1914b: 365; Wood, S. L. 1982b: 231. (**tx**) Blandford 1896e: 138; Hagedorn 1910a: 131; Schedl 1979c: 138; Wood, S. L. 1968a: 93, 1982b: 231.

***longicollis* Eggers** 1940a: 137. Holotype, sex?; Guadeloupe; USNM, Washington.
Distribution: Antilles Islands (Guadeloupe).
References: (**ds**) Bright 1985c: 171. (**tx**) Anderson, W. H. & Anderson 1971: 18; Bright 1985c: 171; Eggers 1940a: 137; Schedl 1952d: 353.

***lucaris* Wood** 1974a: 5. Holotype ♂; Merida, Merida, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Rubus* sp., *Vismia* sp.
References: (**tx**) Wood, S. L. 1974a: 5.

***marginicollis* Eggers** 1931a: 15. Holotype, sex?; Tropisches Amerika (Antillen oder Columbien); MNB, Berlin.
Distribution: South America (Antilles Islands or Colombia).
References: (**ds**) Blackwelder 1947; Bright 1985c: 171. (**tx**) Bright 1985c: 171; Eggers 1931a: 15; Schedl 1979c: 149.

***meris* Wood** 1982a: 226. Holotype ♀; La Cumbre, Valle, Colombia; Wood Collection.
Distribution: South America (Colombia).
Hosts: *Coffea arabica*.
References: (**ds**) Wood, S. L. 1982b: 239. (**tx**) Schedl 1979c: 153; Wood, S. L. 1982a: 226, 1982b: 239.

***minax* Schedl** 1952d: 352. Holotype ♀; Mexico; Schedl Collection in NHMW, Wien.
Figures: Wood 1968a: 97.
Distribution: North America (Mexico).
References: (**tx**) Schedl 1952d: 352; Wood, S. L. 1968a: 97.

***minitropis* Wood** 1968a: 105. Holotype ♀; San Ignacio de Acosta, San Jose, Costa Rica; Wood Collection.
Figures: Wood 1968a: 97.
Distribution: North America (Costa Rica).
References: (**hb**) Wood, S. L. 1982b: 244. (**ds**) Wood, S. L. 1982b: 244. (**tx**) Wood, S. L. 1968a: 97, 105, 1982b: 244.

***minor* Wood** 1985: 272. Holotype ♀; Grecia, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
References: (**tx**) Wood, S. L. 1985: 272.

***minusculus* Schedl** 1952d: 353. Holotype ♀?; Guyan. Ven. Mor.; Schedl Collection in NHMW, Wien.
Distribution: South America (Venezuela).
References: (**tx**) Schedl 1952d: 353, 1979c: 155.

***myelitis* Wood** 1967b: 84. Holotype ♂; Teziutlan, Puebla, Mexico; Wood Collection.
Distribution: North America (Puebla, Veracruz in Mexico).
Hosts: *Persea americana*.
References: (**hb**) Wood, S. L. 1982b: 223. (**ds**) Atkinson & Equihua 1985b: 230; Wood, S. L. 1982b: 223. (**tx**) Wood, S. L. 1967b: 84, 1982b: 223.

***nebulosus* Wood** 1983a: 655. Holotype ♀; Pachuca, Hidalgo, Mexico; Wood Collection.
Distribution: North America (Hidalgo in Mexico).
References: (**hb**) Atkinson & Equihua 1985a: 74. (**ds**) Atkinson & Equihua 1985a: 74. (**tx**) Wood, S. L. 1983a: 655.

***niger* Wood** 1967b: 83. Holotype ♂; Cerro Punta, Chiriqui, Panama; Wood Collection.
Figures: Wood 1968a: 90.
Distribution: North America (Panama).
References: (**hb**) Wood, S. L. 1982b: 221. (**ds**) Wood, S. L. 1982b: 221. (**tx**) Wood, S. L. 1967b: 83, 1968a: 90, 1982b: 221.

***nitidus* Eggers** 1943a: 376. Lectotype, sex?; Bolivia (Cochabamba); USNM, Washington, designated by Anderson & Anderson 1971: 22.
Distribution: South America (Bolivia).
References: (**ds**) Anderson, W. H. & Anderson 1971: 22; Schedl 1972g: 42. (**tx**) Eggers 1940a: 137, 1943a: 376–377; Schedl 1940a: 331, 1948f: 268, 1952d: 354.

***noguerae* Atkinson** 1989: 57. Holotype ♀; Mexico: Veracruz, Xalapa; USNM, Washington.
Distribution: North America (Veracruz in Mexico).
Hosts: *Psittacanthus schiedeanus*.
References: (**tx**) Atkinson 1989: 57.

***novateutonicus* Schedl** 1951m: 77. Syntypes, sex?; Brasilien, Santa Catarina, Nova Teutonia; Schedl Collection in NHMW, Wien and Plaumann Collection.
Figures: Schedl 1951m: 77 (male).
Distribution: South America (Brazil).
Hosts: *Canella* sp.
Notes: (1) Schedl 1979c: 172 (citation of holotype invalid).
References: (**ds**) Schedl 1967d: 2, 1973d: 153. (**tx**) Schedl 1951m: 77, 1979c: 171.

***ocularis* Blandford** 1896e: 140. Holotype, sex?; Venezuela [probably Colonia Tovar]; BMNH, London.
Distribution: South America (Venezuela).
References: (**ds**) Blackwelder 1947; Hagedorn 1910d: 80; Kleine 1913b: 148, 1914b: 339; LePelley 1968: 443. (**tx**) Blandford 1896e: 140; Eggers 1931b: 34; Hagedorn 1910a: 131.

***paleatus* Blandford** 1896e: 138. Holotype ♀; Guatemala: El Tumbador; BMNH, London.
Figures: Blandford 1896e:pl. 6, fig. 16.
Distribution: North America (Guatemala).
References: (**ds**) Blackwelder 1947; Hagedorn 1910d: 80; Kleine 1913b: 148, 1914b: 365; Wood, S. L. 1982b: 225. (**tx**) Blandford 1896e: 138; Hagedorn 1910a: 131; Wood, S. L. 1982b: 225.

***paraguayensis* Schedl** 1936i: 107. Holotype ♂; Paraguay; Schedl Collection in NHMW, Wien.
Distribution: South America (Paraguay).
References: (**ds**) Blackwelder 1947; Schedl 1973d: 153. (**tx**) Schedl 1936i: 107, 1979c: 184.

***parvicornis* Wood** 1983a: 656. Holotype ♀; Ruinas de Xochicalco, Morelos, Mexico; Wood Collection.
Distribution: North America (Morelos in Mexico).
References: (**hb**) Atkinson et al. 1986: 48. (**ds**) Atkinson et al. 1986: 48. (**tx**) Wood, S. L. 1983a: 656.

***perplexus* Wood** 1968b: 102. Holotype ♂; San Ignacio de Acosta, San Jose, Costa Rica; Wood Collection.
Figures: Wood 1968a: 93.
Distribution: North America (Costa Rica).
References: (**tx**) Schedl 1979c: 190; Wood, S. L. 1968a: 93, 1968b: 102.

***pilatus* Wood** 1975a: 24. Holotype ♀; 13 km W El Palmito, Sinaloa, Mexico; CNCI, Ottawa.
Distribution: North America (Sinaloa in Mexico).
References: (**ds**) Wood, S. L. 1982b: 240. (**tx**) McNamara 1977: 753; Wood, S. L. 1975a: 24, 1982b: 240.

***pilosus* Eggers** 1943a: 378. Holotype ♀; Bolivia (Cochabamba); Eggers Collection, in NHMW, Wien.
Distribution: South America (Bolivia).
References: (**tx**) Eggers 1943a: 378; Schedl 1979c: 194.

***plaumanni* Schedl** 1963d: 220. Holotype ♂; Brasilien: Santa Catarina, Nova Teutonia; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**ds**) Schedl 1976a: 50. (**tx**) Eggers 1943a: 378; Schedl 1963d: 220, 1979c: 196.

***porcatus* Blandford** 1896e: 137. Lectotype ♀; Volcan de Chiriqui, Panama; BMNH, London, designated by Wood 1982b: 236.
Figures: Blandford 1896e:pl. 6, 15–15a, Wood 1968a: 97.
Distribution: North America (Costa Rica/ Guatemala/ Panama), South America (Venezuela).
Hosts: *Oreopanax capitatus*, *O.* sp., *Quercus* sp., liana.
References: (**ds**) Blackwelder 1947; Bright 1979b: 1496; Hagedorn 1910d: 80; Kleine 1913b: 148, 1914b: 339, 365; Wood, S. L. 1982b: 236. (**tx**) Blackman 1943c: 375; Blandford 1896e: 137; Eggers 1931b: 35; Hagedorn 1910a: 131; Schedl 1936i: 106–107, 1979c: 197; Wood, S. L. 1968a: 97, 1972c: 193, 1982b: 236.

***prominulus* Wood** 1977b: 212. Holotype ♀; Volcan Colima, Jalisco, Mexico; Wood Collection.
Distribution: North America (Jalisco, Morelos in Mexico).
Hosts: *Persea americana*.
References: (**hb**) Atkinson et al. 1986: 20; (**ds**) Atkinson & Equihua 1985b: 230; Atkinson et al. 1986: 20; Wood, S. L. 1982b: 239. (**tx**) Wood, S. L. 1977b: 212, 1982b: 239.

***pullus* Blandford** 1896e: 141. Lectotype ♀; Cerro Zunil, Guatemala; BMNH, London, designated by Wood 1982b: 217.
Figures: Wood 1968a: 90.
Distribution: North America (Guatemala/ Veracruz in Mexico/ Panama).
Hosts: *Persea americana*.
References: (**hb**) Wood, S. L. 1982b: 217. (**ds**) Blackwelder 1947; Hagedorn 1910d: 80; Kleine 1913b: 148, 1914b: 365; Wood, S. L. 1982b: 217. (**tx**) Blandford 1896e: 141; Hagedorn 1910a: 131; Wood, S. L. 1968a: 90, 1982b: 217.

***pumilus* Eggers** 1931b: 34. Holotype, sex?; Sao Paulo (Brazil); USNM, Washington.
Distribution: South America (Brazil).
References: (**ds**) Anderson, W. H. & Anderson 1971: 26; Blackwelder 1947. (**tx**) Eggers 1931b: 34.

***punctatus* Blandford** 1896e: 136. Holotype ♀; Panama: Volcan Chiriqui, Chiriqui; BMNH, London.
Figures: Blandford 1896e:pl. 6, Wood 1968a: 90.
Distribution: North America (Costa Rica/ Puebla in Mexico/ Panama).
Hosts: *Guazuma ulmifolia, Persea americana*.
References: (**ds**) Blackwelder 1947; Hagedorn 1910d: 80; Kleine 1913b: 148, 1914b: 365; Wood, S. L. 1982b: 220. (**tx**) Blandford 1896e: 136; Hagedorn 1910a: 131; Wood, S. L. 1967b: 84, 1968a: 90, 1982b: 220.

***pusillus* Schedl** 1948f: 267. Holotype, sex?; Brazil, Blumenau; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1948f: 267, 1979c: 206.

***quaesitus* Schedl** 1940a: 331. Holotype ♀; Mexico: "Tibayes" [possible error for Tacubaya, Distrito Federal]; Schedl Collection in NHMW, Wien.
Distribution: North America (Distrito Federal in Mexico).
References: (**ds**) Blackwelder 1947; Ferrer 1942; Wood, S. L. 1982b: 229. (**tx**) Schedl 1940a: 331–333, 1979c: 209; Wood, S. L. 1982b: 229.

***reticulatus* (Chapuis)** 1869: 29 (*Hylesinus*). Holotype, sex?; Bogota (Colombia); IRSNB, Brussels.
Distribution: South America (Colombia).
Notes: (1) Eggers 1933b: 18 (to *Cnesinus*).
References: (**ds**) Blackwelder 1947; Hagedorn 1910d: 18; Kleine 1912b: 171, 1914b: 341. (**tx**) Chapuis 1869: 29, 1873: 237; Eggers 1931c, 1933g: 18; Gemminger & Harold 1872: 2675; Hagedorn 1910a: 49.

***reticulus* Wood** 1974a: 2. Holotype ♀; 30 km E Palmar, Bolivar, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Vismia cayennensis*.
References: (**tx**) Wood, S. L. 1974a: 2.

***retifer* Wood** 1967b: 85. Holotype ♂; Fort Clayton, Canal Zone, Panama; Wood Collection.
Figures: Wood 1968a: 90.
Distribution: North America (Panama).
Hosts: *Serjania* sp.
References: (**hb**) Wood, S. L. 1982b: 215. (**ds**) Wood, S. L. 1982b: 215. (**tx**) Wood, S. L. 1967b: 85–86, 1968a: 90, 1982b: 215.

***robai* Blackman** 1943c: 374. Holotype, sex?; Santander Department, Colombia; USNM, Washington.
Figures: Blackman 1943c:pl. 15, fig. 5.
Distribution: South America (Colombia).
Hosts: *Coffea arabica*.
References: (**ds**) Blackwelder 1947; Schedl 1961c: 1. (**tx**) Blackman 1943c: 374; Wood, S. L. 1961c: 1.

***schoenherri* Schedl** 1976a: 63. Holotype ♀; Brasilien, Rio Negrinho; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**ds**) Pedrosa-Macedo & Schonherr 1985: 13; Schonherr & Pedrosa-Macedo 1981: 51. (**tx**) Pedrosa-Macedo & Schonherr 1985: 13; Schedl 1976a: 63.

***setosus* Eggers** 1943a: 377. Holotype, sex?; Bolivia (Cochabamba); USNM, Washington.
Distribution: South America (Bolivia).
References: (**tx**) Anderson, W. H. & Anderson 1971: 29; Eggers 1943a: 377; Schedl 1979c: 226.

***setulosus* Blandford** 1896e: 139. Lectotype ♂; Panama: Tole, Chirqui; BMNH, London, designated by Wood 1982b: 242.
Figures: Atkinson et al. 1986: 18, Blackman 1943c:pl. 15, figs. 3–4, 6, Wood 1968a: 97.
Distribution: North America (Guatemala/ Honduras/ Chiapas, Colima, Guerrero, Jalisco, Morelos, Oaxaca, Tamaulipas in Mexico/ Panama).
Hosts: *Acacia pennatula, Arbutus xalapensis, Conocarpus erecta, Clytastoma binatum, Ficus* sp., *Morisonia americana, Serjania mexicana*.
References: (**ec**) Equihua & Atkinson 1986: 625. (**hb**) Atkinson et al. 1986: 20; Equihua & Atkinson 1986: 625; Wood, S. L. 1982b: 242. (**ds**) Atkinson & Equihua 1985b: 230, 1988: 86; Atkinson et al. 1986: 20; Blackwelder 1947; Equihua & Atkinson 1986: 625; Hagedorn 1910d: 80; Kleine 1913b: 148, 1914b: 365; Wood S. L. 1982b: 242. (**tx**) Atkinson et al. 1986: 18; Blandford 1896e: 139; Hagedorn 1910a: 131; Schedl 1938i: 21; Wood, S. L. 1968a: 97, 1972c: 144, 1982b: 242.

flavopilosus Schedl 1940a: 333. Holotype ♂?; Mexico: Comitan; Schedl Collection in NHMW, Wien. Synonymy: Wood 1972c: 144.
References: (**ds**) Blackwelder 1947; Ferrer 1942. (**tx**) Schedl 1940a: 332–334, 1948f: 266, 1979c: 97; Wood, S. L. 1967b: 88, 1972c: 144.

panamensis Blackman 1943a: 372. Holotype ♂; Panama; USNM, Washington. Synonymy: Wood 1972c: 144.
References: (**ds**) Blackwelder 1947. (**tx**) Blackman 1943a: 372; Wood, S. L. 1972c: 144.

cognatus Blackman 1943a: 373. Holotype ♂; El

Peten Prov., Guatemala; USNM, Washington. Synonymy: Wood 1972c: 144.
References: (**ds**) Blackwelder 1947. (**tx**) Blackman 1943a: 373–374; Wood 1967b: 83, 1972b: 144.

***squamosus* Wood** 1968a: 102. Holotype ♀; Lower Rio Tempisque, Guanacaste, Costa Rica; Wood Collection.
Figures: Wood 1968a: 97.
Distribution: North America (Costa Rica/ Panama), South America (Venezuela).
Hosts: *Serjania* spp.
References: (**hb**) Wood, S. L. 1982b: 236. (**ds**) Wood, S. L. 1982b: 236. (**tx**) Wood, S. L. 1968a: 97, 102, 1982: 236.

***strigicollis* LeConte** 1868: 171. Lectotype ♀; Illinois [USA]; MCZ, Cambridge, designated by Wood 1982b: 241.
Figures: Wood 1968a: 97.
Distribution: North America (Campeche, Chiapas, Veracruz in Mexico/ District of Columbia, Florida, Georgia, Illinois, Louisiana, Maryland, Michigan, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, West Virginia in USA).
Hosts: *Amerimonon brownei, Ardesia paniculata, Bumelia lanuginosa, Carya* sp., *Coccolobis laurifolia, Dipholis salicifolia, Fagus grandifolia, Liquidambar styraciflua, Lonchocarpus castilloi, Magnolia glauca, Pyrus communis, Quercus* sp., *Smilax* sp., *Toxoxylon pomiferum.*
Notes: (3) Schwarz 1886: 54 (redescribed).
References: (**bv**) Atkinson, Foltz, & Connor 1988; Turnbow & Franklin 1980. (**cn**) Smith, J. B. 1900: 365. (**hb**) Atkinson, Foltz, & Connor 1988; Beal & Massey 1945: 71–72; Chamberlin 1939: 241; Deyrup & Atkinson 1987a: 64; Hopkins 1899a: 343, 1907a; Pierce 1907: 293; Schwarz 1891e: 79; Wood, S. L. 1982b: 241. (**ds**) Anonymous 1926c: 515; Beal & Massey 1945: 71–72; Blackwelder 1947; Blatchley & Leng 1916: 586; Chamberlin 1939: 241; Cooper 1935; Deyrup 1981b: 4; Deyrup & Atkinson 1987a: 64; Estrada & Atkinson 1988: 203; Ferrer 1942; Frost 1975: 37; Hagedorn 1910d: 80; Hamilton 1887: 66, 1895a: 378; Henshaw 1882: 269, 1885: 149; Hopkins 1899: 343, 1907a: 113; Kirby 1970; Kirk 1969; Kleine 1913b: 148, 1914b: 352, 1934a: 167; Knull 1932: 65–66; Leng 1920: 337; Leonard 1928: 515; Schedl 1960a: 75; Schwarz 1875d: 469, 1886: 54, 1890: 87, 1891e: 79; Smith, J. B. 1900: 365, 1910: 404; Swaine 1909: 89; Turnbow & Franklin 1980; Ulke 1902: 56; Wood, S. L. 1982b: 241. (**tx**) Beal & Massey 1945: 71–72; Blackman 1943c: 371–373; Blandford 1896e: 136, 139; Blatchley & Leng 1916: 586; Chamberlin 1939: 241; Gemminger & Harold 1872: 2672; Hagedorn 1910a: 131; Hopkins 1914: 118; LeConte 1868: 171, 1876: 378, 1878a: 469, 1876: 378; Lucas 1920: 193; Schedl 1940a: 331; Schwarz 1886: 54; Swaine 1909: 89; Wood, S. L. 1968a: 97, 1982b: 241. (**ms**) Lucas 1920: 193.
strigillatus Chapuis 1869: 27 (*Nemophilus*). Syntypes, sex?; Amerique boreale, Texas [USA]; IRSNB, Brussels. Synonymy: LeConte 1876: 378.
References: (**ds**) Blandford 1896e; Leng 1920: 337; Swaine 1909: 89. (**tx**) Blandford 1896e: 136, 139; Chapuis 1869: 27, 1873: 235; Gemminger & Harold 1872: 2672; LeConte 1876: 378; Swaine 1909: 89.

***sulcatus* Eggers** 1931b: 34. Holotype, sex?; Sao Paulo (Brasil); Prage Museum.
Distribution: South America (Brazil).
References: (**ds**) Blackwelder 1947. (**tx**) Eggers 1931b: 34.

***teres* Blandford** 1896e: 141. Syntypes, sex?; Venezuela [probably Colonia Tovar]; BMNH, London.
Distribution: South America (Venezuela).
References: (**ds**) Blackwelder 1947; Hagedorn 1910d: 80; Kleine 1913b: 148, 1914b: 339. (**tx**) Blandford 1896e: 141; Hagedorn 1910a: 131.

***teretis* Wood** 1974a: 3. Holotype ♀; 7 km NW Socopo, Barinas, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Nectandra* sp.
References: (**tx**) Wood, S. L. 1974a: 3.

***theocallus* Bright** 1972b: 1493. Holotype ♀; 24 km S Valle Nacional, Oaxaca, Mexico; CNCI, Ottawa.
Distribution: North America (Oaxaca in Mexico).
Notes: (3) A probable synonym of *elegans* Blandford.
References: (**ds**) Wood, S. L. 1982b: 227. (**tx**) Bright 1972b: 1493; McNamara 1977: 194; Wood, S. L. 1982b: 227.

***transitus* Schedl** 1976a: 63. Holotype ♀; Corcovado, Guanabara, Brasil; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1976a: 63.

***triangularis* Wood** 1974a: 5. Holotype ♀; Piedras Blancas, 10 km E Medellin, Antioquia, Colombia; Wood Collection.
Distribution: South America (Colombia).
Hosts: Uvo de Monte (shrub).
References: (**tx**) Wood, S. L. 1974a: 5.

***vestitus* Eggers** 1933b: 16. Holotype, sex?; Venezuela (Colonia Tovar); MNHN, Paris.
Distribution: South America (Venezuela).
Hosts: Bamboo.
References: (**ds**) Blackwelder 1947. (**tx**) Eggers 1933b: 2, 16–17.

***vexator* Schedl** 1963d: 220. Holotype ♀; Brasilien: Santa Catarina, Nova Teutonia; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1963d: 220, 1979c: 266.

Genus *Pagiocerus* Eichhoff

PAGIOCERUS EICHHOFF 1868c: 148. Type-species: *Pagiocerus rimosus* Eichhoff = *Bostrichus frontalis* Fabricius, subsequent designation by Hopkins 1914: 126.

References: (**cn**) Linsley 1944: 202. (**hb**) Hopkins 1907: 112; Lipes 1968: 32; Wood, S. L. 1986a: 48. (**ds**) Wood, S. L. 1986a: 48. (**tx**) Blandford 1895b: 49, 1896e: 134; Blatchley & Leng 1916: 586; Chamberlin 1939: 241–242; Chapuis 1869: 26, 1873: 234; Eggers 1940a: 123–141; Eichhoff 1868c: 148; Hagedorn 1910a: 131, 1910d: 79–80; Hopkins 1914: 126; Lucas 1920: 477; Schedl 1960h: 6, 1965i: 300; Swaine 1909: 128, 1918a: 39; Wood, S. L. 1986a: 48.

***cribricollis* Eichhoff** 1868c: 148. Holotype, sex?; Brasilia; Hamburg Museum, lost.

Distribution: South America (Brazil).

References: (**hb**) Hopkins 1907a; Wood, S. L. 1982b: 245–246. (**ds**) Blackwelder 1947: 787; Chapuis 1869: 27, 1873: 235; Eichhoff 1868c: 148; Hagedorn 1910d: 80; Hopkins 1907a; Kleine 1913b: 148, 1914b: 336; Wood, S. L. 1982b: 245–246. (**tx**) Arnett 1960: 1040, 1968: 1040; Chapuis 1869: 27, 1873: 235; Eichhoff 1868c: 148; Gemminger & Harold 1872: 2672; Hagedorn 1910a: 132; Lucas 1920: 477; Schedl 1965i; Wood, S. L. 1982b: 245–246. (**ms**) Lucas 1920: 477.

***frontalis* (Fabricius)** 1801: 389 (*Bostrichus*). Syntypes, sex?; Carolina [USA]; UZMC, Copenhagen.

Figures: Atkinson et al. 1986: 18, 49, Blandford 1986e:pl. 6, fig. 6–7.

Distribution: Antilles Islands (Cuba/ Guadeloupe), North America (Costa Rica/ El Salvador/ Guatemala/ Honduras/ Distrito Federal, Mexico, Morelos, Nayarit, Queretaro, Puebla, Veracruz in Mexico/ Panama/ Florida, Georgia, North Carolina, South Carolina, Texas in USA), South America (Argentina/ Bolivia/ Brazil/ Chile/ Colombia/ Ecuador/ Peru/ Venezuela).

Hosts: *Ocotea* spp., *Persea americana*, *P.* spp., *Zea mays*.

Notes: (1) Eggers 1929e: 42 (to *Pagiocerus*. (3) Economic damage to mature and stored grain of maize occurs in northern South America; infested grain shipped from this area has been intercepted in many countries.

References: (**ay**) Saldarriaga 1985. (**bv**) Saldarriaga 1985. (**cn**) Anonymous 1941a: 429; Mumford 1965: 28; Piedra 1949, 1950; Wood, S. L. 1977a: 72. (**hb**) Atkinson et al. 1986: 20, 48; Beccari 1963: 399; Burgos & Saucedo 1983: 60; Deyrup & Atkinson 1987a: 64; Gould 1948: 776; Linsley 1944: 205; Peck, Kukalova-Peck, & Borden 1985; Saldarriaga 1985; Soukup 1942: 328; Wille 1934: 4–8, 1943: 245; Wood, S. L. 1982b: 246; Yust 1957: 92–96. (**ds**) Atkinson & Equihua 1985a: 74, 1985b: 230, 1988: 92; Atkinson et al. 1986: 20, 48; Beaver 1973a; Blackwelder 1947: 787; Bright 1972d: 29, 1985c: 171; Burgos & Saucedo 1983: 60; Deyrup & Atkinson 1987a: 64; Ferrer 1942; Guagliumi 1966: 218; Kirk 1969; Kleine 1934a: 167; Mumford 1965: 28; Nunberg 1963c: 97; Schedl 1960a: 75, 1965i, 1966f: 78, 1971f: 147, 1972d: 140, 1973d: 153, 1974e: 50, 1978c: 291; Wood, S. L. 1977a: 72, 1982b: 246. (**tx**) Anderson, W. H. 1948: 215; Atkinson et al. 1986: 18, 49; Bright 1972d: 29, 1985c: 171; Eggers 1928c: 92, 1929e: 42, 1940a: 136; Fabricius 1801: 389; Lepesme 1944: 237; Muskus, A. 1984: 50; Saldarriaga 1985; Schedl 1940a: 329–330, 1960h: 6, 1962m: 62–64, 1965i, 1972d: 140, 1974e; Wood, S. L. 1982b: 246.

rimosus Eichhoff 1868c: 148. Syntypes, sex?; Cuba; Hamburg Museum, lost. Synonymy: Eggers 1928c: 92.

References: (**cn**) Barber 1919: 59; Ebeling 1959; Soukup 1942: 320; Wille 1943: 364–366. (**hb**) Bondar 1950: 479; Chamberlin 1939: 242; Hopkins 1907a: 112–113; Linsley 1944–205. (**ds**) Blatchley & Leng 1916: 586; Chamberlin 1939: 242; Chapuis 1869: 26, 1873: 234; Ebeling 1959; Ferrer 1942; Hagedorn 1910d: 80; Hopkins 1907a: 112–113; Kleine 1913b: 148, 1914b: 332, 342, 352, 364, 378; Leng 1920: 337; Swaine 1909: 128. (**tx**) Blandford 1896e: 49, 134; Blatchley & Leng 1916: 586; Chamberlin 1939: 242; Chapuis 1869: 26, 1873: 234; Eggers 1928c: 92, 1929e: 46; Eichhoff 1868c: 148; Gemminger & Harold 1872: 2672; Hagedorn 1910a: 132; Hopkins 1914: 126; Lepesme 1944: 237; Lucas 1920: 477; Schedl 1940a: 329–331, 1960h: 6, 1965i; Swaine 1909: 128. (**ms**) Lucas 1920: 477.

hubbardi Schwarz 1886: 54 (*Bothrosternus*). Holotype, sex?; St. Lucie, Florida [USA]; USNM, Washington. Synonymy: Anderson 1948: 215.

References: (**hb**) Chamberlin 1939: 242. (**ds**) Blatchley & Leng 1916: 585; Chamberlin 1939: 242; Hagedorn 1910d: 79; Henshaw 1887: 8, 1895: 44; Kleine 1913b: 147, 1914b: 384, 1934a: 167; Leng 1920: 337; Schwarz 1886: 54; Swaine 1909: 87. (**tx**) Anderson, W. H. 1948: 215; Blandford 1896e: 131; Blatchley & Leng 1916: 585; Chamberlin 1939: 242; Eggers 1943a: 373; Hagedorn 1910a: 129; Schwarz 1886: 54; Swaine 1909: 87.

fiorii Eggers 1908c: 215 (*Hylastinus*). Holotype, sex?; Genua (Italia); Andr. Fiori Collection, Bologna. Synonymy: Schedl 1960h: 6.

References: (**cn**) Ceballos 1957; Mumford 1960: 35, 1961: 21, 1962: 32, 1963: 38; Yust 1957: 92; Yust & Ceballos 1958: 468–469. (**ec**) Wichmann 1955a: 97. (**hb**) Viana 1964: 128; Yust 1957: 92. (**ds**) Blackwelder 1947: 787; Ferrer 1942; Hagedorn 1910d: 9; Kleine 1912b: 165; Mumford 1960: 35, 1961: 29,

1962: 32, 1963: 38; Viana 1964: 128; Wichmann 1955a: 97. (**tx**) Eggers 1908c: 215, 1940a: 136, 1940h: 62; Hagedorn 1910a: 45; Pfeffer 1984b: 12; Reitter 1913a: 46; Schedl 1934f: 1635, 1939d: 412, 1940a: 329, 231, 1960h: 6.

chiriquensis Eggers 1928c: 92. Holotype, sex?; Panama: Volcan Chiriqui; Eggers Collection, in NHMW, Wien. Synonymy: Schedl 1960h: 6.
References: (**ds**) Blackwelder 1947: 787; Ferrer 1942. (**tx**) Eggers 1928c: 92; Schedl 1940a: 329, 331, 1951d: 17, 1960h: 6.

zeae Eggers 1928c: 92. Lectotype, sex?; South American corn kernels; USNM, Washington, designated by Anderson & Anderson 1971: 36. Synonymy: Eggers 1940h: 62, Schedl 1960h: 6.
References: (**hb**) Linsley 1944: 206; Stark 1952: 147. (**ds**) Bekman 1929: 155–166; Stark 1952: 147. (**tx**) Anderson, W. H. & Anderson 1971: 36; Eggers 1928c: 92, 1940h: 62, Lepesme 1944: 237; Schedl 1960h: 6; Stark 1952: 147.

nitidus Eggers 1930a: 170. Holotype, sex?; Venezuela (Caracas); MNB, Berlin. Synonymy: Schedl 1960g: 6.
References: (**ds**) Blackwelder 1947: 787. (**tx**) Eggers 1930a: 170–171; Schedl 1960h: 6.

caraibicus Eggers 1940a: 136. Holotype, sex?; Trois Rivieres, Guadeloupe; Eggers Collection, in NHMW, Wien. Synonymy: Schedl 1960h: 6.
References: (**tx**) Eggers 1940a: 136; Schedl 1960h: 6.

***luederwaldti* Eggers** 1928c: 93. Holotype, sex?; Brasil, Sao Paulo; Museum Paulista, Sao Paulo.
Distribution: South America (Brazil).
References: (**ds**) Blackwelder 1947: 787. (**tx**) Eggers 1928c: 93; Schedl 1965i.

***major* Schedl** 1976a: 64. Holotype ♂?; Linhares, E. Santo, Brasil; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1976a: 64.

***punctatus* Eggers** 1928c: 93. Holotype ♂; Brasil (Corumba, Matto Grosso); Eggers Collection, in NHMW, Wien.
Figures: Pedrosa-Macedo & Schonherr 1985: 14.
Distribution: South America (Brazil).
References: (**ds**) Blackwelder 1947: 787; Pedrosa-Macedo & Schonherr 1985: 14; Schedl 1966f: 82, 1967d: 2, 1972g: 42, 1976a: 50; Schonherr & Pedrosa-Macedo 1981: 51. (**tx**) Eggers 1928c: 93, 1930: 170; Pedrosa-Macedo & Schonherr 1985: 14; Schedl 1965i.

Genus *Eupagiocerus* Blandford

EUPAGIOCERUS BLANDFORD 1896e: 133. Type-species: *Eupagiocerus dentipes* Blandford, monobasic.

Nemopagiocerus Schedl 1962r: 85. Type-species: *Eupagiocerus nevermanni* Schedl = *Eupagiocerus ater* Eggers, monobasic. Synonymy: Wood 1965: 31.
References: (**tx**) Schedl 1962r: 85; Wood, S. L. 1965: 31.

Keys: Wood 1965: 31.
References: (**hb**) Wood, S. L. 1986a: 48. (**ds**) Wood, S. L. 1986a: 48. (**tx**) Blandford 1896e: 133; Hagedorn 1910a: 129, 1910d: 79; Lucas 1920: 282; Schedl 1962r: 85; Wood, S. L. 1965: 31, 1982b: 249, 1986a: 46–48.

***ater* Eggers** 1931a: 14. Holotype ♂; Caracas, Venezuela; MNB, Berlin.
Distribution: North America (Costa Rica/ Panama), South America (Peru/ Venezuela).
Hosts: *Serjania* sp.
References: (**hb**) Wood, S. L. 1965, 1982b: 252. (**ds**) Blackwelder 1947: 787; Wood, S. L. 1982b: 252. (**tx**) Eggers 1931a: 14; Schedl 1963h: 258; Wood, S. L. 1965: 32, 1982b: 252.

nevermanni Schedl 1952d: 350. Holotype ♀?; Turrialba, Costa Rica; Schedl Collection in NHMW, Wien. Synonymy: Wood, S. L. 1965: 32.
References: (**tx**) Schedl 1952d: 350, 1962r: 85; Wood, S. L. 1965: 32.

serratus Wood 1961d: 104. Holotype ♂; Paraiso, Canal Zone, Panama; USNM, Washington. Synonymy: Wood, S. L. 1965: 32.
References: (**tx**) Wood, S. L. 1961d: 104, 1965: 32.

***dentipes* Blandford** 1896e: 133. Lectotype ♂; El Tumbador, Guatemala; BMNH, London, designated by Wood 1982b: 251.
Distribution: North America (Guatemala/ Chiapas in Mexico/ Panama).
Hosts: Liana.
References: (**hb**) Wood, S. L. 1982b: 251. (**ds**) Blackwelder 1947: 787; Bright 1972b: 1496; Hagedorn 1903b: 546, 1910d: 79; Kleine 1913b: 148, 1914b: 364; Wood, S. L. 1982b: 251. (**tx**) Blandford 1896e: 133; Eggers 1930a: 171, 1931a: 14, 1931c: 18, 1933b: 2, 16, 1933g: 18; Hagedorn 1903b: 546, 1910a: 130; Hopkins 1914: 121; Lucas 1920: 282; Wood, S. L. 1972c: 145, 1982b: 251. (**ms**) Lucas 1920: 282.

clarus Wood 1965: 33. Holotype ♀; Rio Viejo, Volcan Chiriqui, Panama; Wood Collection. Synonymy: Wood 1972c: 145.
References: (**tx**) Wood, S. L. 1965: 33, 1972c: 145.

***vastus* Wood** 1965: 34. Holotype ♀; Puerto Viejo, Heredia Province, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: Liana.
References: (**hb**) Wood, S. L. 1982b: 250. (**ds**) Wood, S. L. 1982b: 250. (**tx**) Wood, S. L. 1965: 34, 1982b: 250.

Genus *Bothrosternus* Eichhoff

BOTHROSTERNUS EICHHOFF 1868c: 150. Type-species: *Bothrosternus truncatus* Eichhoff, monobasic.
Keys: Wood 1982b: 247 for North and Central America.
References: (**ay**) Nobuchi 1969a: 47. (**hb**) Wood, S. L. 1982b: 247, 1986a: 46. (**ds**) Wood, S. L. 1982b: 247, 1986a: 46. (**tx**) Blandford 1896e: 131–132; Blatchley & Leng 1916: 595; Chamberlin 1939: 239–240; Chapuis 1869: 24, 1873: 232; Eggers 1933b: 14, 1943a: 372; Eichhoff 1868c: 150; Hagedorn 1910a: 128, 1910d: 79; LeConte & Horn 1883: 523; Leng 1920: 337; Lucas 1920: 145; Swaine 1909: 86, 1918a: 39; Wood, S. L. 1982b: 247, 1986a: 46–48.

***affinis* Eggers** 1933b: 14. Holotype, sex?; Venezuela (San Esteban); MNHN, Paris.
Distribution: South America (Venezuela).
Hosts: Liana.
References: (**ds**) Blackwelder 1947: 787. (**tx**) Eggers 1933b: 2, 14–15.

***artestrigosus* Schedl** 1939k: 722. Syntypes, sex?; Nova Teutonia, Sta. Catarina, Brasilien; Schedl Collection in NHMW, Wien, and Plaumann Collection.
Figures: Schedl 1939k: 721.
Distribution: South America (Brazil).
Notes: (1) Schedl 1979c: 21 (citation of holotype invalid).
References: (ds) Blackwelder 1947: 787; Schedl 1973a: 366, 1978c: 291. (**tx**) Schedl 1939k: 722–723, 1979c: 27.

***brevis* Eggers** 1933b: 15. Holotype ♀; Brasil (Sao Paulo); USNM, Washington.
Distribution: South America (Brazil).
References: (**ds**) Blackwelder 1947: 787; Bright 1981c: 152; Schedl 1966f: 83. (**tx**) Anderson, W. H. & Anderson 1971: 8; Eggers 1931c: 18, 1933b: 2, 15, 1933g: 18; Schedl 1979c: 46.

***definitus* Wood** 1968a: 109. Holotype ♀; Finca Gromaco on Rio Coto Brus, Puntarenas Prov., Costa Rica; Wood Collection.
Distribution: North America (Costa Rica/ Panama).
Hosts: Liana.
References: (**tx**) Wood, S. L. 1968a: 109.

***foveatus* (Blackman)** 1943c: 375 (*Cnesinus*). Holotype ♀; Trece Aguas, Alta Verapaz, Guatemala; USNM, Washington.
Figures: Blackman 1943c:pl. 15, figs. 9–11.
Distribution: North America (Costa Rica/ El Salvador/ Guatemala/ Oaxaca, Veracruz in Mexico).
Hosts: *Cupania guatemalensis*, *Oreopanax capitatus*, *Serjania* sp.
Notes: (3) Male unknown, hundreds of females have been collected from galleries in all stages of completion.
References: (**hb**) Wood, S. L. 1982b: 247. (**ds**) Blackwelder 1947; Wood, S. L. 1982b: 247. (**tx**) Blackman 1943c: 375–376; Wood, S. L. 1982b: 247.

***hirsutus* Wood** 1985: 271. Holotype ♂; Rancho Grande, Aragua, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Serjania* sp., *Tabebuia* sp.
Notes: (3) Males and females occurred in equal numbers.
References: (**tx**) Wood, S. L. 1985: 271.

***isolatus* Bright** 1972d: 28. Holotype ♂; Clydesdale, St. Andrew Parish, Jamaica; CNCI, Ottawa.
Figures: Bright 1972d: 35, 75.
Distribution: Antilles Islands (Jamaica).
Notes: Bright 1985: 179 (described female).
References: (**ds**) Bright 1985c: 171. (**tx**) Bright 1972d: 28, 35, 75, 1985c: 171, 177, 179; McNamara 1977: 194.

***lucidus* Wood** 1974a: 6. Holotype ♂; about 260 km N Xavantina, Mato Grosso, Brazil (12 degrees 49′ S, 51 degrees 46′ W); BMNH, London.
Distribution: South America (Brazil).
References: (**hb**) Beaver 1973a. (**ds**) Beaver 1973a; Wood, S. L. 1974a: 6.

***striatus* Eggers** 1933b: 16. Holotype, sex?; Venezuela; USNM, Washington.
Distribution: South America (Venezuela).
References: (**ds**) Blackwelder 1947: 787. (**tx**) Anderson, W. H. & Anderson 1971: 31; Eggers 1933b: 14, 16.

***subopacus* Schedl** 1963d: 217. Holotype ♀; Nova Teutonia, Santa Catarina, Brasil; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1963d: 217, 1979c: 243.

***suturalis* Eggers** 1931b: 32. Holotype, sex?; Sao Paulo, Brasil; Prage Museum.
Distribution: South America (Brazil).
References: (**ds**) Blackwelder 1947: 787; Pedrosa-Macedo & Schonherr 1985: 15; Schedl 1966f: 83, 1973d: 154, 1976a: 50. (**tx**) Eggers 1931b: 32–33; Pedrosa-Macedo & Schonherr 1985: 15; Schedl 1979c: 247.

***truncatus* Eichhoff** 1868c: 150. Holotype ♂; Venezuela; Schedl Collection in NHMW, Wien.
Distribution: North America (Panama), South America (Venezuela).
Hosts: *Serjania* sp.
Notes: (3) Males very rare, present in less than 10 percent of the series collected from their galleries.
References: (**ds**) Atkinson & Equihua 1988: 85; Blackwelder 1947: 787; Chapuis 1869: 26, 1873: 234; Gemminger & Harold 1872: 2694; Hagedorn 1903b: 546, 1910d: 79; Kleine 1913b: 147, 1914b: 339; Schedl 1966f: 79, 1976a: 50. (**tx**) Chapuis 1869: 26, 1873: 234; Eggers 1933b: 2, 14–16; Eichhoff 1868c: 150; Hagedorn 1903b: 546, 1910a: 129; Hopkins 1914: 117; Lucas 1920: 145; Schedl 1979c: 257; Wood, S. L. 1982b: 247. (**ms**) Lucas 1920: 145.

Genus *Sternobothrus* Eggers

STERNOBOTHRUS EGGERS 1943a: 372. Type-species: *Bothrosternus cancellatus* Chapuis, original designation.
Keys: Wood 1982b: 254 for Central America.
References: (**hb**) Wood, S. L. 1986a: 48. (**ds**) Wood, S. L. 1986a: 48. (**tx**) Eggers 1943a: 372; Wood, S. L. 1982b: 253–254, 1986a: 46–48.

***bicaudatus* (Blandford)** 1896e: 133 (*Bothrosternus*). Syntypes 2, sex?; Volcan de Chiriqui, Chiriqui, Panama; BMNH, London.
Figures: Blandford 1896e:pl 6, fig.4.
Distribution: North America (Panama), South America (Venezuela).
Hosts: *Nectandra* sp.
Notes: (1) Eggers 1943a: 373 (to *Sternobothrus*).
References: (**hb**) Beaver 1973a; Wood, S. L. 1982b: 255. (**ds**) Beaver 1973a; Blackwelder 1947: 787; Blandford 1896e: 133; Eggers 1943a: 372–373; Hagedorn 1910d: 79; Kleine 1913b: 147, 1914b: 364; Wood, S. L. 1982b: 255. (**tx**) Blandford 1896e: 133; Hagedorn 1910a: 129; Wood, S. L. 1982b: 255.

***cancellatus* (Chapuis)** 1869: 25 (*Bothrosternus*). Holotype ♀; Nova Fribourg, Bresil; IRSNB, Brussels.
Distribution: South America (Argentina/ Brazil).
Notes: (1) Eggers 1943a: 373 (to *Sternobothrus*).
References: (**ds**) Blackwelder 1947: 787; Gemminger & Harold 1872: 2694; Hagedorn 1910d: 79; Kleine 1913b: 147, 1914b: 336. (**tx**) Chapuis 1869: 25, 1873: 233; Eggers 1931b: 31, 1943a: 372–373; Hagedorn 1910a: 129; Schedl 1939j: 564, 1951h: 284, 1952d: 351, 1958f: 34.

***carinatus* Eggers** 1943a: 373. Holotype ♀; Bolivia (Cochabamba); Eggers Collection, in NHMW, Wien.
Distribution: South America (Bolivia/ Peru).
References: (**ds**) Blackwelder 1947: 787. (**tx**) Eggers 1943a: 373; Schedl 1952d: 351.

***costatus* (Chapuis)** 1869: 25 (*Bothrosternus*). Syntypes 2, sex?; Bresil; IRSNB, Brussels.
Distribution: South America (Brazil).
References: (**ds**) Blackwelder 1947: 787; Hagedorn 1910d: 79; Kleine 1913b: 147. (**tx**) Chapuis 1869: 25, 1873: 233; Eggers 1943a: 372–373; Hagedorn 1910a: 129.

***lacordairei* (Chapuis)** 1869: 25 (*Bothrosternus*). Syntypes, sex?; Nova-Fribourg, Bresil; IRSNB, Brussels.
Distribution: South America (Brazil).
Notes: (1) Eggers 1943a: 373 (to *Sternobothrus*).
References: (**ds**) Blackwelder 1947: 787; Gemminger & Harold 1872: 2694; Hagedorn 1910d: 79; Kleine 1913b: 147, 1914b: 336. (**tx**) Chapuis 1869: 25, 1873: 233; Eggers 1943a: 372; Hagedorn 1910a: 129.

***lobatus* Eggers** 1943a: 374. Holotype ♂; Bolivia (Cochabamba); Eggers Collection, in NHMW, Wien.
Distribution: South America (Bolivia).
References: (**ds**) Blackwelder 1947: 787. (**tx**) Eggers 1943a: 374.

***opaculus* Schedl** 1963d: 218. Holotype ♂; Brasilien: Santa Catarina, Nova Teutonia; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1963d: 218.

***rufonitidus* Schedl** 1952d: 351. Holotype ♀; Paraguay, Villarrica; Schedl Collection in NHMW, Wien.
Distribution: South America (Argentina/ Paraguay).
References: (**ds**) Schedl 1966f: 83, 1967d: 2, 1973d: 162. (**tx**) Schedl 1951h: 284, 1952d: 351.

***sculpturatus* (Blandford)** 1896e: 132 (*Bothrosternus*). Lectotype ♀; Bugaba, Chiriqui, Panama; BMNH, London, designated by Wood 1982d: 254.
Figures: Blandford 1896e:pl. 6, fig. 3, 3a-6.
Distribution: North America (Costa Rica/ Oaxaca in Mexico/ Panama), South America (Argentina/ Brazil/ Colombia/ Venezuela).
Hosts: *Nectandra* sp.
Notes: (1) Eggers 1943a: 373 (to *Sternobothrus*).
References: (**hb**) Beaver 1973a; Wood, S. L. 1982b: 254. (**ds**) Beaver 1973a; Blackwelder 1947: 787; Bright 1972b: 1497; Hagedorn 1910d: 79; Kleine 1913b: 147, 1914b: 364; Santoro 1957b: 25; Schedl 1966f: 83, 1972g: 42, 1973d: 154, 1978c: 291; Wood, S. L. 1982b: 254. (**tx**) Blandford 1896e: 132; Eggers 1943a: 372–373; Hagedorn 1910a: 129; Hopkins 1915c: pl. 9, fig. 13, pl. 12, fig. 13; Schedl 1939j: 564, 1958f: 34, 1979c: 223; Wood S. L. 1982b: 254.

***tuberculatus* Eggers** 1951: 152. Holotype ♀; Brasil (Blumenau); Eggers Collection, in NHMW, Wien.
Distribution: South America (Brazil).
References: (**ds**) Schedl 1972g: 42, 1973d: 154. (**tx**) Eggers 1951: 152.

Tribe Phloeotribini Chapuis

Phloeotribidae
References: Chapuis 1869: 42, 1873: 250.

Phloeotribi
References: LeConte & Horn 1883: 521.

Phloeotribinae
References: Hopkins 1915c: 225; Tredl 1907: 7.

Phloeotribini
References: Leng 1920: 338; Nobuchi 1985c: 7; Wood, S. L. 1978a: 112, 1982b: 256–281, 1986: 48.

Phloeotribina
References: Balachowsky 1949a: 105; Nunberg 1954: 15; Reitter 1913a: 31.

Phthorophloeides
References: Nusslin 1912: 273.

Genus *Aricerus* Blandford

ARICERUS BLANDFORD 1894a: 133. Type-species: *Aricerus chapuisi* Blandford, subsequent designation by Hopkins 1914: 117.

Hylesinosoma Lea 1910: 143. Type-species: *Hylesinus fici* Lea = *Aricerus eichhoffi* Blandford, monobasic. Synonymy: Schedl 1936g: 523.
References: (**tx**) Blackman 1943c: 384; Blandford 1897a: 162; Lea 1910: 143; Schedl 1936g: 523; Wood, S. L. 1986a: 49.

References: (**hb**) Wood, S. L. 1986a: 49. (**ds**) Wood, S. L. 1986a: 49. (**tx**) Blandford 1894a: 133, 1897a: 142; Hagedorn 1910a: 42, 1910d: 30; Hopkins 1914: 117; Schedl 1936g: 523; Wood, S. L. 1986a: 49.

***analis* Schedl** 1975g: 216. Holotype ♂; Neu-Britannien; Schedl Collection in NHMW, Wien.
Distribution: New Britain Island.
References: (**tx**) Schedl 1975g: 216, 1979c: 19.

***chapuisi* Blandford** 1894a: 134. Syntypes ♀; Australia; BMNH, London.
Distribution: Australia (Queensland).
Hosts: *Ficus* sp.
References: (**ds**) Brimblecombe 1953: 3; Hagedorn 1910d: 30; Kleine 1912b: 187, 1914b: 298; Schedl 1936g: 523, 1962i: 73. (**tx**) Blandford 1894a: 134; Hagedorn 1910a: 43; Hopkins 1914: 117; Schedl 1936g: 524.

***eichhoffi* Blandford** 1894a: 135. Syntypes, sex?; New South Wales, Australia; BMNH, London.
Figures: Blandford 1894a: 134 (antenna), Reeks 1948c: 371 (adult).
Distribution: Australia (New South Wales/Queensland), New Guinea.
Hosts: *Ficus carica*, *F. macrophylla*, *F. rubiginosa*, *F.* spp.
References: (**cn**) Froggatt 1899 (as *Hylesinus porcatus*); MacLeay 1882: 348; Tryon 1894: 63. (**hb**) Froggatt 1899 (as *Hylesinus porcatus*). (**ds**) Brimblecombe 1953: 3; Hagedorn 1910d: 30; Kleine 1912b: 187, 1914b: 299; Schedl 1936g: 523, 1980b: 183. (**tx**) Blandford 1894a: 135; Carne et al. 1980; Eggers 1929e; Hagedorn 1910a: 43; Schedl 1979c: 87.

fici Lea 1904: 103. Syntypes, sex?; Sydney Narrabeen National Park, New South Wales; SAM, Adelaide. Synonymy: Lea 1910: 143 (synonymy?), Eggers 1929e: 54, Schedl 1936g: 523.
References: (**cn**) Anonymous 1941c: 97; Froggatt 1907; Hadlington 1951a; Reeks 1948c: 371. (**hb**) Anonymous 1941c: 97; Froggatt 1907; Hadlington 1951a; Reeks 1948c: 371. (**ds**) Anonymous 1944: 21–22; Hagedorn 1910d: 16; Kleine 1914b: 298; Schedl 1936g: 523, 1962i: 73, 1965g: 25. (**tx**) Anonymous 1941c: 95–99, 116, 1944c: 21–22, 1948m: 171; Eggers 1929e: 54; Gay 1955: 12; Hagedorn 1910a: 47; Lea 1904: 103, 1910: 143; Schedl 1936g: 523, 1958i: 214, 1965g: 25.

Genus *Phloeotribus* Latreille

PHLOEOTRIBUS LATREILLE 1796: 50. Type- species: *Hylesinus oleae* Fabricius = *Scolytus scarabaeoides* Bernard, monobasic.

Phloeophthorus Wollaston 1854: 299. Type-species: *Phloeophthorus perfoliatus* Wollaston. Synonymy: Blackman 1943c: 384.
References: (**hb**) Eichhoff 1881: 144; Tredl 1907: 7. (**ds**) Postner 1974: 341. (**tx**) Balachowsky 1949a: 109–116; Bedel 1888b: 394; Blackman 1943c: 384; Chapuis 1869: 42, 1873: 250; Eichhoff 1864b: 28, 1881a: 39, 1883a: 104; Escherich 1923b: 478; Formanek 1907: 15; Guillebeau 1893: 57, 1896: 154; Hagedorn 1910d: 32; Hoffmann 1942: 73; Judeich & Nitsche 1895: 445; Karaman 1972: 84; Lacordaire 1866: 363; Nunberg 1954: 28–29; Pfeffer 1955a: 130–133, 1972b: 23–45; Postner 1974: 391; Reitter 1894: 48, 1913a: 32; Schedl 1962q: 489; Seitner 1920: 282; Spessivtsev 1931: 84; Stark 1952: 296–300; Swaine 1911a: 220–224; Tredl 1907: 7; Winkler 1932: 1640; Wollaston 1854: 299.

Dryotomus Chapuis 1869: 46. Type-species: *Dryotomus puberulus* Chapuis, monobasic, preoccupied by Swainson 1831: 301. Synonymy: Schedl 1962q: 487.
References: (**tx**) Blandford 1897a: 142; Chapuis 1869: 46, 1873: 254; Hagedorn 1910d: 30; Lucas 1920: 251; Schedl 1962q: 487; Wood, S. L. 1962: 76.

Phthorophloeus Rey 1885: 128. Type-species: *Phloeophthorus spinulosus* Rey, monobasic. Synonymy: Blackman 1943c: 384.
References: (**tx**) Balachowsky 1949a: 102–109; Beal & Massey 1945: 59, 76; Blackman 1922: 42–53, 1943c: 384; Blatchley & Leng 1916: 656–658; Bruck 1936a: 41, 126; Chamberlin 1939: 115, 139–144, 1958: 52, 63–64; Dodge 1938: 17, 25; Escherich 1923b: 427–489, 600–

601; Guillebeau 1893: 57; Jacquelin du Val & Fairmaire 1868: 101, 108; Koch 1928; Krivolutskaya 1958: 114; Leng 1920: 338; Lucas 1920: 507; Nunberg 1954: 27; Nusslin 1927: 258–261; Pfeffer 1955: 128–129; Postner 1974: 391; Priego 1932: 434; Reitter 1894: 7, 1913: 32, 36; Rey 1885: 128; Saalas 1914: 70, 75, 1917: 480–482, 1919; Schedl 1962q: 489; Scheerpeltz & Winkler 1930: 256; Schimitschek 1937: 45; Simmel 1916; Spessivtsev 1931: 22–23, 84; Stark 1932: 244; Swaine 1918a: 58–60.

Elzearius Guillebeau 1893: 64. Type-species: *Elzearius crenatus* Guillebeau, monobasic. Synonymy: Balachowsky 1949a: 108.
References: (**tx**) Balachowsky 1949a: 108; Guillebeau 1893: 64, 1896: 154.

Eulytocerus Blandford 1897a: 161. Type-species: *Eulytocerus championi* Blandford, monobasic. Synonymy: Wood 1977c: 383.
References: (**tx**) Blandford 1897a: 161; Hagedorn 1910a: 38, 1910d: 30; Wood, S. L. 1977c: 383.

Comesiella DelGuercio 1925b: 218. Type-species: *Comesiella sicula* DelGuercio = *Phloeophthorus pubifrons* Guillebeau, monobasic. Synonymy: Balachowsky 1949a: 112.
References: (**tx**) Balachowsky 1949a: 112; DelGuercio 1925b: 210–218, 1931: 63–74; Schedl 1962q: 489.

Neophloeotribus Eggers 1943a: 349. Type-species: Phloeotribus nubilus Blandford, subsequent designation by Wood 1983a: 648. Synonymy: Wood 1983a: 648.
References: (**tx**) Eggers 1943a: 349; Schedl 1962q: 488; Wood, S. L. 1983a: 648.

Dryotomicus Wood 1962: 76. Type-species: *Dryotomus puberulus* Chapuis, automatic. Synonymy: Wood 1982b: 256.
References: (**tx**) Wood, S. L. 1962: 76, 1982b: 256.

Keys: Blandford 1897a: 162, Wood 1982b: 257 for North America; Bright 1978: 92 for Canada; Pfeffer 1972b: 31 for Europe.

Notes: (1) The original spelling of *Phloiotribus* Latreille (1796: 50) was declared an inadvertent error in spelling by the International Commission on Zoological Nomenclature (ICZN 1979: 132). (3) Lacordaire 1866: 365 (*mexicanus* Lacordaire, nomen nudum, and *villosulus* Lacordaire, nomen nudum, have been cited by several authors but have never been validated or listed in synonymy). Wood 1992b: 80 (*Phloeotribus zimmermanni* Wickham 1916: 19 transferred to Curculionidae).

References: (**ay**) Nobuchi 1968a: 52; Schonherr 1970b. (**hb**) Barbey 1901: 65; Eichhoff 1881a: 39, 147; Morris 1850a: 144–145, 1850b: 502–503, 1860a: 130–131, 1860b: 118–120; Tredl 1907: 7; Wood, S. L. 1986a: 49. (**ds**) Postner 1974: 390; Wood, S. L. 1982b: 256–281, 1986a: 49. (**tx**) Arnett 1960: 1041, 1968: 1041; Balachowsky 1949a: 105–107; Bedel 1888b: 389, 394; Blackman 1943c: 384; Blanchard 1845; Blandford 1897a: 162; Bright 1978: 92; Chapuis 1869: 43, 1873: 251; DelGuercio 1913: 59–75; Eggers 1940: 123–141; Eichhoff 1864b: 29, 44, 46, 1881a: 104, 1883a: 104; Erichson 1836: 56; Hagedorn 1910a: 39, 1910d: 30; Holthius 1976; Jacquelin du Val & Fairmaire 1868: 102; Lacordaire 1866: 364; Latreille 1796: 50, 1803: 204, 1804: 108, 1807: 280, 1810: 224, 1829: 92; LeConte 1868: 168, 1876: 376; LeConte & Horn 1883: 522; Lintner 1885b: 575, 1887a: 837, 1887b: 77–125; Lucas 1920: 504; Pfeffer 1982a: 465, 1989a: 31; Postner 1974: 390; Reitter 1894: 47, 1913: 32; Schedl 1962q: 487, 1981b: 46; Stark 1952: 294–296; Spessivtsev 1931a: 84; Swaine 1909: 130–131, 1911: 22; Winkler 1932: 1640; Wood, S. L. 1967b: 79–97, 1969c: 120–122, 1975c: 122, 1977c: 383, 1982b: 256–281, 1986a: 49; Zimmermann 1868: 147–148.

***acaciae* (Lea)** 1910: 146 (*Phloeophthorus*). Syntypes, sex?; Tasmania; SAM, Adelaide.
Distribution: Australia (New South Wales/ Tasmania/ Victoria).
Hosts: *Acacia* sp.
Notes: (3) Schedl 1958i: 216 (erroneously treated this species in *Xylechinus*).
References: (**ds**) Schedl 1936g: 523. (**tx**) Lea 1910: 146; Schedl 1936g: 523, 1958i: 214, 216.

***amplus* Wood** 1977c: 390. Holotype ♂; La Carbonera Experimental Forest, 50 km NW Merida, Merida, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
References: (**tx**) Wood, S. L. 1977c: 390.

***argentinae* Blackman** 1943c: 386. Holotype ♀; El Quemado, Argentina; USNM, Washington.
Figures: Blackman 1943c:figs. 28–30.
Distribution: South America (Argentina).
References: (**ds**) Blackwelder 1947: 785; Schedl 1973d: 161. (**tx**) Blackman 1943c: 386; McNamara 1984: 753; Schedl 1951m: 82–83.

***argentinensis* (Schedl)** 1952a: 447 (*Phthorophloeus*). Syntypes ♀; Misiones, Argentina, Prov. Concep., Sta Maria; Schedl Collection in NHMW, Wien, and Viana Collection.
Distribution: South America (Argentina).
Notes: (1) Schedl 1979c: 25 (citation of holotype invalid).
References: (**hb**) Viana 1964: 126. (**ds**) Schedl 1978c: 291; Viana 1964: 126. (**tx**) Schedl 1952a: 447, 1979c: 25.

***armatus* Blandford** 1897a: 166. Holotype ♂; Volcan de Chiriqui, Panama; BMNH, London.
Figures: Bright 1972b: 1490.
Distribution: North America (Guatemala/ Honduras/ Oaxaca in Mexico/ Panama), South America (Colombia).
References: (**hb**) Wood, S. L. 1982b: 276. (**ds**) Beaver 1973b; Blackwelder 1947: 785; Hagedorn

1903b: 546, 1910d: 30; Kleine 1912b: 188, 1914b: 359; Wood, S. L. 1982b: 276. (**tx**) Blandford 1897a: 166; Eggers 1933b: 2, 4; Hagedorn 1903b: 546, 1910a: 40; Wood, S. L. 1973: 180, 1982b: 276.

mixtecus Bright 1972b: 1494. Holotype ♀; 26 miles S Juchatengo, Oaxaca, Mexico; CNCI, Ottawa. Synonymy: Wood 1973c: 181.
References: (**tx**) Bright 1972b: 1490, 1494; McNamara 1977: 197; Wood, S. L. 1973c: 180–181.

***asperulus* Eggers** 1943a: 353. Holotype ♀; Bolivia (Cochabamba); Eggers Collection, holotype and 2 Eggers cotypes in NHMW, Wien.
Distribution: South America (Bolivia).
References: (**tx**) Eggers 1943a: 353.

***atavus* Wood** 1969b: 6. Holotype ♀; Laguna Volcan Poas, Heredia Prov., Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: *Clusia* sp., *Podocarpus oleifolius*.
References: (**hb**) Wood, S. L. 1982b: 262. (**ds**) Wood, S. L. 1982b: 262. (**tx**) Wood, S. L. 1969b: 6, 1982b: 262.

***biguttatus* Blandford** 1897a: 169. Holotype ♂; Bugaba, Chiriqui, Panama; BMNH, London.
Distribution: North America (Panama), South America (Colombia/ Venezuela).
Hosts: *Brosimum* sp.
References: (**hb**) Wood, S. L. 1982b: 277. (**ds**) Blackwelder 1947: 785; Hagedorn 1910d: 30; Kleine 1912b: 188, 1914b: 359; Wood, S. L. 1982b: 277. (**tx**) Blandford 1897a: 169; Hagedorn 1910a: 40; Wood, S. L. 1982b: 277.

***brasiliensis* (Schedl)** 1951m: 85 (*Phthorophloeus*). Holotype ♀?; Brasilien, Bahia, Cachoeirinha-Una; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1951m: 85.

***brevicollis* (Kolenati)** 1846: 38 (*Hylesinus*). Syntypes, sex?; Iberia et Armenia; Acad. Petropoli.
Figures: Grune 1979: 40.
Distribution: Asia (Turkey), Europe (Hungary/ W USSR).
Hosts: *Colutea arborescens*, *Fagus orientalis*, *Olea europea*.
References: (**bv**) Grune 1979: 45. (**ec**) Wichmann 1916: 14. (**hb**) Stark 1952: 299; Wichmann 1916: 14. (**ds**) Endrodi 1958b; Fedorov 1930; Grune 1979: 45; Hagedorn 1910d: 32; Heyden, Reitter, & Weise 1883: 181, 1891: 669, 1906: 708; Kleine 1912b: 189, 1934a: 137; Kolenati 1846: 38; Lacordaire 1866: 363; Luigioni 1929: 991; Mirzoian 1950: 140; Pfeffer 1982a: 465; Postner 1974: 392; Reitter 1894a: 48; Schaufuss 1915: 1217; Schedl 1959h: 100, 1971b: 426; Stark 1952: 299; Stein & Weise 1877: 164. (**tx**) Endrodi 1957a, 1957b, 1973: 233; Gemminger & Harold 1872: 2674; Grune 1979: 40, 45; Hagedorn 1910a: 42; Kolenati 1846: 38; Lacordaire 1866: 363; Luigioni 1929: 991; Pfeffer 1955a: 131, 1982a: 465; Postner 1974: 392; Reitter 1894a: 48, 1913a: 33; Schedl 1934f: 1640, 1962q: 489; Stark 1952: 299; Wichmann 1916: 14, 1916b: 432–433. (**ms**) Endrodi 1973.

***caucasicus* Reitter** 1891a: 32. Syntypes, sex?; Araxesthal bei Ordubad; NHMB, Budapest.
Figures: Stark 1952: 295 (female head), Swaine 1911a: 224 (antenna, metatibia).
Distribution: Europe (W USSR).
Hosts: *Fraxinus excelsior*.
References: (**bv**) Barr, B. A. 1969: 642; Grune 1979: 41. (**cn**) Gentry, J. W. 1965: 110; Greckin 1956: 1482; Iyriboz 1940b: 52; Kholodkovskii 1912: 293; Morris, H. M. 1937: 22. (**ec**) Kleine 1908c: 178, 1944: 78; Meyer 1934: 616; Nuorteva 1957b: 52; Thompson, W. R. 1943: 87. (**hb**) Eggers 1906; Greckin 1956: 1482; Iyriboz 1940b: 52; Kholodkovskii 1912: 293; Postner 1974: 390; Spessivtsev 1913a: 46; Stark 1952: 294; Zvierezomb & Zubovsky 1918. (**ds**) Eggers 1906; Gentry, J. W. 1965: 110; Georghiou 1977: 74; Grune 1979: 41; Hagedorn 1910d: 30; Heyden, Reitter, & Weise 1891: 669, 1906: 708; Kadyrov 1988: 43, 45, 1989; Kleine 1912b: 188, 1913a: 89, 1934a: 137; Mirzoian 1950: 140; Pfeffer 1989a: 31; Pjatnitskii 1930a: 163; Reitter 1894a: 47; Stark 1927b: 86, 1952: 294; Tredl 1907: 7. (**tx**) Grune 1979: 40–41; Hagedorn 1910a: 40; Reitter 1891a: 32–33, 1894a: 47, 1913a: 32; Schedl 1934f: 1640; Spessivtsev 1913a: 46; Stark 1952: 274; Swaine 1911a: 22.

***championi* (Blandford)** 1897a: 161 (*Eulytocerus*). Holotype ♂; Volcan de Chiriqui, Chiriqui, Panama, 3500–4000 ft.; BMNH, London.
Distribution: North America (Costa Rica/ Panama).
References: (**ds**) Blackwelder 1947: 785; Hagedorn 1910d: 30; Kleine 1912b: 187, 1914b: 358; Wood, S. L. 1982b: 261. (**tx**) Blandford 1897a: 161; Hagedorn 1910a: 39; Hopkins 1914: 121; Schedl 1935h: 344; Wood, S. L. 1977c: 383, 387, 1982b: 261.

substriatus Schedl 1935h: 344 (*Eulytocerus*). Holotype ♂; Costa Rica, Turrialba, 800 m; Schedl Collection in NHMW, Wien. Synonymy: Wood 1977c: 387.
References: (**ds**) Blackwelder 1947: 785. (**tx**) Schedl 1935h: 344, 1979c: 244; Wood, S. L. 1977c: 387.

***collaris* Chapuis** 1869: 46. Holotype, sex?; Nouvelle-Grenade; IRSNB, Brussels.
Distribution: South America (Venezuela).
Hosts: *Clusia* sp.
References: (**ds**) Blackwelder 1947: 785; Hagedorn 1910d: 30; Kleine 1912b: 188, 1914b: 341. (**tx**) Chapuis 1869: 46, 1873: 254; Gemminger & Harold 1872: 2676; Hagedorn 1910d: 40.

***contortus* Schedl** 1973d: 167. Holotype ♀?; Brasilien, Amazonas, Maturaca, alto Rio Cauaburi; MZUSP, Sao Paulo.

Distribution: South America (Brazil).
References: (**tx**) Schedl 1973d: 167.

***contractus* Chapuis** 1869: 46. Holotype, sex?; Bresil; IRSNB, Brussels.
Distribution: South America (Brazil).
References: (**ds**) Blackwelder 1947: 785; Kleine 1912b: 188, 1914b: 336; Schedl 1972g: 41. (**tx**) Chapuis 1869: 46, 1873: 254; Gemminger & Harold 1872: 2676.

***crenatus* (Guillebeau)** 1893: 64 (*Elzearius*). Syntypes, sex?; Nord de la Hongrie; not located.
Distribution: Europe (Hungary).
References: (**ds**) Schilsky 1909: 187. (**tx**) Guillebeau 1893: 64; Hopkins 1914: 121; Schedl 1934f: 1641.

***cristatus* (Fauvel)** 1889: 71 (*Phloeophthorus*). Syntypes, sex?; Europe; MNHN, Paris.
Figures: Balachowsky 1949a: 114, Kalina 1970: 119–120.
Distribution: Africa (Algeria), Europe (Corsica/ France/ Italy/ Spain/ Switzerland/ Yugoslavia).
Hosts: *Spartium junceum, Retama* sp., *Genista* sp., *Calycotoma* sp.
Notes: (3) Guillebeau 1893 (named aberrations as varieties *corsicus, lineigera, mayeti, pubifrons, sharpi,* no status).
References: (**cn**) Grandi 1951. (**ec**) Novak, P. 1952: 415; Wichmann 1916: 14. (**hb**) Grandi 1951; Russo 1932: 87–113; Wichmann 1916: 14. (**ds**) Balachowsky 1949a: 112; Barthe 1896; Ganglbauer 1904; Hagedorn 1910d: 32; Heyden, Reitter, & Weise 1906: 705; Kleine 1912b: 189, 1914a: 16, 1934a: 137; Langhoffer 1915c: 156; Luigioni 1929: 991; Novak, P. 1952: 415, 1964; Pfeffer 1947d: 126; Pittioni 1943: 176; Reitter 1894a: 49; Sainte-Claire & Mequignon 1938: 446; Schaufuss 1915: 1217; Tredl 1907: 7. (**tx**) Balachowsky 1949a: 112; Eggers 1941c: 120; Fauvel 1889: 71; Guillebeau 1893; Hagedorn 1910a: 42; Hoffmann 1942: 74; Kalina 1970: 119–120; Luigioni 1929: 991; Pfeffer 1955a: 131, 1972: 39; Reitter 1894a: 49, 1913a: 36; Schedl 1934f: 1640, 1962q: 489; Wichmann 1916: 14.

helveticus Guillebeau 1893: 60 (*Phloeophthorus*). Syntypes, sex?; Valais, Sierre, Switzerland; not located. Synonymy: Balachowsky 1949a: 112, Pfeffer 1972b: 39.
References: (**ds**) Barthe 1896; Luigioni 1929: 991; Schaufuss 1915: 1217. (**tx**) Balachowsky 1949a: 112; Guillebeau 1893: 60; Luigioni 1929: 991; Pfeffer 1955a: 131, 1972b: 39; Reitter 1913a: 34; Schedl 1934f: 1640.

latus Wichmann 1916: 14 (*Phloeophthorus*). Syntypes, sex?; St. Andraa bei Rovigno; not given. Synonymy: Pfeffer 1972b: 39.
References: (**ec**) Novak, P. 1952: 415; Ruschka 1916: 29; Szczepanski 1960a: 409; Wichmann 1916: 14. (**hb**) Wichmann 1916: 14. (**ds**) Kleine 1934a: 137; Luigioni 1929: 991; Novak, P. 1952: 415; Pfeffer 1947d: 128; Pittioni 1943: 176; Schedl 1967c: 69. (**tx**) Luigioni 1929: 991; Pfeffer 1955a: 131, 1972b: 39; Schedl 1934f: 1640, 1958k: 141; Wichmann 1916: 14, 1916b: 432–433.

geschwindi Seitner 1920: 283 (*Phloeophthorus*). Syntypes, sex?; Heimat; not located. Synonymy: Pfeffer 1972b: 39.
References: (**ds**) Luigioni 1929: 991; Pfeffer 1935: 158. (**tx**) Luigioni 1929: 991; Pfeffer 1955a: 131, 1972b: 39; Schedl 1934f: 1640; Seitner 1920: 283.

ovalis Eggers 1941c: 120 (*Phloeophthorus*). Holotype, sex?; Mallorca (Balearen); Eggers Collection, holotype and 2 Eggers cotypes in Schedl Collection in NHMW, Wien. Synonymy: Pfeffer 1972b: 39.
References: (**tx**) Eggers 1941c: 120; Pfeffer 1972b: 39.

pectinicornis Balachowsky 1949a: 116. Syntypes, sex?; France; MNHN, Paris. Synonymy: Schedl 1958k: 142, Pfeffer 1972b: 39.
References: (**tx**) Balachowsky 1949a: 116; Pfeffer 1972b: 39; Schedl 1958k: 141–142.

***cylindricus* Schedl** 1951m: 82. Syntypes ♀; Brasilien, Santa Catarina, Nova Teutonia; Schedl Collection in NHMW, Wien, and Plaumann Collection.
Distribution: South America (Argentina/ Brazil).
Notes: (1) Schedl 1979c: 74 (citation of holotype invalid).
References: (**hb**) Viana 1964: 127. (**ds**) Viana 1964: 127. (**tx**) de Ruette 1970: 105; Schedl 1951m: 82, 1958f: 34, 1979c: 74.

***demessus* Blandford** 1897a: 165. Lectotype ♀; Toxpam or Tuxpan, Mexico; BMNH, London, designated by Wood 1982b: 275.
Distribution: North America (Costa Rica/ Chihuahua, Jalisco, Veracruz in Mexico/ Panama).
Hosts: *Croton* sp.
References: (**bv**) Kirkendall 1984. (**hb**) Atkinson & Equihua 1985b: 230; Kirkendall 1984; Wood, S. L. 1982b: 275. (**ds**) Atkinson 1989a: 59; Atkinson & Equihua 1985b: 230; Blackwelder 1947: 785; Ferrer 1942; Hagedorn 1910d: 30; Kleine 1912b: 188, 1914b: 349, 359; Wood, S. L. 1982b: 275. (**tx**) Blandford 1897a: 165; Hagedorn 1910a: 40; Schedl 1940a: 337; Wood, S. L. 1969b: 7, 1973c: 181, 1982b: 275.

tuberculatus Eggers 1951: 147. Holotype ♀; Costa Rica (Turrialba); USNM, Washington, preoccupied by Eggers 1943a: 348. Synonymy: Wood 1973c: 181.
References: (**tx**) Eggers 1951: 147; Schedl 1962q: 487; Wood, S. L. 1973c: 181.

eggersi Schedl 1962q: 487. Holotype ♀; Costa Rica (Turrialba); USNM, Washington, automatic. Synonymy: Wood 1973c: 181.

References: (**tx**) Schedl 1962q: 487; Wood, S. L. 1973c: 181.

***dentifrons* (Blackman)** 1921: 3 (*Phthorophloeus*). Syntypes ♀: A. & M. College (Starkville), Mississippi and SMUK, Lawrence, Kansas [USA]; USNM, Washington.
Distribution: North America (District of Columbia, Florida, Illinois, Kansas, Louisiana, Michigan, New Jersey, New Mexico, New York, North Carolina, North Dakota, Pennsylvania, South Carolina, Texas, Virginia, West Virginia in USA).
Hosts: *Celtis occidentalis*, *C.* sp., *Condalia obtusifolia*.
References: (**cn**) Anonymous 1971e, 1972k; Blackman 1950; Doane et al. 1936. (**ec**) Burks 1979: 856; Bushing 1965: 463. (**hb**) Baker, W. L. 1972: 240; Beal & Massey 1945: 76–80; Blackman 1922b, 1950; Chamberlin 1939: 143; Deyrup & Atkinson 1987a: 64; Doane et al. 1936; Drooz 1985: 350; Wood, S. L. 1982b: 272. (**ds**) Atkinson et al. 1991: 146; Beal & Massey 1945: 76–80; Blackman 1922b, 1950; Chamberlin 1939: 143; Deyrup 1981b: 4; Deyrup & Atkinson 1987a: 64; Dodge 1938: 25–26; Drooz 1985: 350; Furniss, R. L. & Carolin 1977: 370; Kleine 1934a: 138; Leng & Mutchler 1927: 51; Wood, S. L. 1982b: 272. (**tx**) Beal & Massey 1945: 76–80; Blackman 1921: 3, 1922b; Chamberlin 1939: 143; Dodge 1938: 25–26; de Ruette 1970: 107; Wood, S. L. 1982b: 272.

***despectus* Schedl** 1966f: 98. Holotype ♀; Venezuela; Schedl Collection in NHMW, Wien.
Distribution: South America (Venezuela).
References: (ds) Schedl 1966f: 79. (**tx**) Schedl 1966f: 98.

***destructor* Wood** 1969b: 123. Holotype ♂; Morelia, Michoacan, Mexico; Wood Collection.
Distribution: North America (Michoacan, Morelos in Mexico).
Hosts: *Prunus persica, P. serotina, P.* sp.
References: (**hb**) Atkinson et al. 1986: 21; Burgos & Saucedo 1983: 62; Wood, S. L. 1982b: 271. (**ds**) Atkinson & Equihua 1985a: 76, 1985b: 230; Atkinson et al. 1986: 21; Burgos & Saucedo 1983: 62; Wood, S. L. 1982b: 271. (**tx**) Wood, S. L. 1969b: 123–124, 1982b: 271.

***discrepans* Blandford** 1897a: 163. Holotype ♀; Volcan de Chiriqui, Panama; BMNH, London.
Distribution: North America (Guatemala/ Chiapas, Morelos in Mexico/ Panama).
Hosts: *Prunus persica*.
References: (**hb**) Atkinson et al. 1986: 21. (**ds**) Atkinson et al. 1986: 21; Blackwelder 1947: 785; Hagedorn 1910d: 31; Kleine 1912b: 188, 1914b: 358. (**tx**) Blandford 1897a: 163; Eggers 1942a: 16; Hagedorn 1910a: 40; Wood, S. L. 1969b: 163, 1982b: 264.

***erinaceus* Schedl** 1973d: 168. Holotype ♀?; Brasilien, Sao Paulo, Itu, Fazenda Pau d'Alho; MZUSP, Sao Paulo.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1973d: 168.

***erosus* Schedl** 1951m: 83. Syntypes ♀; Brasilien, Santa Catarina, Nova Teutonia; Schedl Collection in NHMW, Wien, and Plaumann Collection.
Figures: Schedl 1951m: 84 (adult).
Distribution: South America (Argentina/ Brazil).
Notes: (1) Schedl 1979c: 91 (citation of holotype invalid).
References: (**ds**) Schedl 1973a: 366, 1973d: 152, 1976a: 50. (**tx**) Schedl 1951h: 284, 1951m: 83, 1979c: 91.

***fici* Wood** 1977c: 393. Holotype ♂; Universidad de los Andes Campus, Merida, Merida, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Ficus* sp. (strangler fig).
References: (**tx**) Wood, S. L. 1977c: 393.

***fraxini* (Eggers)** 1913c: 239 (*Phloeophthorus*). Syntypes 4, sex?; Algeria (Bougie); 2 syntypes in Eggers Collection, in NHMW, Wien.
Distribution: Africa (Algeria).
Hosts: *Fraxinus oxyphilla*.
References: (**hb**) Peyerimhoff 1915: 60. (**ds**) Kleine 1914a: 16; Nunberg 1964a: 234; Pfeffer 1935: 158, 1947d: 127. (**tx**) Eggers 1913c: 239; Pfeffer 1955a: 131; Schedl 1934f: 1640.

***frontalis* (Olivier)** 1795b: 13 (*Scolytus*). Syntypes, sex?; Amerique septentrionale; MNHN, Paris, not located.
Figures: Swaine 1911a: 224 (antenna, metatibia).
Distribution: North America (Guanajuato in Mexico/ Alabama, District of Columbia, Georgia, Illinois, Indiana, Iowa, Kansas, Louisiana, Maryland, Michigan, Mississippi, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, West Virginia in USA).
Hosts: *Celtis occidentalis, Morus alba, M. rubra*.
References: (**ay**) Hopkins 1894g. (**bv**) Turnbow & Franklin 1980. (**cn**) Anonymous 1970r, 1971n; Blackman 1950; Doane et al. 1936; Packard 1890: 612; Smith, J. B. 1900: 364; Swaine 1918a: 59. (**ec**) Ashmead 1896: 233; Burks 1979: 791; Bushing 1965: 463; Chittenden 1893d: 249, 1898: 78, 1901; Deyrup 1981b: 4; Felt 1906: 336, 725; Marsh 1979: 146; Muesebeck 1936: 10; Pierce, W. D. 1908: 386; Solomon 1968: 1024; Thompson, W. R. 1943: 86. (**hb**) Atkinson & Equihua 1985a: 76; Baker, W. L. 1972: 240; Blackman 1922b: 53–55, 1950; Chamberlin 1939: 142; Chittenden 1890; Deyrup & Atkinson 1987a: 64; Doane et al. 1936; Felt 1906: 725; Hopkins 1894g: 280; Keen 1929a: 297, 1933b: 297; Kirkendall 1984: 239; Packard 1890: 612; Swaine 1918a: 59; Wood, S. L. 1982b: 270. (**ds**) Anonymous 1926c:

515; Atkinson & Equihua 1985a: 76; Atkinson et al. 1991: 156; Beal & Massey 1945: 76–80; Blackman 1922b: 53–55, 1950; Blatchley & Leng 1916: 657; Britton 1920a; Chamberlin 1939: 142; Chittenden 1890; Dejean 1821, 1825, 1837; Deyrup 1981b: 4; Deyrup & Atkinson 1987b: 68; Hagedorn 1910d: 31; Hamilton 1895a: 378; Henshaw 1885: 149; Hopkins 1893a: 142–144, 148, 1893b: 213, 1903e: 320, 1905b: 78; Kirk 1969, 1970; Kleine 1912b: 188, 1914b: 341, 392, 1934a: 138; Leng 1920: 338; Leonard 1928: 515; Melsheimer 1853: 87; Riley 1894: 227; Smith, J. B. 1900: 364, 1910: 403; Swaine 1909: 131; Turnbow & Franklin 1980; Wickham 1916: 19; Wood, S. L. 1982b: 270. (**tx**) Blackman 1921: 3–4, 1922b: 53–55; Blatchley & Leng 1916: 657; Bruck 1936a; Chamberlin 1939: 142; Dejean 1821, 1825; Eichhoff 1896: 608; Fabricius 1801: 389; Gemminger & Harold 1872: 2676; Hagedorn 1910a: 40; Hopkins 1905b: 77; Jacques 1951: 349; LeConte 1876: 377; Olivier 1795b: 13; Schwarz 1895: 146; Swaine 1909: 131, 1911: 220, 1918a: 59; Wood, S. L. 1972c: 151, 1982b: 270; Zimmermann 1868: 148.

granicollis Eichhoff 1868c: 149 (*Phloeophthorus*). Lectotype ♂; published Am. bor., type labeled Carolina boreale; USNM, Washington, designated by Wood 1982b: 270. Synonymy: LeConte 1876: 377, Eichhoff 1896: 608.
References: (**ds**) Leng 1920: 338; Swaine 1909: 131. (**tx**) Chapuis 1869: 43, 1873: 251; Eichhoff 1868c: 149, 1896: 608; Gemminger & Harold 1872: 2675; LeConte 1868: 177, 1876: 377; Swaine 1909: 131; Wood, S. L. 1982b: 270.

moriperda Hopkins 1905b: 77 (*Phloeophthorus*). Lectotype ♀; Irapuato, Guanajuato, Mexico; USNM, Washington, designated by Wood 1972c: 151. Synonymy: Wood 1972c: 151.
References: (**ds**) Blackwelder 1947: 785; Ferrer 1942; Hagedorn 1910d: 33; Kleine 1912b: 189, 1914b: 349. (**tx**) Hagedorn 1910a: 40; Hopkins 1905b: 77; Schedl 1940a: 337, 1950i: 146; Wood, S. L. 1972c: 151.

***furvus* Wood** 1969b: 124. Holotype ♂; Turrialba, Cartago Prov., Costa Rica; Wood Collection.
Distribution: North America (Costa Rica/ Guatemala/ Panama).
Notes: (3) Blandford 1897a: 165 (erroneously treated this species under *P. sulcifrons*).
References: (**hb**) Wood, S. L. 1982b: 280. (**ds**) Atkinson & Equihua 1985b: 230; Kleine 1914b: 358–359; Wood, S. L. 1982b: 280. (**tx**) Wood, S. L. 1969b: 124, 1982b: 280.

***geminus* Wood** 1983a: 657. Holotype ♂; Acatlan, Jalisco, Mexico; Wood Collection.
Distribution: North America (Jalisco in Mexico).
Hosts: *Ficus* sp.
References: (**ec**) Equihua & Atkinson 1986: 625. (**hb**) Equihua & Atkinson 1986: 625. (**ds**) Equihua & Atkinson 1986: 625. (**tx**) Wood, S. L. 1983a: 657.

***harringtoni* Blackman** 1943a: 388. Holotype ♀; Aguaray, Argentina; USNM, Washington.
Distribution: South America (Argentina).
References: (**ds**) Blackwelder 1947: 785. (**tx**) Blackman 1943a: 388.

***hebes* Schedl** 1978c: 294. Holotype ♂; Brasilien, Encruzilhada; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1978c: 294.

***hercegovinensis* (Seitner)** 1920: 284 (*Phloeophthorus*). Syntypes, sex?; Herzegovina (Yugoslavia); not located.
Distribution: Europe (Bulgaria/ Greece/ Yugoslavia).
Hosts: *Cytisus veldeni*.
References: (**ds**) Pfeffer 1935: 158, 1947a: 129, 1982a: 465; Schedl 1967c: 69. (**tx**) Pfeffer 1955a: 130; Schedl 1934f: 1640; Seitner 1920: 284.

***hirtellus* Schedl** 1966f: 99. Holotype ♀; Venezuela; Schedl Collection in NHMW, Wien.
Distribution: South America (Venezuela).
References: (**ds**) Schedl 1966f: 79. (**tx**) Schedl 1966f: 99.

***hirtus* Wood** 1977c: 393. Holotype ♂; Caparrapi, Cunadin, Colombia; Wood Collection.
Distribution: South America (Colombia).
Hosts: Arbol de Sangregao.
References: (**tx**) Wood, S. L. 1977c: 393.

***hispidulus* Eggers** 1934a: 78. Holotype, sex?; Venezuela; Hamburg Museum, lost; neotype ♂; Venezuela; designated by Schedl 1979c: 118 from 1 of 2 Eggers cotypes in NHMW, Wien.
Distribution: South America (Venezuela).
References: (**ds**) Blackwelder 1947: 785. (**tx**) Eggers 1934a: 78, 1940a: 123; Schedl 1979c: 118.

***huapiae* (Schedl)** 1979e: 59 (*Phthorophloeus*). Holotype ♀; Nahuel Haupi National Park, Argentina; Schedl Collection in NHMW, Wien.
Distribution: South America (Argentina).
References: (**ay**) Naumann-Etienne 1978b. (**hb**) Naumann-Etienne 1978b. (**ds**) Naumann-Etienne 1978b. (**tx**) Schedl 1979e: 59.

***hylurgulus* Schedl** 1959i: 405. Holotype, sex?; Peru: Huaraz; Frey Museum, Tutzing [now in NHMBS, Basel].
Distribution: South America (Peru).
References: (**tx**) Schedl 1959i: 405.

***hystrix* Wood** 1969b: 7. Holotype ♂; Rio Damitas in the Dota Mts., San Jose Prov., Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
References: (**hb**) Wood, S. L. 1982b: 260. (**ds**) Wood, S. L. 1982b: 260. (**tx**) Wood, S. L. 1969b: 7, 1982b: 260.

***ingae* Wood** 1977c: 389. Holotype ♂; Bugo, Colombia; Wood Collection.
Distribution: South America (Colombia).
Hosts: *Inga* sp. (fruiting pods).
References: (**tx**) Wood, S. L. 1977c: 389.

***insularis* Eggers** 1940a: 123. Lectotype ♀; Guadeloupe (Trois-Rivieres); USNM, Washington, designated by Anderson & Anderson 1971: 16.
Distribution: Antilles Islands (Guadeloupe).
References: (**ds**) Bright 1981c: 115, 1985c: 171. (**tx**) Anderson, W. H. & Anderson 1971: 16; Bright 1985c: 171; Eggers 1934a: 78, 1940a: 123.

***jujuya* Blackman** 1943c: 389. Holotype ♀; Santa Clara, Jujuy, Argentina; USNM, Washington.
Distribution: South America (Argentina).
References: (**hb**) Viana 1964: 127. (**ds**) Blackwelder 1947; Viana 1964: 127. (**tx**) Blackman 1943c: 389; Schedl 1958f: 34.

***lecontei* Schedl** 1962q: 487. Holotype ♂; La Veta Pass, Colorado [USA]; MCZ, Cambridge, automatic.
Distribution: North America (Alberta, British Columbia in Canada/ California, Colorado, Idaho, Montana, New Mexico, Oregon, Utah, Washington, Wyoming in USA).
Hosts: *Abies lasiocarpa, Picea engelmannii, P. pungens, Pseudotsuga menziesii.*
References: (**ec**) Deyrup & Gara 1978: 275; Furniss, R. L. & Carolin 1977: 369; Marsh 1979: 157. (**hb**) Bright 1976b: 93; Furniss, M. M. & Johnson 1987: 378; Furniss, R. L. & Carolin 1977: 369; Wood, S. L. 1982b: 269. (**ds**) Bright 1976b: 93; Elias 1985: 39; Elias, Short, & Clark 1986; Furniss, M. M. & Johnson 1987: 379; Furniss, R. L. & Carolin 1977: 369; Gast et al. 1989: 385; Miller, R. F., Morgan, & Hicock 1985: 501; Wood, S. L. 1982b: 269. (**tx**) Bright 1962b: 93; Schedl 1962q: 487; Wood, S. L. 1982b: 269.

puberulus LeConte 1879: 519. Holotype ♂; La Veta Pass, Colorado [USA]; MCZ, Cambridge, preoccupied by Chapuis 1869: 46.
Notes: (3) Swaine 1911a: 231 (redescription).
References: (**cn**) Beckwith 1972a; Swaine 1918a: 59. (**ec**) Bright 1976a; Matthews 1970. (**hb**) Chamberlin 1939: 141, 1958: 63; Swaine 1918a: 59. (**ds**) Beckwith 1972a; Bedard 1938a; Chamberlin 1939: 141, 1958: 63; Henshaw 1882: 269, 1885: 149; Kleine 1912b: 188, 1914b: 397; Leng 1920: 338; Smith, G. S. 1930; Swaine 1909: 132; Wickham 1896a: 309; Wood, S. L. 1948: 18, 1951a: 127. (**tx**) Beckwith 1972a, 1972b; Bruck 1935: 126, 1936a; Chamberlin 1939: 141, 1958: 63; Gemminger & Harold 1872: 2676; LeConte 1879: 519; Schedl 1951m: 85, 1962q: 487; Swaine 1909: 132, 1911a: 221, 1918a: 59.

***levis* Wood** 1977c: 392. Holotype ♂; Piedras Blancas, 10 km E Medellin, Antioquia, Colombia; Wood Collection.
Distribution: South America (Colombia).
Hosts: "Graptero" tree.
References: (**tx**) Wood, S. L. 1977c: 392.

***liminaris* (Harris)** 1852a: 79 (*Tomicus*). Holotype ♀; New England [USA]; MCZ, Cambridge.
Figures: Blackman 1921:pl. 1, fig. 2 (adult), Bright 1976d: 196, Davidson & Lyon 1979: 423; Rexrode 1982: 390, Swaine 1911a: 224 (antenna, metatibia), Wilson 1909: 99 (all stages).
Distribution: North America (Manitoba, New Brunswick, Ontario, Quebec in Canada/ Connecticut, District of Columbia, Florida, Iowa, Kentucky, Maryland, Massachusetts, Michigan, Mississippi, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Virginia, West Virginia in USA).
Hosts: *Prunus americana, P. angustifolia, P. persica, P. serotina.*
References: (**ay**) Baker, B. H. 1964; DelGuercio 1931; Rexrode & Krause 1981. (**bv**) Baker, B. H. 1964; Rexrode 1981; Roling & Kearby 1975b, 1977; Turnbow & Franklin 1980. (**cn**) Alderman et al. 1913: 35; Baker, B. H. 1964: 187–194; Bentley 1930: 92; Blackman 1950; Brooks 1916: 6, 1917: 1–15; Chamberlin 1924, 1939: 144; Chandler 1939: 33, 1950: 18–19; Chandler & Flint 1935a: 10, 1939a: 10–12; Chittenden 1899b; Cockerell 1894; Cook 1891; Currie 1905: 19; Davidson & Lyon 1979: 423, 1987: 453; Davis 1895, 1896; DelGuercio 1925b, 1931; Devereaux 1881, 1883, 1884; Felt 1906: 452; Fletcher 1894: 7, 1896: 155, 1899, 1902: 242; Gentry, G. R. et al. 1980: 297, 1982: 302; Gossard 1908: 62, 301, 1909: 3, 81, 1911: 118, 1913: 31, 1914: 8; Hadley 1917: 125; Haldeman 1850; Harris 1855: 200, 206, 1863: 88, 1890: 88; Hoerner 1929: 449–465; Kleine 1932a: 297; Kovach & Gorsuch 1985; Kulman 1964a: 258–266; Linden 1882; Lindquist, O. H. & Syme 1981: 84; Lintner 1885b: 575, 1896: 270, 1887b: 111, 124, 1893: 365–368; MacNay & Creelman 1958: 17; Metcalf & Flint 1928: 602, 1939: 627, 1951: 700; Morris, M. H. 1850a: 144, 1850b: 502, 1860a: 131, 1860b: 119; Morschel 1972: 179; O'Kane 1914: 242; Packard 1890: 227, 590; Parrott 1912: 209; Peairs 1941: 334–335; Quaintance 1908: 122; Rexrode & Baumgras 1984; Riley 1881b: 515 (or 866); Roling & Kearby 1977; Sanderson 1912: 653, 1921: 582; Saunders 1883: 195; Schultz & Allen 1977; Slingerland 1893: 700; Smith, J. B. 1900: 364; Snow 1893: 365; Strickland 1916: 1099, 1922: 208; Swaine 1910d: 42, 1918a: 59–60; Syme & Nystrom 1988: 80; Talbert & Mumeek 1939: 160; Twigg 1911: 320; Webster 1891: 452, 1893: 111; Wilson 1909: 91–108. (**ec**) Burks 1979: 800; Bushing 1965: 464; Felt 1906: 452; Metcalf & Flint 1928: 602, 1939: 627, 1951: 700; Rexrode 1981; Rexrode & Baumgras 1984; Roling & Kearby 1977; Rose, A. H. & Lindquist 1982b: 248; Schultz & Allen 1975, 1977; Tomalak,

Welch, & Galloway 1989: 8. (**hb**) Baker, B. H. 1964; Baker, W. L. 1962: 240; Beal & Massey 1945: 76–80; Blackman 1922b: 55–56, 1950; Bright 1976d: 92; Caulfield 1891; Chamberlin 1939: 144; Chandler 1939; Chittenden 1899b; Davidson & Lyon 1979: 423, 1987: 453; DelGuercio 1931; Devereaux 1881; Deyrup & Atkinson 1987a: 64; Dillon & Dillon 1961: 807; Drooz 1985: 350; Essig 1942: 603; Felt 1906: 428, 452; Felt & Cockerell 1907: 217; Gossard 1913; Hopkins 1893a: 147, 1893b: 213, 1904b: 320; Keen 1933b: 297; Kirkendall 1984: 240; Kleine 1932a: 297; Lintner 1887b: 111, 124; Metcalf & Flint 1928: 602, 1939: 627, 1951: 700; Morschel 1972: 179; Morstatt 1924: 36, 38; Packard 1890: 227; Pierce 1907: 293; Rexrode 1982; Riley 1881b: 515 (or 866); Ross 1956: 342; Saunders 1883: 195; Schwarz 1888a: 113; Snow 1893: 365; Swaine 1910c: 58, 1918a: 59–60; Talbert & Murneek 1939: 160; Titus & Pratt 1904: 29; Wood, S. L. 1982b: 264; Zocchi 1956: 140–141. (**ds**) Anonymous 1926c: 515; Baker, B. H. 1964; Beal & Massey 1945: 76–80; Blackman 1922b: 55–56, 1950; Blatchley & Leng 1916: 657; Bright 1967d: 92; Caulfield 1891: 75; Chamberlin 1939: 144; Chandler & Flint 1935a; Chapuis 1869: 39, 1873: 247; Chittenden 1899b; Cockerell 1894: 69; Cockerell et al. 1907; Currie 1905; Davis 1896; Deyrup 1981b: 4; Deyrup & Atkinson 1987a: 64; Dodge 1938; Drooz 1985: 350; Hagedorn 1910d: 31; Henshaw 1885: 149; Hopkins 1893a: 141; Hubbard & Schwarz 1878a: 666; Kirk 1970; Kleine 1912b: 188, 1932a: 297, 1934a: 137; Leng 1920: 338; Leonard 1928: 515; Lindquist, O. H. & Syme 1981: 84; MacNay & Creelman 1958: 17; Quaintance 1908: 122; Razzauti 1956: 141; Schultz & Allen 1977; Schwarz 1888a: 113; Smith, J. B. 1900: 364, 1910: 403; Swaine 1909: 131, 1910c: 58; Syme & Nystrom 1988: 80; Turnbow & Franklin 1980; Ulke 1902: 56; Wood, S. L. 1982b: 264. (**tx**) Beal & Massey 1945: 76–80; Benoit 1985: 196; Blackman 1921: 4–5, 1922b: 55–56; Blatchley & Leng 1916: 657; Bright 1976d: 92, 196; Chamberlin 1939: 144; Chapuis 1869: 39, 1873: 247; Comstock 1948: 542; Davidson & Lyon 1979: 423; DelGuercio 1925b; Dillon & Dillon 1961: 801, 807; Dodge 1938: 16, 25; Drooz 1985: 350; Essig 1942: 603; Gemminger & Harold 1942: 2673; Hagedorn 1910a: 40; Harris 1852a: 79; Jacques 1951: 349; LeConte 1868: 148, 1876: 377; Lindquist, O. H. & Syme 1981: 84; Muesebeck 1942: 99, 1950: 136; Rexrode 1982: 390; Rexrode & Krause 1981: 760; Ross 1956: 342; Say 1826: 320; Schwarz 1889b: 113, 149; Swaine 1909: 131–132, 1911a: 220, 1911b: 81, 1913: 41–43, 1918a: 59–60; Syme & Nystrom 1988: 80; Wood, S. L. 1972c: 151, 1982b: 264; Zocchi 1956: 140–141. (**ms**) Slingerland 1893: 700.

mississippiensis Blackman 1921: 4 (*Phthorophloeus*). Lectotype ♀; Agric. Coll. (Starkville), Mississippi [USA], designated by Wood 1972c: 151. Synonymy: Wood 1972c: 151.
References: (**cn**) Blackman 1950. (**hb**) Baker, W. L. 1972: 240; Blackman 1921: 4–5, 1922b: 53, 1950; Chamberlin 1939: 143. (**ds**) Blackman 1950; Chamberlin 1939: 143; Kleine 1934a: 138; Leng & Mutchler 1927: 51. (**tx**) Blackman 1921: 4–5; Chamberlin 1939: 143; de Ruette 1970: 107; Wood, S. L. 1972c: 151.

***lineatus* Eggers** 1951: 148. Holotype ♀; Brasil (Blumenau); Eggers Colletion, in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Eggers 1951: 148.

***longipilus* Eggers** 1943a: 355. Holotype, sex?; Bolivia: Cochabamba; MNHN, Paris.
Distribution: South America (Bolivia).
References: (**tx**) Eggers 1943a: 355.

***major* Stebbing** 1907a: 36. Holotype, sex?; Assam, India; not at FRI, Dehra Dun, lost?
Distribution: Asia (Assam in India).
Notes: (1) This species obviously does not belong to this genus; the types are lost, consequently, the correct genus cannot be determined; it may be an Anobiidae.
References: (**tx**) Stebbing 1907a: 36.

***marginatus* Eggers** 1933a: 4. Holotype ♂; Venezuela (Colonia Tovar); MNHN, Paris.
Distribution: South America (Venezuela).
References: (**ds**) Blackwelder 1947; Schedl 1971f: 147. (**tx**) Eggers 1932: 2, 1933a: 4.

***maroccanus* (Guillebeau)** 1896: 152 (*Phloeophthorus*). Holotype ♂; Tanger; not located.
Distribution: Africa (Algeria/ Morocco).
Hosts: *Olea europea*, *Retama* sp.
References: (**hb**) Peyerimhoff 1915: 60. (**ds**) Escalera 1919; Hagedorn 1910d: 32; Kleine 1912b: 189, 1914a: 16, 18; Pfeffer 1947d: 127. (**tx**) Guillebeau 1896: 152, Hagedorn 1910a: 42; Pfeffer 1955a: 131; Reitter 1913a: 35; Schedl 1934f: 1640.

***maurus* Wood** 1969b: 6. Holotype ♂; near Rincon, Osa Peninsula, Puntarenas Prov., Costa Rica; Wood Collection.
Distribution: North America (Costa Rica/ Veracruz in Mexico).
Hosts: *Ficus* sp.
References: (**hb**) Atkinson & Equihua 1986a: 419; Wood, S. L. 1982b: 279. (**ds**) Atkinson & Equihua 1986a: 419; Wood, S. L. 1982b: 279. (**tx**) Wood, S. L. 1969b: 6, 1982b: 279.

***mayeti* (Guillebeau)** 1893: 62 (*Phloeophthorus*). Holotype, sex?; Oran (Algeria); not located.
Distribution: Africa (Algeria).
Hosts: *Fraxinus* sp., *Pistacia* sp.
Notes: (3) Pjatnitskii 1934: 636 (*asiaticus*, nomen nudum, synonymy in Pfeffer 1972b: 44). Pfeffer 1972b: 43 (*pistaciae* Wichmann, nomen nudum, synonymy).
References: (**ds**) Hagedorn 1910d: 33; Kleine

1914a: 16; Reitter 1894a: 49. (**tx**) Guillebeau 1893: 62; Pfeffer 1972b: 44; Pjatnitskii 1934: 636; Reitter 1894a: 49, 1913a: 36; Schedl 1934f: 1640.

***minor* Wood** 1977c: 391. Holotype ♂; 27 km NE Montoya, Santander, Colombia; Wood Collection.
Distribution: South America (Colombia).
Hosts: *Pseudoolmedia* sp.
References: (**tx**) Wood, S. L. 1977c: 391.

***muricatus* (Eggers)** 1929c: 9 (*Phloeophthorus*). Syntypes ♂ ♀; Bulgarien; Eggers Collection, in NHMW, Wien, and in Sokanovskii Collection.
Figures: Stark 1952: 297 (galleries).
Distribution: Europe (Bulgaria/ Hungary/ Romania).
Hosts: *Fraxinus ornus*.
References: (**hb**) Stark 1952: 297. (**ds**) Buresh & Lazarov 1956; Kleine 1934a: 137; Negru & Rosca 1967: 141; Pfeffer 1936: 90; Pjatnitskii 1930a: 162; Postner 1974: 392; Stark 1952: 297. (**tx**) Eggers 1929c: 9; Endrodi 1973: 233; Pfeffer 1955a: 131; Postner 1974: 392; Schedl 1934f: 1640; Stark 1952: 297.

***nahueliae* (Schedl)** 1979e: 59 (*Phthorophloeus*). Holotype ♀; Nahuel Huapi National Park, Argentina; Schedl Collection in NHMW, Wien.
Distribution: South America (Argentina).
Hosts: *Nothofagus dombeyi*.
References: (**ay**) Naumann-Etienne 1978b. (**hb**) Naumann-Etienne 1978b. (**ds**) Naumann-Etienne 1978b. (**tx**) Schedl 1979e: 59.

***nanus* Wood** 1974a: 8. Holotype ♂; 260 km N Xavantina, Mato Grosso, Brazil; BMNH, London.
Distribution: South America (Brazil).
References: (**hb**) Beaver 1973b. (**ds**) Beaver 1973b; Wood, S. L. 1974a: 8. (**tx**) Wood, S. L. 1974a: 8.

***nebulosus* Wood** 1977c: 390. Holotype ♂; Piedras Blancas, 11 km W Medellin, Antioquia, Colombia; Wood Collection.
Distribution: South America (Colombia).
Hosts: *Croton guianensis*.
References: (**tx**) Wood, S. L. 1977c: 390.

***neglectus* Schedl** 1964m: 303. Holotype, sex?; Bolivia: Cochabamba; USNM, Washington, automatic, replacement name for *eggersi* Schedl 1963i: 60.
Distribution: South America (Bolivia).
References: (**tx**) Schedl 1963i: 60, 1964m: 303.
striatus Eggers 1943a: 351. Holotype, sex?; Bolivia: Cochabamba; USNM, Washington, preoccupied by Eggers 1943a: 346.
References: (**tx**) Eggers 1943a: 351.
eggersi Schedl 1963i: 60. Holotype, sex?; Bolivia: Cochabamba; USNM, Washington, automatic, replacement name for *striatus* Eggers 1943, preoccupied by Schedl 1962q: 487.
References: (**tx**) Schedl 1963i: 60, 1964m: 303.

***nitidicollis* (Eggers)** 1943a: 347 (*Phthorophloeus*). Holotype, sex?; Bolivia (Cochabamba); USNM, Washington.
Distribution: South America (Bolivia).
References: (**tx**) Anderson, W. H. & Anderson 1971: 22; Eggers 1943a: 347.

***novateutonicus* (Schedl)** 1951m: 84 (*Phthorophloeus*). Syntypes ♀; Brasilien, Santa Catarina, Nova Teutonia; Schedl Collection in NHMW, Wien, and Plaumann Collection.
Distribution: South America (Argentina/ Brazil).
Notes: (1) Schedl 1979c: 172 (citation of holotype invalid).
References: (**ds**) Nunberg 1958a: 480. (**tx**) Nunberg 1958a: 480; de Ruette 1970: 107; Schedl 1951m: 84, 1958f: 34, 1979c: 172.

***nubilus* Blandford** 1897a: 163. Lectotype ♀; Cerro Zunil, Guatemala; BMNH, London, designated by Wood 1982b: 262.
Distribution: North America (Costa Rica/ Guatemala/ Veracruz in Mexico/ Panama).
References: (**ds**) Blackwelder 1947; Ferrer 1942; Hagedorn 1910d: 31; Kleine 1912b: 188, 1914b: 349, 358; Wood, S. L. 1982b: 262. (**tx**) Blandford 1897a: 163; Eggers 1940a: 123, 1942a: 16, 1943a: 344; Hagedorn 1910a: 40; Schedl 1940a: 337; Wood, S. L. 1982b: 262.

***opacicollis* Eggers** 1943a: 353. Holotype, sex?; Bolivia (Cochabamba); USNM, Washington.
Distribution: South America (Bolivia).
References: (**tx**) Anderson, W. H. & Anderson 1971: 23; Eggers 1943a: 353.

***opimus* Wood** 1969b: 7. Holotype ♂; Zamerano, Morazan, Honduras; Wood Collection.
Distribution: North America (Guatemala/ Honduras/ Jalisco, Morelos in Mexico).
Hosts: *Ficus* spp., *Celtis iguanae, Serjania triquetra*.
References: (**ec**) Equihua & Atkinson 1986: 625. (**hb**) Burgos & Saucedo 1983: 62; Equihua & Atkinson 1986: 625; Wood, S. L. 1982: 275. (**ds**) Burgos & Saucedo 1983: 62; Equihua & Atkinson 1986: 625; Wood, S. L. 1982b: 275. (**tx**) Wood, S. L. 1969b: 7, 1982b: 275.

***ovatus* (Eggers)** 1943a: 347 (*Dryotomus*). Holotype ♂; Bolivia (Cochabamba); USNM, Washington.
Distribution: South America (Bolivia).
References: (**tx**) Anderson, W. H. & Anderson 1971: 23; Eggers 1943a: 347.

***pacificus* Bright** 1982a: 128. Holotype ♀; Coco Island (Costa Rica); LACM, California.
Figures: Bright 1982a: 129.
Distribution: North America (Isla del Coco in Costa Rica).
References: (**tx**) Bright 1982a: 128–129.

***perfoliatus* (Wollaston)** 1854: 301 (*Phloeophthorus*). Syntypes 2, sex?; Maderae: Lombo das Vacas; BMNH, London.

Distribution: Africa (Madeira Island), Europe (Corsica/ Sardinia/ Spain).
Hosts: *Calycotome* sp., *Cytisus* sp.
References: (**ds**) Hagedorn 1910d: 33; Lacordaire 1866: 364; Stein 1868: 113; Stein & Weise 1877: 163; Wollaston 1854: 301, 1857: 99. (**tx**) Balachowsky 1949a: 115; Hopkins 1914: 126; Lacordaire 1866: 364; Letzner 1891: 374; Pfeffer 1972b: 34; Schedl 1934f: 1641; Wollaston 1854: 301, 1857: 99.

abeillei Guillebeau 1893: 58 (*Phloeophthorus*). Syntypes, sex?; Corse; not located. Synonymy: Pfeffer 1972b: 34.
References: (**ec**) Kleine 1908c: 179. (**ds**) Eggers 1912f; Hagedorn 1910d: 32; Heyden, Reitter, & Weise 1906: 708; Kleine 1912b: 189; Luigioni 1929: 991; Ragusa 1924: 114; Reitter 1894a: 48; Sainte-Claire 1914: 468; Sainte-Claire & Mequignon 1938: 446; Schaufuss 1915b: 1217; Tredl 1907: 7. (**tx**) Balachowsky 1949a: 112; Eggers 1912f; Guillebeau 1893: 58; Hagedorn 1910a: 42; Luigioni 1929: 991; Pfeffer 1972b: 34; Reitter 1894a: 48, 1913a: 33; Schedl 1934f: 1640.

***perniciosus* Wood** 1982a: 229. Holotype ♂; Patzucuaro-Ario de Rosales highway, Michoacan, Mexico; Wood Collection.
Distribution: North America (Michoacan, Morelos in Mexico).
Hosts: *Prunus serotina*.
References: (**hb**) Atkinson & Equihua 1985b: 230; Burgos & Saucedo 1983: 64. (**ds**) Atkinson & Equihua 1986: 230; Burgos & Saucedo 1983: 64; Wood, S. L. 1982a: 229. (**tx**) Wood, S. L. 1982a: 229.

***peruensis* Schedl** 1942: 67. Holotype ♂; Peru: Rio Toro; Schedl Collection in NHMW, Wien.
Distribution: South America (Peru).
Notes: (1) Schedl 1952h: 69 (1942 journal containing original description lost before mailing, reprinted in 1952h: 69).
References: (**tx**) Nunberg 1956a: 144; Schedl 1942: 67, 1952h: 64, 69.

***peyerimhoffi* (Eggers)** 1913c: 239 (*Phloeophthorus*). Syntypes 2 ♂; Algier; Eggers Collection, 1 in NHMW, Wien.
Distribution: Africa (Algeria/ Morocco), Europe (Spain).
Hosts: *Cytisus triflorus*, *Genista numidica*, *Retana bovei*.
Notes: (1) Schedl 1979c: 192 (citation of holotype invalid).
References: (**hb**) Peyerimhoff 1915: 60. (**ds**) Kleine 1914a: 16; Pfeffer 1947d: 127. (**tx**) Eggers 1913c: 239; Pfeffer 1955a: 130, 1982a: 466; Schedl 1934f: 1641, 1979c: 192.

***piceae* Swaine** 1911a: 220. Lectotype ♀; Ste. Anne de Bellevue, P. Q., Canada; CNCI, Ottawa, designated by Bright 1967b: 677.
Figures: Ashworth & Brophy 1972: 2983, Ashworth, Clayton, & Bickley 1972: 180, Swaine 1911a: 224 (antenna, metatibia).
Distribution: North America (Alaska/ Manitoba, Northwest Territories, Ontario, Quebec, Yukon in Canada/ Maine, Minnesota, New York in USA).
Hosts: *Picea glauca*.
References: (**ay**) Thomas, J. B. 1967. (**cn**) Blackman 1950; Chamberlin 1924; Doane et al. 1936; Hopkins 1901b: 11; Lindquist, O. H. & Syme 1981: 84; Syme & Nystrom 1988: 80; Swaine 1918a: 59; Swaine & Craighead 1924. (**ec**) Hopkins 1901b: 11; Tomalak, Welch, & Galloway 1989: 6; Werner & Holsten 1984. (**hb**) Blackman 1950; Bright 1976d: 94; Chamberlin 1939: 143; Doane et al. 1936; Hopkins 1901b: 11; Swaine 1918a: 59; Wood, S. L. 1982b: 270. (**ds**) Anonymous 1926c: 515; Ashworth 1977, 1980; Ashworth & Brophy 1972: 2984; Ashworth, Clayton, & Bickley 1972: 183; Ashworth & Cvancara 1983; Ashworth et al. 1981; Beaulne 1956; Blackman 1950; Blatchley & Leng 1916: 658; Bright 1976d: 94; Chamberlin 1925, 1939: 143; Dodge 1938: 15, 25–26; Elias 1982b, 1982d, 1983; Furniss, R. L. & Carolin 1977: 370; Kleine 1912b: 188, 1934a: 138; Leng 1920: 338; Leonard 1928: 515; Lindquist, O. H. & Syme 1981: 84; Miller, Fitzgerald, & Buhay 1987; Miller, R. F. & Morgan 1982; Morgan, Anne, Morgan, & Elias 1985; Morgan, A. V. & Morgan 1979, 1980: 1110; Schwert et al. 1985; Syme & Nystrom 1988: 80; Werner & Holsten 1984; Williams, N. E. et al. 1981; Wood, S. L. 1982b: 270. (**tx**) Ashworth & Brophy 1972: 2983; Ashworth, Clayton, & Bickley 1972: 180; Blatchley & Leng 1916: 658; Bright 1967b: 677, 1967d: 94, 1976d: 201, 208; Chamberlin 1939: 143; Dodge 1938; Hoebeke 1978; Lindquist, O. H. & Syme 1981: 84; de Ruette 1970: 106; Schwert & Morgan 1980; Schwert et al. 1985; Swaine 1911a: 220, 1918: 59; Syme & Nystrom 1988: 80; Thomas, J. B. 1967; Wood, S. L. 1982b: 270.

***picipennis* Eggers** 1943a: 352. Holotype ♂; Bolivia: Cochabamba; USNM, Washington.
Distribution: South America (Bolivia).
References: (**ds**) Pedrosa-Macedo & Schonherr 1985: 16; Schedl 1972g: 41, 1976a: 51. (**tx**) Anderson, W. H. & Anderson 1971: 25; Eggers 1943a: 352; Pedrosa-Macedo & Schonherr 1985: 16.

***pilula* (Erichson)** 1847: 138 (*Hylesinus*). Lectotype ♂; Peru; MNB, Berlin, designated by Wood 1973: 181.
Figures: Schedl 1953f: 80 (male).
Distribution: North America (Chiapas in Mexico), South America (Brazil/ Colombia/ Peru/ Venezuela).
Hosts: *Brosimum* sp.
References: (**ec**) Beaver 1973b. (**hb**) Beaver 1973b; Wood, S. L. 1982b: 280. (**ds**) Beaver 1973b; Blackwelder 1947; Hagedorn 1910d: 17;

Kleine 1912b: 171; Schedl 1960a: 77, 1966f: 80; Wood, S. L. 1982b: 280. (**tx**) Eggers 1929e: 52, 1943a: 350, 1951: 147; Erichson 1847: 138; Hagedorn 1910a: 49; Schedl 1952h: 69; Wood, S. L. 1973c: 181, 1977b: 209, 1982b: 280.

obliquus Chapuis 1869: 45. Syntypes, sex?; Mexique. Nouvelle Grenade; IRSNB, Brussels. Synonymy: Wood 1973c: 181.

References: (**ds**) Blackwelder 1947; Blandford 1897a; Ferrer 1942; Hagedorn 1910d: 31; Kleine 1912b: 188, 1914b: 341, 349. (**tx**) Blandford 1897a; Chapuis 1869: 45, 1873: 253; Gemminger & Harold 1872: 2676; Hagedorn 1910a: 40; Schedl 1940a: 337; Wood, S. L. 1969c: 121, 1973c: 181.

obesus Kirsch 1875: 283. Holotype, sex?; Peru; SMTD, Dresden. Synonymy: Eggers 1929e: 52.

References: (**ds**) Hagedorn 1910d: 31; Kleine 1912b: 188. (**tx**) Eggers 1929e: 52; Hagedorn 1910a: 40; Kirsch 1875: 283; Schedl 1952h: 69.

manni Blackman 1943c: 385. Holotype ♀; Rio Madeira, Brazil; USNM, Washington. Synonymy: Wood 1973c: 181.

References: (**ds**) Blackwelder 1947. (**tx**) Blackman 1943c: 385; Wood, S. L. 1973c: 181.

australis Schedl 1953f: 80. Holotype ♂; Queensland, Australia (intercepted); Schedl Collection in NHMW, Wien. Synonymy: Wood 1977b: 209.

Notes: (3) One specimen intercepted from an imported log; it is not established in Australia.

References: (**tx**) Schedl 1953f: 80; Wood, S. L. 1977b: 209.

***porteri* Bruch** 1914b: 25. Syntypes, sex?; Chile (cerca de Concepcion and Santiago); Porter Collection and Bruch Collection.

Distribution: South America (Chile).

Hosts: *Persica vulgaris, Prunus domestica.*

References: (**ds**) Blackwelder 1947; Schedl 1972d: 132. (**tx**) Bruch 1914b: 25; Porter 1932: 106; Schedl 1972d: 132.

***profanus* Schedl** 1963d: 212. Holotype ♀; Brasilien: Santa Catarina, Nova Teutonia; Schedl Collection in NHMW, Wien.

Distribution: South America (Brazil).

References: (**tx**) de Ruette 1970: 107; Schedl 1963d: 212.

***pruni* Wood** 1956c: 253. Holotype ♀; 15 miles NW Chihuahua, Chihuahua, Mexico; SMUK, Lawrence.

Figures: Atkinson et al. 1986: 18 (adult).

Distribution: North America (Chiapas, Chihuahua, Guerrero, Hidalgo, Jalisco, Michoacan, Morelos, Nuevo Leon, Veracruz in Mexico/ Arizona, Colorado, New Mexico, South Dakota in USA).

Hosts: *Prunus communis, P. persica, P. serotina, P. virginiana, P.* sp.

References: (**hb**) Atkinson & Equihua 1985a: 75; Atkinson et al. 1986: 21; Burgos & Saucedo 1983: 61; Wood, S. L. 1982b: 266. (**ds**) Atkinson & Equihua 1985a: 75, 1985b: 230; Atkinson et al. 1986: 21; Burgos & Saucedo 1983: 61; Furniss, R. L. & Carolin 1977: 370; Thatcher 1951: 80; Wood, S. L. 1960b: 61, 1982b: 266. (**tx**) Atkinson et al. 1986: 18; Muskus Arrieta 1984: 63; de Ruette 1970: 107; Wood, S. L. 1956c: 253, 1982b: 266.

***pseudocristatus* (Pfeffer)** 1972b: 40 (*Phloeophthorus*). Holotype (?), sex?; Anatolien, Turkey; Prage Museum.

Distribution: Asia (Turkey), Europe (Greece).

Hosts: *Spartium junceum.*

References: (**tx**) Pfeffer 1972b: 40.

***pseudoscabricollis* Atkinson** 1989: 329. Holotype ♂; Lake Corpus Christi State Park, San Patricio Co., Texas [USA]; USNM, Washington.

Distribution: North America (S Texas in USA).

References: (**tx**) Atkinson 1989: 329.

***puberulus* (Chapuis)** 1869: 46 (*Dryotomus*). Holotype, sex?; Cayenne; IRSNB, Brussels.

Distribution: South America (Cayenne/ Venezuela).

References: (**ds**) Blackwelder 1947; Chapuis 1869: 46, 1873: 254; Hagedorn 1903b: 546, 1910d: 30, 32; Kleine 1912b: 188, 1914b: 338; Schedl 1973d: 152; Wood, S. L. 1972a: 409. (**tx**) Chapuis 1869: 46, 1873: 254; Hagedorn 1903b: 546, 1910a: 38, 40; Hopkins 1914: 121; Lucas 1920: 251; Schedl 1962q: 487; Wood, S. L. 1962: 76, 1972a: 409. (**ms**) Lucas 1920: 251.

***pubifrons* (Guillebeau)** 1893: 59 (*Phloeophthorus*). Syntypes, sex?; Marseille, Hyeres, Corse; Tanger; Frejus; Espagne; not located.

Distribution: Africa (Algeria), Europe (Albania/ Corsica/ Cyprus/ France/ Greece/ Italy/ Sardinia/ Sicily/ Spain/ Yugoslavia).

Hosts: Olbaumes.

References: (**ec**) Kleine 1908c: 179. (**ds**) Barthe 1896; Escalera 1919; Heyden, Reitter, & Weise 1906: 708; Kleine 1914a: 16; Luigioni 1929: 991; Pfeffer 1947d: 126; Pittioni 1943: 176; Reitter 1894a: 49; Sahlberg 1903c: 79; Schaufuss 1915: 1217; Tredl 1907: 7. (**tx**) Balachowsky 1949a: 112; Guillebeau 1893: 59; Luigioni 1929: 991; Pfeffer 1955a: 131, 1972b: 36; Reitter 1894a: 49, 1913a: 34; Schedl 1934f: 1641.

corsicus Guillebeau 1893: 60 (*Phloeophthorus*). Syntypes, sex?; Corse; not located. Synonymy: Pfeffer 1972b: 36.

References: (**ec**) Novak, P. 1952: 415. (**ds**) Eggers 1912f; Novak, P. 1952: 415, 1964; Sainte-Claire & Mequignon 1938: 446; Schaufuss 1915: 1217. (**tx**) Balachowsky 1949a: 112; Eggers 1912f; Guillibeau 1893: 60; Pfeffer 1972b: 36; Reitter 1913a: 34; Schedl 1934f: 1640.

lineigera Guillebeau 1893: 60 (*Phloeophthorus*). Syntypes ♀; Barjols (France); not located. Synonymy: Pfeffer 1972b: 36.

References: (**cn**) Wachtl 1901: 381. (**ec**)

Novak, P. 1952: 415. (**hb**) Wachtl 1901: 381. (**ds**) Barthe 1896; Novak, P. 1952: 415; Reitter 1894a: 49; Sainte-Claire & Mequignon 1938: 446; Schaufuss 1915: 1217. (**tx**) Balachowsky 1949a: 112; Guillebeau 1893: 60; Pfeffer 1972b: 36; Reitter 1894a: 49, 1913a: 35; Schedl 1934f: 1640.

sicula DelGuercio 1925b: 210 (*Comesiella*). Syntypes, sex?; Sicily, Calabria, and Sardinia; not located. Synonomy: Pfeffer 1972b: 36.

References: (**ay**) DelGuercio 1931: 63–74. (**cn**) DelGuercio 1925b: 210–218, 1931: 63–74. (**hb**) DelGuercio 1931: 63–74. (**ds**) Luigioni 1929: 992. (**tx**) Balachowsky 1949a: 112; DelGuercio 1925b: 210–218; Luigioni 1929: 992; Pfeffer 1972b: 36; Schedl 1934f: 1634, 1962q: 489.

guillebeaui Reitter 1913a: 35 (*Phloeophthorus*). Holotype ♀; Dalmatien: Castelnuovo; NHMB, Budapest. Synonymy: Pfeffer 1972b: 37.

References: (**ec**) Novak, P. 1952: 415. (**ds**) Langhoffer 1915c: 156; Novak, P. 1952: 415; Schaufuss 1915: 1217. (**tx**) Pfeffer 1955a: 131, 1972: 37; Reitter 1913a: 35; Schedl 1934f: 1640.

***quercinus* Wood** 1969b: 123. Holotype ♀; 16 km E Pachuca, Hidalgo, Mexico; Wood Collection.

Distribution: North America (Hidalgo in Mexico).

Hosts: *Quercus* sp.

References: (**hb**) Wood, S. L. 1982b: 263. (**ds**) Wood, S. L. 1982b: 263. (**tx**) Wood, S. L. 1969b: 123, 1982b: 263.

***remorsus* Wood** 1977c: 391. Holotype ♂; Piedras Blancas, 10 km E Medellin, Antioquia, Colombia; Wood Collection.

Distribution: South America (Colombia).

Hosts: *Quercus humboldtii*.

References: (**tx**) Wood, S. L. 1977c: 391.

***rhododactylus* (Marsham)** 1802: 58 (*Ips*). Syntypes, sex?; England; not located.

Figures: Aslam 1961: 442, 459, 472, Balachowsky 1949a: 110, 114 (adult), Pfeffer 1898a:pl. 2, Swaine 1911a: 224 (antenna, metatibia).

Distribution: Africa (Algeria/ Egypt/ Libya/ Morocco/ Tunisia), Europe (Austria/ Corsica/ Czechoslovakia/ Denmark/ England/ France/ Germany/ Greece/ Italy/ Hungary/ Netherlands/ Norway/ Poland/ Romania/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia).

Hosts: *Calycotome spinosa*, *Cytisus*, sp., *Genista* sp., *Retama sphaerocarpa*, *Sarothamnus scoparius*, *Spartium junceum*, *Ulex europaeus*.

References: (**ay**) Aslam 1961: 441; Escherich 1923b: 478; Fuchs 1912a; Lekander 1959b: 60; Nunberg 1928a: 140; Nusslin 1911a: 51, 59, 89, 1912c: 282; Wichmann 1912a: 9. (**bv**) Barr, B. A. 1969: 642; Grune 1979: 45; Prell 1931: 366; Wichmann 1912a: 9. (**cn**) Barbey 1925: 72; Escherich 1923b: 478; Fleischer 1877a; Forbes 1910; Hartig 1861: 330; Herlein 1878; Judeich & Nitsche 1895: 447, 528; Koppen 1882: 247; Nusslin 1913: 240; Rhumbler 1922: 282, 1927: 294; Schevyrew 1905b: 1092; Schimitschek 1937c: 46, 1955c: 72; Wachtl 1901: 381; Wichmann 1927b: 352, 358. (**ec**) Elliot & Morley 1907; Fleischer 1877a; Graham 1969: 879; Heqvist 1967: 70; Jamnicky 1957b: 25; Kevan 1944: 278; Kleine 1908c: 179, 1909a: 43, 78, 1944: 74, 78; Nuorteva 1957b: 52; Nusslin 1927: 293; Perris 1853: 620; Pfeffer 1928b:reprint p. 7, 9; Roubal 1946: 145; Ruhm 1956b: 3; Scheidter 1936: 235; Sedlaczek 1935a: 162; Silvestri 1911: 392; Szczepanski 1960a: 409. (**hb**) Anonymous 1920: 66; Barbey 1901: 21, 64, 1925: 72; Beffa 1949; Budge 1949; Cecconi 1924; Chapman 1869b; Dombrowsky 1887; Eichhoff 1881a: 39, 146, 1892b: 991; Escherich 1923b: 478; Everts 1903: 742; Fleischer 1877a; Gillanders 1908; Hagedorn 1903a; Hartig 1861: 330; Henschel 1888, 1895a: 150; Jaroschka 1885; Judeich & Nitsche 1895: 447, 528; Karpinski & Strawinski 1948: 153; Lekander 1959b: 60; Lengerken 1939: 51, 1954: 72; Lindemann 1880a: 161; Lovendal 1890b: 196; Masutti 1964; Munro 1926: 50; Nusslin 1898: 280, 1913: 240, 1927: 293; Pfeffer 1942a: 18; Prell 1931: 366; Ratzeburg 1837: 178, 1839: 218; Rhumbler 1922: 282, 1927: 294; Rupertsberger 1880: 226; Schedl 1981b: 47; Scheidter 1936: 235; Schevyrew 1905b: 1092; Schmitt 1843: 110; Sedlaczek 1935a: 162; Silvestri 1911: 392; Stark 1952: 298; Wachtl 1901: 381; Wichmann 1927b: 352, 358. (**ds**) Ammann & Knabl 1913, 1923; Audras & Schaefer 1957; Bangsholt 1977: 95; Barthe 1896; Bedel 1888a, 1888b: 394, 412; Beffa 1949; Bielz 1887; Blanchere & Robert 1889; Borchert 1951; Brancsik 1871, 1906; Calwer 1884, 1893; Chapuis 1869: 43, 1873: 251; Correa de Barros 1913; Crotch 1863; Debatisse 1945; Eggers 1904; Endrodi 1958b; Escalera 1919; Escherich 1923b: 478, 1932b; Everts 1922: 637, 1925; Fauvel 1897; Forster 1849: 440; Fowler 1891; Gaubil 1849: 128; Gozis 1875: 80; Grill 1895: 308; Grouzelle 1905; Gyllenhal 1827: 619; Hagedorn 1903a, 1910d: 33; Hansen, V. 1939, 1956; Hellen 1947; Henschel 1895a: 150; Heyden, Reitter, & Weise 1883: 181, 1891: 669, 1906: 708; Jansson 1940: 53, 63; Johnson & Halbert 1902: 819; Judeich & Nitsche 1895: 447, 528; Kaltenbach 1874: 686; Kamp 1979; Karpinski & Strawinski 1948: 153; Kestercanek 1881a: 12; Kleine 1912b: 189, 1913a: 34, 1934a: 137; Kloft & Hinks 1945: 218; Kolbe, W. 1911: 11; Koppen 1882: 247; Kraatz 1869: 59; Lacordaire 1866: 364; Langhoffer 1915c: 156; Leder 1871: 131; Lengerken 1939: 35; Lindemann 1884b: 263; Lokaj 1868: 63; Lomnicki 1913b: 147; Lovendal 1890c: 210; Lucht 1987: 275; Luigioni 1929: 991; Lundblad 1958: 489; Matthews & Fowler 1883: 42; Murray 1853: 61; Nunberg 1928b: 88, 95, 1954:

28; Nusslin 1898: 280; Pfeffer 1926b: 58, 1928b: 7 (reprint), 9, 1930b: 120, 1931b: 73, 1947d: 126, 1989a: 32; Pittioni 1943: 174; Prossen 1913: 82; Ragusa 1924: 114; Rapp 1934: 718; Ratzeburg 1837: 178, 1839: 218; Redtenbacher 1858: 828, 1874: 379; Reitter 1894a: 48, 1916: 276; Roubal 1935b: 72, 1941: 265; Rye 1866c: 259; Sainte-Claire & Mequignon 1938: 446; Schaufuss 1915: 1217; Schaum 1859: 95, 1862: 100; Schedl 1963e: 154, 1967c: 69, 1971d: 428, 1972n: 347, 1980a: 4; Schilsky 1909: 187; Schiodte 1873: 100; Schmitz 1898: 157; Schneider & Leder 1977: 54; Seidlitz 1872: 392, 1891a: 561, 1891b: 606; Sharp & Fowler 1893: 34; Stark 1927b: 86, 1952: 298; Stein 1868: 113; Stein & Weise 1877: 163; Stephens 1829a: 147, 1829b: 12, 1830: 365, 419, 1839: 209; Thomson 1865: 352, 1868: 218; Tredl 1907: 7; Welch, R. C. 1968b: 121; Wichmann 1927a: 52. (**tx**) Aslam 1961: 441–442, 459, 472; Bach 1854; Balachowsky 1949a: 113; Barbey 1901: 21, 64; Bedel 1888b: 394, 412; Beffa 1949; Bertolini 1872; Blandford 1891a; Brancsik 1871; Chapuis 1869: 43, 1873: 251; Doebner 1860; Dombrowsky 1887; Eggers 1913c, 1943a: 353; Eichhoff 1864b: 28, 1881a: 39, 146, 1883a: 104, 127; Endrodi 1957a, 1957b; Ericson & Sandin 1893; Escherich 1923b: 478; Everts 1903: 742, 1922: 637; Fleischer 1927; Formanek 1907: 16; Fuchs 1912a; Gemminger & Harold 1872: 2675; Gillanders 1908; Grune 1979: 45; Guillebeau 1893; Gyllenhal 1827: 619; Hagedorn 1904e, 1910a: 42; Hansen, V. 1956, 1964: 458; Henschel 1895a: 150; Hoffmann 1942; Hopkins 1905b: 77; Judeich & Nitsche 1895: 447, 528; Kalina 1970: 121; Karpinski & Strawinski 1948: 153; Kuhnt 1913: 1049; Lacordaire 1866: 364; Lekander 1959b: 60; Letzner 1891: 374; Lovendal 1889b: 43, 1890c: 210, 1898: 101; Lucht 1987: 275; Luigioni 1929: 991; Marsham 1802: 58; Michalski 1969b: 568; Negru 1966b: 400; Nunberg 1928a: 140, 1954: 28; Nusslin 1911a: 51, 59, 89, 1912c: 282; Pfeffer 1932b: 11, 1942a: 18, 1955a: 132, 1989a:pl. 2; Portevin 1935: 314; Quaschik 1953: 35; Ratzeburg 1837: 178, 1839: 218; Redtenbacher 1849a: 793, 852, 1849b: 27, 1858: 828, 1874: 370; Reitter 1894a: 48, 1913a: 33, 1916: 276; Rey 1885: 128; Rhumbler 1922: 282, 1927: 294; Rupertsberger 1880: 226; Russo 1932: 87–113; Sahlberg 1836: 139; Schedl 1934f: 1641, 1952f: 86, 1980a: 4, 1981b: 47; Schimitschek 1937c: 46, 1955c: 72; Schmitt 1843: 110; Seidlitz 1872: 392, 1891a: 561, 1891b: 606; Spessivtsev 1922a: 459; Stark 1952: 298; Stephens 1829a: 147, 1830: 365, 419, 1939: 209; Stresemann et al. 1989: 354; Swaine 1911a: 222; Thomson 1865: 352, 1868: 218. (**ms**) Escherich 1932b; Schimitschek 1930b: 407.

spartii Nordlinger 1847: 217 (*Hylesinus*). Syntypes, sex?; Schwarzwald, Deutschland; not located. Synonymy: Blandford 1891a: 213, Pfeffer 1972b: 33.

References: (**ay**) Imhoff 1856: 228. (**cn**) Judeich & Nitsche 1895: 447. (**ec**) Perris 1856a: 244; Rondani 1873: 149. (**hb**) Barbey 1901: 21, 64, 1905; Buddenberg 1884; Cecconi 1906; Eichhoff 1881a: 39, 145, 1892b: 99; Henschel 1895a: 150; Judeich & Nitsche 1895: 447; Lindemann 1881: 161–163; Nordlinger 1856: 36; Perris 1856a: 244. (**ds**) Barbey 1905; Barthe 1896; Bau 1888; Cecconi 1897, 1906; Chapuis 1869: 42, 1873: 250; Chapuis & Candeze 1853; Fauvel 1885; Grill 1895: 308; Henschel 1895a: 150; Heyden, Reitter, & Weise 1883: 181, 1891: 669; Judeich & Nitsche 1895: 447; Kaltenback 1874b: 104, 776; Kestercanek 1881a: 12; Lacordaire 1866: 364; Perris 1876a: 254, 1877a: 414; Rosenhauer 1856: 301; Schaum 1859: 95, 1862: 100; Schilsky 1909: 187; Seidlitz 1891a: 561, 1891b: 606; Stein 1868: 113. (**tx**) Bach 1854; Balachowsky 1949a: 113–115; Barbey 1901: 21, 64; Blandford 1891a: 213; Buddenberg 1884: 87–93; Chapuis 1869: 42, 1873: 250; Chapuis & Candeze 1853; Doebner 1860; Eichhoff 1864b: 28, 1881a: 39, 145, 1883a: 104, 126; Endrodi 1957a; Fauvel 1885, 1887, 1889; Guillebeau 1893; Henschel 1895a: 150; Hoffmann 1942: 74; Judeich & Nitsche 1895: 447; Lacordaire 1866: 364; Letzner 1891: 373; Nordlinger 1847: 217, 1848: 250, 1856: 36; Perris 1877a: 414; Pfeffer 1972b: 33; Portevin 1935: 314; Redtenbacher 1849a: 793, 852, 1849b: 27; Rey 1892b: 30; Schedl 1934f: 1641; Seidlitz 1891a: 561, 1891b: 606.

tarsalis Forster 1849: 383 (*Hylesinus*). Syntypes, sex?; Europe; not located. Synonymy: Letzner 1891: 373, Balachowsky 1949a: 115, Pfeffer 1972b: 33.

References: (**ec**) Gaulle 1906: 236; Kokueva 1900: 568. (**hb**) Bach 1864; Rupertsberger 1880: 227. (**ds**) Acloque 1896; Blanchere & Robert 1889; Brancsik 1871; Buddenberg 1879a: 109, 1884: 87–93; Calwer 1884, 1893; Eyquem 1891; Gozis 1875: 80; Gredler 1866: 370; Heyden 1876: 298, 1879: 139; Horion 1951; Kraatz 1869: 59; Lacordaire 1866: 364; Leder 1871: 131; Redtenbacher 1874: 370; Schaum 1859: 95, 1862: 100; Schilsky 1909: 187; Stein 1868: 113; Stein & Weise 1888: 163; Westhoff 1882: 237. (**tx**) Acloque 1896; Bach 1864; Balachowsky 1949a: 115; Bertolini 1872; Brancsik 1871; Doebner 1860; Fairmaire 1864: 32; Forster 1849: 383; Gemminger & Harold 1872: 2675; Guillebeau 1893; Jacquelin du Val & Fairmaire 1868: 101; Lacordaire 1866: 364; Letzner 1891: 373; Pfeffer 1972b: 33; Redtenbacher 1874: 370; Rupertsberger 1880: 227.

retamae Perris 1864a: 300 (*Hylesinus*). Syntypes, sex?; Madrid; not located. Synonymy: Hagedorn 1910d: 33.

References: (**ec**) Perris 1856a: 243. (**hb**) Perris

1856a: 243. (**ds**) Calwers 1884, 1893; Gozis 1875; Hagedorn 1910d: 33; Heyden, Reitter, & Weise 1883: 181; Schilsky 1909: 187; Stein 1868: 113; Stein & Weise 1877: 164. (**tx**) Gemminger & Harold 1872: 2675; Perris 1864a: 300.

rhododactylus austriacus Guillebeau 1893: 58 (*Phloeophthorus*). Syntypes, sex?; Austria; not located. Status: Treated as a subspecies by Pfeffer 1972b: 33. Synonymy: Balachowsky 1949a: 115.

References: (**ds**) Schilsky 1909: 187. (**tx**) Balachowsky 1949a: 115; Guillebeau 1893: 58; Hagedorn 1910d: 33; Pfeffer 1972b: 33; Schedl 1934f: 1641.

rhododactylus vinogradovi Semenov 1902: 269 (*Phloeophthorus*). Lectotype, sex ?; ♂♀; Transcaucasia: Borzhom designated by Michalski 1969: 893. Status: Pfeffer 1972b: 33 (a possible geographical race).

References: (**hb**) Stark 1952: 298. (**ds**) Buresh & Lazarov 1956; Hagedorn 1910d: 33; Heyden, Reitter, & Weise 1906: 708; Kleine 1912b: 189, 1934a: 137; Pfeffer 1936: 89; Schaufuss 1915: 1217; Stark 1927b: 87, 1952: 298. (**tx**) Hagedorn 1910a: 40; Michalski 1969: 893; Pfeffer 1955a: 131, 1972b: 33; Reitter 1913a: 33; Schedl 1934f: 1641; Semenov 1902: 269; Stark 1952: 298.

***rugulosus* Eggers** 1951: 147. Syntypes 1♂, 1♀; Brasil (Corumba, im Staate Matto Grosso), and Argentinien (Prov. Chaco); both deposited in Eggers Collection, now in NHMW, Wien.

Distribution: South America (Argentina/ Brazil).

References: (**ds**) Schedl 1966f: 82, 1971f: 147, 1973d: 152, 1978c: 292. (**tx**) Eggers 1951: 147; Schedl 1951m: 83.

***scabratus* Blandford** 1897a: 164. Lectotype ♂; Volcan de Chirqui, 4000–6000 ft.; BMNH, London, designated by Wood 1982b: 274.

Distribution: North America (Panama).

References: (**ds**) Blackwelder 1947; Hagedorn 1910a: 32; Kleine 1912b: 188, 1914b: 359; Wood, S. L. 1982b: 274. (**tx**) Blandford 1897a: 164; Hagedorn 1910a: 40; Wood, S. L. 1982b: 274.

***scabricollis* (Hopkins)** 1916a: 656 (*Phloeophthorus*). Holotype ♂; Hessville, Indiana [USA]; USNM, Washington.

Distribution: North America (Illinois, Indiana, Ohio in USA).

Hosts: *Ptelea trifoliata, Staphylea trifolia*.

References: (**cn**) Blackman 1950. (**hb**) Blackman 1950; Chamberlin 1939: 141; Sanderson & Appleby 1971: 103. (**ds**) Blackman 1950; Blatchley & Leng 1916: 656; Chamberlin 1939: 141; Deyrup 1981b: 4; Leng 1920: 338; Wood, S. L. 1982b: 274. (**tx**) Blatchley & Leng 1916: 656; Chamberlin 1939: 141; Hopkins 1916a: 656; Wood, S. L. 1982b: 274.

***scarabaeoides* (Bernard)** 1788: 270 (*Scolytus*). Syntypes, sex?; France and Italy; Bernard Collection, lost. Neotype ♀; Gallia meridionalis; UZMC, Copenhagen, designated by Wood 1975c: 122.

Figures: Balachowsky 1949a: 17, 23 (adult), Balachowsky & Mesnil 1935: 544–545 (adult), Grune 1979: 40, Postner 1974: 390 (adult), Russo 1963a, 1964: 299, Swaine 1911a: 224 (antenna, metatibia).

Distribution: Africa (Algeria/ Morocco/ Tunisia), Asia (Israel/ Syria/ Turkey), Europe (Bulgaria/ Corsica/ Cyprus/ France/ Greece/ Hungary/ Italy/ Sardinia/ Spain/ Switzerland/ Yugoslavia).

Hosts: *Olea europaea, Pistacia lentiscus*.

Notes: (3) Dejean 1837: 331 (*americanus*, nomen nudum, synonymy by Schedl 1958k: 141). Schedl 1958k: 141 (*occidentalis* Bedel cited in Balachowsky 1949a: 107; this is a black specimen of *scarabaeoides* that was apparently never validated). Schedl 1979j: 120 (*dalmatinus* Eggers, nomen nudum, synonymy).

References: (**ay**) Chararas 1956c; DelGuercio 1931; Nusslin 1912c: 282; Russo 1937: 3–244; Scherb 1971. (**bv**) Balachowsky & Chararas 1964; Barr, B. A. 1969: 642; Grune 1979: 41; Kirkendall 1984: 240; Neuenschwander & Alexandrakis 1982. (**cn**) Andres de 1979; Ayoutantis, Kortzas, & Pelecassis 1951: 15–17; Balchowsky 1963a: 1269; Bardia 1946; Berlese 1915; Bonnet 1938; Browne 1968b: 540; Castro 1948: 122–132; Constantino 1955: 131–161; DelGuercio 1925b, 1931; Essig 1917; Ferri 1949; Fiori 1952; Frediani 1948; Galvao 1939; Garcia-Tejero 1955: 231; Gentry, J. W. 1965: 110; Gonzales de Andres 1939: 118–124; Grandi 1951; Jarraya 1979; Koroneos 1939; Laboulbene 1895: 313; Linkfield & Damiano 1963; Liotta 1981; Moneo Trallero 1954: 45; Morris, H. M. 1927: 65–67, 1935: 39–44; Mourikis & Vassilaina-Alexopoulou 1975: 142; Mumford 1961: 30, 1963: 40; Mussche et al. 1987; Negru 1966: 397–405; Nusslin 1913: 240; Ocete, Ocete, & Perez 1986; Paulian 1943: 324; Pelekassis 1962; Picard 1921: 17; Renaud 1941: 235; Rhumbler 1927: 292; Rosa 1914: 301–305; Russo 1926: 75–86, 1939, 1950a: 1, 1954: 65–95, 1963a, 1963b; Santorio 1951: 15–17; Schimitschek 1937c: 46, 1944: 154, 1955c: 72; Seabra 1908a: 184; Souphieff & Scherbinovskaja 1937: 44; Talhouk 1954: 307; Todd 1927: 39–50; Topi 1911a: 52; Venturi 1960. (**ec**) Arambourg 1944: 15, 101, 1964: 114; Boucek 1958; Cambi 1915; Chararas 1956b; Fry 1989: 17; Graham 1969: 879; Gvorfi 1941a: 87; Haeselbarth 1967; Halperin & Holzschuh 1984: 27; Heqvist 1957b: 48; Jamnicky 1957b: 13, 25; Kleine 1908c: 178, 1909a: 43, 77, 1944: 74; Liotta 1981; Mendel 1985, 1986c: 115, 1986d: 130; Novak, P. 1952: 414; Nusslin 1927: 293; Ruschka & Fulmek 1915: 402; Russo 1926b: 84, 1963a; Schvester 1957b: 93; Silvestri 1911: 389; Talhouk 1961: 213; Thanassoulopoulos & Thanassoulopoulos 1984; Thompson, W. R. 1943: 87, Thomp-

son, W. R. & Simmonds 1964: 33, 1965: 69; Tudor 1969: 32; Wichmann 1916: 17. (**hb**) Balachowsky 1963a: 1269; Balachowsky & Mesnil 1935: 544–545; Beffa 1949, 1961; Berlese 1915; Bonnemaison 1953; Browne 1968b: 540; Buysson 1926: 95–98; Chararas 1956c; DelGuercio 1931; Evans 1952: 141; Fiori 1952; Galvao 1939, 1956; Grandi 1951; Halperin & Holzschuh 1984: 27; Herbaut et al. 1987; Jarraya 1979; Kirkendall 1984: 239; Lepiney & Mimeur 1932: 44; Liotta 1981; Malenotti 1924a, 1924b; Martelli 1927: 4; Masutti 1964; Moneo Trallero 1954: 45; Morstatt 1924: 37; Nusslin 1913: 240, 1927: 293; Ocete, Ocete, & Perez 1986; Paulian 1943: 324; Peyerimhoff 1926: 385; Postner 1974: 340; Rhumbler 1927: 292; Rosa 1914: 301–305; Russo 1932, 1937, 1939a: 3, 1954: 65, 69, 1963a, 1963b, 1964; Schimitschek 1944: 154; Schvester 1957b: 93; Silvestri 1911: 389; Stark 1952: 295; Topi 1911a: 52; Wichmann 1916: 17. (**ds**) Audras & Schaefer 1957; Balachowsky 1944b, 1963a: 1269; Barthe 1896; Bedel 1888b: 394, 412; Beffa 1949; Browne 1968b: 540; Buresh & Lazarov 1956; Calvin 1960; Chaigneau 1959; Dejean 1837: 331; Eggers 1912f; Endrodi 1986: 217; Evans, D. 1952: 141; Ganglbauer 1904; Gentry, J. W. 1965: 110; Georghiou 1977: 74; Grune 1979: 41; Hagedorn 1910d: 32; Halperin & Holzschuh 1984: 27; Heyden, Reitter, & Weise 1891: 669, 1906: 708; Horion 1951; Kleine 1912b: 188, 1913a: 87, 307, 1914a: 16, 1934a: 137; Kobakhidze 1957: 178; Kocher 1953: 133; Kortzas 1955: 177; Langhoffer 1915c: 156; Luigioni 1929: 990; Mourikis & Vassilaina-Alexopoulou 1975: 142; Mumford 1961: 30, 1963: 40; Negru 1966b: 400; Novak, P. 1952: 414, 1964; Nunberg 1964a: 234; Palm 1976; Pelekassis 1962; Peyerimhoff 1926: 385; Pfeffer 1936: 89, 1947d: 126, 128; Ragusa 1924: 114; Reitter 1916: 275; Sainte-Claire 1914: 468; Sainte-Claire & Mequignon 1938: 446; Schedl 1961b: 187, 1964a, 1967c: 69, 1969g: 288, 1971d: 430, 1971f: 147, 1979i: 288, 1980a: 4; Schilsky 1909: 187; Souphieff & Scherbinovskaja 1937: 44; Stark 1952: 295; Straby 1971: 7; Talhouk 1954: 307, 1961: 213; Tredl 1907: 7; Tressens 1952: 90; Tymchak 1978: 11, 1980: 15. (**tx**) Balachowsky 1944b, 1949a: 106–107, 1963a: 1269–1270; Bedel 1887: 191, 1888b; Beffa 1949, 1961; Bernard 1788: 270; Ceballos 1945; Chararas 1956c; Dejean 1837: 331; DelGuercio 1925b; Eggers 1912f, 1929e: 43, 55; Gebien 1907: 197; Grune 1979: 40–41; Hagedorn 1910a: 40; Kuhnt 1913: 1044; Lesne 1908: 30; Lucas 1920: 504; Luigioni 1929: 990; Negru 1966b: 400; Nusslin 1912c: 282; Portevin 1935: 313; Reitter 1913a: 32, 1916: 275; Rhumbler 1927: 292; Russo 1963a, 1964: 299; Schedl 1934f: 1640, 1952k: 159, 1958k: 141–142, 1979j: 120, 1980a: 4; Scherb 1971; Schimitschek 1937c: 46, 1955c: 72; Stark 1952: 295; Swaine 1911a: 222–224; Wichmann 1916: 17; Wood, S. L. 1975c: 122. (**ms**) Lucas 1920: 504.

oleae Fabricius 1792: 366 (*Bostrichus*). Lectotype ♀; Gallia meridionalis; UZMC, Copenhagen, designated by Wood 1975c: 122. Synonymy: Bedel 1887: 191, Balachowsky 1949a: 106, Wood 1975c: 122.

References: (**ay**) Nusslin 1911a: 255. (**en**) Acloque 1914; Boyer 1840; Frohlich & Rodewald 1969: 191; Gois 1944; Goureau 1861: 115, 1865: 27; Iyriboz 1940b: 48; Kleine 1932a: 297; Madan 1910: 67; Morris, H. M. 1935: 54, 1937: 22; Riviere 1911: 304; Schimitschek 1938c: 2125; Seabra 1908a: 184; Wachtl 1901: 381; Wyniger 1962a: 90, 1962b: 298. (**ec**) Elliot & Morley 1907; Perris 1852: 515; Wichmann 1955a: 98; Yayla 1983. (**hb**) Barbey 1901: 21, 65; Bodenheimer 1930, 1935; Bugnion 1887a: 224–225; Eichhoff 1881a: 39, 147, 1892b: 99; Frohlich & Rodewald 1969: 191; Girard 1873; Gois 1944; Henschel 1895a: 150; Iyriboz 1940b: 48; Kleine 1932a: 297; Knotek 1897: 136, 143, 1898b: 320, 1907: 281; Lengerken 1954: 72, 1959: 51; Lunardoni & Leonardi 1889: 443; Madon 1930: 99; Morstatt 1924: 36; Nordlinger 1855: 186; Nusslin 1898: 274; Perris 1852: 515; Riviere 1911: 304; Rupertsberger 1880: 227; Topi 1911: 52–57; Wachtl 1901: 381; Westwood 1870: 308; Xambeu 1889a: 212, 1892: 477–484, 1893: 101. (**ds**) Acloque 1896, 1914; Blanchere & Robert 1889; Bodenheimer 1930, 1935; Chapuis 1869: 43, 1873: 251; Chapuis & Candeze 1853; Dejean 1821, 1825, 1837; Escalera 1919; Eyquem 1891; Fauvel 1885; Gaubil 1849: 127; Georghiou 1977: 74; Gozis 1875: 80; Henschel 1895a: 150; Heyden, Reitter, & Weise 1883: 181; Kaltenbach 1874: 436; Kleine 1914a: 16, 1932a: 297; Knotek 1898b: 320; Lunardoni & Leonardi 1889: 443; Nusslin 1898: 274; Paragello 1881b: 71; Perris 1876a: 254, 1877a: 414; Pittioni 1943: 176; Redtenbacher 1858: 829, 1874: 371; Reitter 1894a: 47; Schaum 1859: 95, 1862: 100; Schneider & Leder 1977: 54; Stein 1868: 113; Stein & Weise 1877: 164; Strauch 1861: 122; Sturm 1843: 229; Wichmann 1955a: 98. (**tx**) Acloque 1896; Balachowsky 1949a: 106; Barbey 1901: 21, 65; Bedel 1887: 191, 1888b: 391; Bertolini 1872; Calwer 1858; Castelnau 1840; Chapuis 1869: 43, 1873: 251; Chapuis & Candeze 1853; Chevrolat 1838; Dejean 1821, 1825; Doebner 1860; Eggers 1929e: 43; Eichhoff 1864b: 29, 1881a: 39, 147, 1883a: 104, 128; Erichson 1836: 57; Fabricius 1792: 366, 1801: 395; Fairmaire 1864: fig. 154; Fauvel 1885, 1887, 1889; Gemminger & Harold 1872: 2676; Girard 1873; Henschel 1895a: 150; Herbst 1793: 120; Hopkins 1914: 127, 1915c:pl. 9, fig. 8, pl. 11, fig. 8; Illiger 1907: 321; Jablonsky 1785: 120;

Jacquelin du Val & Fairmaire 1868: 102; Latreille 1803: 204, 1804: 108, 1807: 280; Lepesme 1944: 273; Lesne 1908: 30; Lunardoni & Leonardi 1889: 443; Nordlinger 1847: 217, 1848: 256; Nusslin 1911a: 255; Olivier 1795b: 13; Perris 1877a: 414; Redtenbacher 1858: 829, 1874: 371; Reitter 1891a: 33, 1894a: 47; Rey 1892b: 30; Rupertsberger 1880: 227; Schedl 1934f: 1640; Wood, S. L. 1975c: 122; Zimmermann 1868: 148.

oleiphilus DelGuercio 1925a: 196–208. Syntypes, sex?; Italy; not located. Synonymy: Balachowsky 1949a: 106.

References: (**hb**) Russo 1932: 87–113. (**ds**) Kleine 1934a: 137. (**tx**) Balachowsky 1949a: 106; DelGuercio 1925a: 196–208, 1931: 1–74; Eggers 1944c: 143; Schedl 1934f: 1640, 1952k: 159.

***schoenbachi* Kirsch** 1866: 214. Syntypes, sex?; Bogota, Colombia; MNB, Berlin.

Distribution: South America (Bolivia/ Colombia).

References: (**ds**) Blackwelder 1947; Hagedorn 1910d: 32; Kleine 1912b: 188, 1914b: 341. (**tx**) Eggers 1943a: 354; Gemminger & Harold 1872: 2676; Hagedorn 1910a: 40; Kirsch 1866: 149, 214; Schedl 1951m: 72.

boliviae Blackman 1943c: 387. Holotype ♀; Mapiri, Bolivia; USNM, Washington, Synonymy: Schedl 1951m: 72.

References: (**ds**) Blackwelder 1947: 785. (**tx**) Blackman 1943c: 387; Schedl 1951m: 72.

***serratus* Eggers** 1943a: 354. Holotype ♂; Bolivia: Cochabamba; Eggers Collection, in NHMW, Wien.

Distribution: South America (Bolivia).

Notes: (1) The published type repository was MNHN, Paris, but Eggers died before it could be sent there.

References: (**ds**) Schedl 1966f: 80. (**tx**) Eggers 1943a: 354.

***setulosus* Eichhoff** 1868c: 149. Lectotype ♂; type labeled Colombia, published as Carolina; IRSNB, Brussels, designated by Wood 1973c: 182.

Distribution: Antilles Islands (Cuba), North America (Costa Rica/ Guatemala/ Honduras/ Campeche, Chiapas, Jalisco, Veracruz in Mexico/ Panama), South America (Bolivia/ Brazil/ Colombia/ Peru/ Venezuela).

Hosts: *Brosimum alicastrum, B.* sp., *Cedrela mexicana, Celtis iguanaea, Croton gossypiifolius, Ficus cotinifolia, F.* sp.

References: (**ec**) Cooreman 1963: 46; Schaarschmidt 1959: 803; Vitzthum 1926: 464. (**hb**) Atkinson & Equihua 1986a: 419; Wood, S. L. 1982b: 278. (**ds**) Atkinson 1989a: 59; Atkinson & Equihua 1986a: 419; Blackwelder 1947; Blandford 1897a; Bright 1985c: 171; Chapuis 1869: 44, 1873: 252; Estrada & Atkinson 1988: 203; Hagedorn 1910d: 32, 1923b: 546; Kleine 1912b: 188, 1914b: 341, 358–359, 1934a: 137; Pedrosa-Macedo & Schonherr 1985: 17; Schedl 1966f: 77, 1972g: 41, 1973d: 152, 1976a: 51; Wood, S. L. 1982b: 278. (**tx**) Blandford 1897a; Bright 1985c: 171, 177; Chapuis 1869: 44, 1873: 252; Eggers 1929e: 52, 1930a: 168, 1933b: 5; Eichhoff 1868c: 149, 1896: 608; Gemminger & Harold 1872: 2676; Hagedorn 1903b: 546, 1910a: 40; Nunberg 1956a: 144; Pedrosa-Macedo & Schonherr 1985: 17; Schedl 1937g: 66, 1951: 81; Vitzthum 1926: 407–503; Wood, S. L. 1973c: 182, 1974d: 286, 1977b: 209, 1982b: 278; Zimmermann 1868: 148.

rudis Eichhoff 1868c: 149. Syntypes (?) ♂; Brazil; Hamburg Museum, lost. Synonymy: Wood 1974d: 286.

Notes: (1) Wood 1982b: 279 (Synonymy based on 2 possible syntypes in IRSNB, Brussels, identified by Eichhoff).

References: (**hb**) Beaver 1973b. (**ds**) Beaver 1973b; Blackwelder 1947; Chapuis 1869: 45, 1873: 253; Hagedorn 1910d: 32; Kleine 1912b: 188, 1914b: 336, 338, 341; Schedl 1972g: 41. (**tx**) Chapuis 1869: 45, 1873: 253; Eggers 1930a; Eichhoff 1868c: 149; Gemminger & Harold 1867: 2676; Hagedorn 1910a: 40; Wood, S. L. 1974d: 286, 1982b: 279.

dubius Eichhoff 1868c: 150. Holotype ♂; Colombia; MNB, Berlin. Synonymy: Wood 1977b: 209.

References: (**tx**) Eichhoff 1868c: 150, 1896: 608; Wood, S. L. 1977b: 209

puncticollis Chapuis 1869: 45. Syntypes, sex?; Bresil; IRSNB, Brussels. Synonymy: Eggers 1929e: 52.

References: (**cn**) Green 1916: 608–636; Kleine 1932a: 297. (**hb**) Kleine 1932a: 297. (**ds**) Blackwelder 1947; Hagedorn 1910d: 32; Kleine 1912b: 188, 1914b: 336, 343, 1932a: 297; Lengerken 1939: 51. (**tx**) Chapuis 1869: 45, 1873: 253; Eggers 1929e: 52; Gemminger & Harold 1872: 2676; Hagedorn 1910a: 40, 1912a.

asperatus Blandford 1897a: 166. Holotype ♂; Panajachel, Guatemala; BMNH, London. Synonymy: Wood 1973c: 182.

References: (**ds**) Blackwelder 1947: 785; Bright 1972d: 39; Hagedorn 1910d: 30; Kleine 1912b: 188, 1914b: 358–359. (**tx**) Blandford 1897a: 166; Bright 1972d: 39; Hagedorn 1910a: 40; Wood, S. L. 1972c: 150, 1973c: 182.

sodalis Blandford 1897a: 168. Lectotype ♂; Cerro Zunil, Guatemala; BMNH, London, designated by Wood 1974d: 286. Synonymy: Wood 1974d: 286.

References: (**ds**) Blackwelder 1947; Hagedorn 1910d: 32; Kleine 1912b: 188, 1914b: 358–359. (**tx**) Blandford 1897a: 168; Hagedorn 1910a: 40; Wood, S. L. 1972c: 150, 1974d: 286.

spinipennis Eggers 1930a: 168. Holotype ♂: Colombia, probably Colonia Tovar (taken by

Moritz): MNB, Berlin. Synonymy: Wood 1977b: 209.
References: (**ds**) Blackwelder 1947; Hoganson & Ashworth 1982: 255. (**tx**) Eggers 1930a: 168; Wood, S. L. 1977b: 209.

bolivianus Eggers 1933b: 5. Holotype ♂; Bolivien (Cochabamba); USNM, Washington. Synonymy: Wood 1974d: 286.
References: (**ds**) Anderson, W. H. & Anderson 1971: 7; Blackwelder 1947: 785.
(**tx**) Eggers 1933b: 5; Wood, S. L. 1974d: 286.

atlanticus Schedl 1951m: 81. Holotype ♂; Cuba; Schedl Collection in NHMW, Wien. Synonymy: Bright 1985: 177.
References: (**tx**) Bright 1985: 177; Schedl 1951m: 81.

***sharpi* (Guillebeau)** 1893: 62 (*Phloeophthorus*). Syntypes, sex?; Alger; not located.
Figures: Postner 1974: 392 (adult).
Distribution: Africa (Algeria), Europe (France).
Hosts: *Spartium junceum*.
References: (**bv**) Grune 1979: 45. (**ec**) Bachmaier 1973. (**ds**) Grune 1979: 45; Kleine 1914a: 16; Reitter 1894a: 49. (**tx**) Balachowsky 1949a: 115–116; Grune 1979: 45; Guillebeau 1893: 62; Pfeffer 1955a: 131; Reitter 1894a: 49, 1913a: 36; Schedl 1934f: 1641; Seitner 1920: 283.

***simplex* Wood** 1967b: 95. Holotype ♀; Fort Clayton, Canal Zone, Panama; Wood Collection.
Distribution: North America (Panama).
Hosts: Liana.
References: (**hb**) Wood, S. L. 1982b: 267. (**ds**) Wood, S. L. 1982b: 267. (**tx**) Wood, S. L. 1967b: 95, 1982b: 267.

***simplicidens* Wood** 1977c: 389. Holotype ♂; Finca La Hermosa, Salento, Caldas, Colombia; Wood Collection.
Distribution: South America (Colombia).
Hosts: "Guamo."
References: (**tx**) Wood, S. L. 1977c: 389.

***spinulosus* (Rey)** 1885: 127 (*Phloeophthorus*). Holotype ♀; Switzerland, Fribourge; not located.
Figures: Balachowsky 1949a: 109, 114 (adult), Chararas 1962c: 386, Grune 1979: 42, Postner 1974: 391 (adult), Stark 1952: 30 (declivity).
Distribution: Asia (Japan/ Sakhalin Island, Siberia in E USSR), Europe (Austria/ Belgium/ Czechoslovakia/ Denmark/ Finland/ France/ Germany/ Hungary/ Italy/ Netherlands/ Norway/ Poland/ Romania/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia).
Hosts: *Abies pectinata*, *Picea excelsa*.
References: (**ay**) Escherich 1923b: 478, 500; Fuchs 1912a; Lekander 1959b: 60; Nunberg 1928a: 140; Nusslin 1911a: 59, 1912c: 282; Wichmann 1912a: 9–10. (**bv**) Barr, B. A. 1969: 642; Grune 1979: 43; Nuorteva 1956c: 94; Prell 1930c: 643, 1931: 366; Tragardh 1930b: 107; Trappen 1935: 152; Wichmann 1912a: 9. (**cn**) Escherich 1923b: 478, 600; Esterberg 1959; Gabler 1955; Grandi 1951; Inouye & Yamaguchi 1955a: 235; Jacentovsky 1933: 271; Juutinen 1960: 19; Kozikowsky 1929: 254; Muller 1912: 184; Nestertschuk 1930: 176; Nosek 1951: 106, 1952b: 98; Nusslin 1913: 239; Pfeffer 1949b: 150, 1950c: 3; Rhumbler 1922: 280, 1927: 293; Schimitschek 1937c: 46, 1955c: 72; Schwerdtfeger 1944a: 181, 1957a: 186; Wachtl 1901: 381; Wardle 1929: 322; Wichmann 1927b: 358. (**ec**) Balazy & Michalski 1964b; Graham 1969: 880; Heqvist 1960, 1963: 153; Inouye & Yamaguchi 1955a: 235; Jamnicky 1957b: 18; Kangas 1946b: 23; Karpinski 1932a: 108; Kleine 1908c: 178, 1944: 80; Kolubajiv & Kalandra 1954: 30; Kostin 1964: 109; Michalski & Ratajczak 1989; Nosek 1951: 106, 1952b: 98; Nunberg 1930: 200; Nuorteva 1957c: 68, 1971; Nusslin 1927: 293; Pfeffer 1923a: 329, 1932a: 6, 1949b: 150, 1950c: 3, 1959: 2, 1960: 345; Saalas 1917a: 222, 1928: 652; Schedl 1958d: 187; Schimitschek 1930a: 281; Schwerdtfeger 1944a: 181, 1957a: 186; Szczepanski 1960a: 410; Thompson, W. R. 1943: 86; Tragardh 1925: 173; Wichmann 1955a: 106; Zumr 1985b. (**hb**) Beffa 1949, 1961; Chararas 1962c: 386; Charvat 1950; Escherich 1923b: 478, 600; Everts 1903: 742; Florov 1949: 68; Fuchs 1904a; Gabler 1955; Gornostaev 1916: 309; Grandi 1951; Jaroschka 1885; Karpinski 1933b: 23; Karpinski & Strawinski 1948: 153; Keler 1931: 46; Knotek 1897: 136, 144, 1898b: 321; Kostin 1960: 132; Krivolutskaya 1956: 827, 1960; Lekander 1959b: 60; Lengerken 1939: 51, 1954: 72; Lindberg 1963: 243; Nunberg 1929a: 95, 1929c: 116; Nuorteva 1956c: 94; Nusslin 1898: 280, 1913: 239, 1927: 293; Pfeffer 1932, 1941c: 4, 12, 1989a: 31; Postner 1974: 341; Prell 1930c: 643, 1931: 366; Rhumbler 1922: 280, 1927: 293; Saalas 1913a: 75; Schedl 1981b: 46; Schimitschek 1930a: 281; Schwerdtfeger 1944a: 181, 1957a: 186, 1981: 192; Simmel 1916: 191; Spessivtsev 1913a: 47; Stark 1926a: 332, 1952: 300; Tragardh 1919: 237–248, 1930b: 107, 1931: 62, 1939b: 156; Tredl 1908b: 138; Wachtl 1901: 381; Wichmann 1927b: 358; Zumr 1987a. (**ds**) Ammann & Knabl 1923; Bakke & Kvamme 1977; Bau 1888; Beffa 1949; Bejer-Petersen & Jorum 1977: 12; Brakman 1966b: 204; Butovitsch & Heqvist 1947; Chararas 1962c: 386; Charvat 1950; Eggers 1904; Endrodi 1958b; Escalera 1919; Escherich 1923b: 478, 600, 1932b: 637; Esterberg 1928, 1959; Everts 1922: 637, 1925; Fleischer 1920; Fuchs 1904a, 1905a; Georghiou 1977: 74; Gornostaev 1917; Grune 1979: 43; Hagedorn 1910d: 33; Hansen, V. 1939, 1956, 1964: 458; Harde & Kostlin 1965: 267; Hellen 1947; Heyden, Reitter, & Weise 1891: 669, 1906: 708; Heyrovsky 1927; Holdhaus & Deubel 1910: 145, 160; Horion 1951; Huther 1951: 277; Jacentkovsky 1912: 287; Karpinski 1926: 81, 1931: 18, 21, 1932a: 108, 1933b: 23, 1948b: 229; Karpinski & Strawinski 1948: 153; Keler 1922b: 210;

Kiefer et al. 1942: 528; Klefbeck & Sjoberg 1960: 230; Kleine 1912b: 190, 1913a: 34, 1934a: 138; Knotek 1898b: 321; Kono & Tamanuki 1939: 93; Kozikowsky 1921: 180; Krivolutskaya 1956: 827, 1960, 1983; Kurir 1947c: 14; Langhoffer 1915c: 156; Lazorko 1963; Lomnicki 1913b: 147; Lucht 1987: 275; Luigioni 1929: 991; Lundberg 1977; Mequignon 1936: 48; Michalski 1957: 162; Munster 1928: 288; Negru 1968a: 455; Nunberg 1928b: 87, 1954: 28, 1960a: 154, 1964a: 234; Nuorteva 1971: 67; Nusslin 1898: 280; Pfeffer 1924b: 471, 1926b: 58, 1931b: 74, 1949b: 150, 1950b: 73, 1960: 345, 1989a: 31; Pittioni 1943: 174; Prossen 1913: 82; Rapp 1934: 719; Reitter 1894a: 49, 1916: 276; Roubal 1922: 78, 1941: 266, 1946: 153; Saalas 1913a: 75, 1917a: 222, 1931: 70; Sahlberg 1900: 105; Sainte-Claire & Mequignon 1938: 446; Schaufuss 1915: 1217; Schedl 1980a: 5, 1981b: 46; Scheerpeltz & Winkler 1930: 255; Schilsky 1909: 187; Schwerdtfeger 1981: 192; Simmel 1916: 191–196; Stark 1926a: 332, 1926j: 124, 1931a: 21, 1931d: 542, 1952: 300; Strand 1946: 600; Tragardh 1939b: 156; Tredl 1907: 7, 1908b: 138; Vrydagh 1954: 64; Wanka 1915: 213; Wichmann 1927a: 53, 1955a: 106; Yanovskii & Dmitrienko 1983; Yanovskii & Tegshzhargal 1984: 406; Zinovjev 1955: 187. (**tx**) Balachowsky 1949a: 108; Beffa 1949, 1961; Chararas 1962c: 386; Charvat 1950; Eichhoff 1883a: 127; Endrodi 1957b; Escherich 1923b: 478, 600; Everts 1903: 742, 1922: 637; Fauvel 1887; Fleischer 1927; Formanek 1907: 16; Fuchs 1912a; Gabler 1955; Grune 1979: 42–43; Guillebeau 1893; Hagedorn 1910a: 42; Hansen, V. 1956, 1964: 458; Hopkins 1914: 127; Kalina 1970: 129; Karpinski & Strawinski 1948: 153; Klefbeck & Sjoberg 1960: 230; Koch 1928: 92; Krivolutskaya 1956: 827, 1958: 114; Kuhnt 1913: 1049; Lazorko 1963; Lekander 1959b: 60; Lovendal 1898: 102; Lucht 1987: 275; Luigioni 1929: 991; Nunberg 1928a: 140, 1929c: 116, 1930: 200–208, 1954: 28; Nusslin 1911a: 59, 1912c: 282; Pfeffer 1932b: 11, 1941c: 4, 12, 1947e: 1, 1955a: 129; Portevin 1935: 314; Quaschik 1953: 35; Reitter 1894a: 49, 1913a: 36, 1916: 276; Rey 1885: 127; Rhumbler 1922: 280, 1927: 293; Saalas 1913a: 75, 1916: 110–116; Schedl 1934f: 1641, 1980a: 5, 1981b: 46; Schimitschek 1937c: 46, 1955c: 72; Sokanovskii 1960: 677; Spessivtsev 1913a: 47, 1922a: 490–491, 1925a: 161, 1925b: 5, 1931: 22; Stark 1925: 78–81, 1952: 300; Stresemann et al. 1989: 351; Swaine 1918c: 59; Vrydagh 1854: 64. (**ms**) Escherich 1932b; Kozikowsky 1929: 254; Wichmann 1961: 332.

rhododactylus Ratzeburg 1837: 178 (*Hylesinus*). Syntypes, sex?; Europe; not located, preoccupied. Synonymy: Hagedorn 1910d: 33. References: (**ds**) Chapman 1869: 6–8. (**tx**) Balachowsky 1949a: 108; Blandford 1891: 468; Hagedorn 1910d: 33; Ratzeburg 1837: 178.

chapuisi Blandford 1891a: 213 (*Phloeophthorus*). Syntypes, sex?; Europe; not located, automatic, replacement name for *rhododactylus* Ratzeburg. Synonymy: Hagedorn 1910d: 33. References: (**ds**) Schilsky 1909: 187. (**tx**) Blandford 1891a: 213; Schedl 1934f: 1641.

perrisi Guillebeau 1893: 62 (*Phloeophthorus*). Syntypes, sex?; Prusse; Perris Collection, not located. Synonymy: Balachowsky 1949a: 108. References: (**ds**) Schilsky 1909: 187. (**tx**) Balachowsky 1949a: 108; Guillebeau 1893: 62; Schedl 1934f: 1641.

***squamatus* Wood** 1969b: 7. Holotype ♂; Tapanti, Cartago Prov., Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
References: (**ds**) Wood, S. L. 1982b: 267. (**tx**) Wood, S. L. 1969b: 7–8, 1982b: 267.

***squamiger* Wood** 1977c: 392. Holotype ♂; Colonia Tovar, Aragua, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Inga* sp.
References: (**tx**) Wood, S. L. 1977c: 392.

***striatus* (Eggers)** 1943a: 346 (*Phthorophloeus*). Holotype ♂?; Bolivia (Cochabamba); Eggers Collection, in NHMW, Wien.
Distribution: South America (Bolivia).
References: (**tx**) Anderson, W. H. & Anderson 1971: 32; Eggers 1943a: 346.

***subcostatus* Eggers** 1943a: 352. Syntypes 1♂, 1♀; Bolivia: Cochabamba; Eggers Collection, in NHMW, Wien.
Distribution: South America (Bolivia).
References: (**tx**) Eggers 1943a: 352, 1951: 148.

***subovatus* Blandford** 1987a: 167. Lectotype ♂; El Reposo, Guatemala; BMNH, London, designated by Wood 1982b: 277.
Distribution: North America (Guatemala/ Honduras), South America (Venezuela).
Hosts: Unidentified tree.
References: (**hb**) Wood, S. L. 1982b: 277. (**ds**) Blackwelder 1947; Hagedorn 1910d: 32; Kleine 1912b: 188, 1914b: 358; Wood, S. L. 1982b: 277. (**tx**) Blandford 1987a: 167; Hagedorn 1910a: 40; Wood, S. L. 1982b: 277.

***sulcifrons* Chapuis** 1869: 45. Syntypes ♀; Nouvelle Grenade; IRSNB, Brussels.
Distribution: South America (Colombia).
Notes: (3) Blandford 1897a: 165 (The species cited as *sulcifrons* actually is *furvus*).
References: (**ds**) Blackwelder 1947; Blandford 1897a; Hagedorn 1910d: 32; Kleine 1912b: 188, 1914b: 341. (**tx**) Blandford 1897a: 165; Chapuis 1869: 45, 1873: 253; Gemminger & Harold 1872: 2676; Hagedorn 1910a: 40; Wood, S. L. 1969b: 6, 1969c: 121.

***suturalis* Eggers** 1943a: 349. Holotype ♀; Bolivia (Cochabamba); USNM, Washington.
Distribution: South America (Bolivia).

References: (**tx**) Anderson, W. H. & Anderson 1971: 33; Eggers 1942a: 16, 1943a: 349.

***tetricus* Wood** 1977c: 389. Holotype ♂; La Carbonera Experimental Forest, 50 km NW Merida, Merida, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Eschweileria* sp.
References: (**tx**) Wood, S. L. 1977c: 387, 389.

***texanus* Schaeffer** 1908: 222. Lectotype ♂; Esparza Ranch, Brownsville, Texas [USA]; USNM, Washington, designated by Wood 1982b: 273.
Distribution: North America (Nuevo Leon in Mexico/ Florida, Louisiana, South Carolina, Texas in USA).
Hosts: *Celtis iguaneus, C. laevigatus, Condalia obtusifolia*.
References: (**ec**) Equihua & Atkinson 1986: 625. (**hb**) Equihua & Atkinson 1986: 625; Wood, S. L. 1982b: 273. (**ds**) Chamberlin 1939: 144; Equihua & Atkinson 1986: 625; Kirk 1969; Leng 1920: 338; Wood, S. L. 1982b: 273. (**tx**) Blackman 1921: 4; Chamberlin 1939: 144; Hagedorn 1910a: 40; Schaeffer 1908: 222; Swaine 1918a: 59; Wood, S. L. 1982b: 273.

***transversus* Chapuis** 1869: 44. Syntypes 4, sex?; Colombie; IRSNB, Brussels.
Distribution: South America (Colombia).
References: (**ds**) Blackwelder 1947; Hagedorn 1910d: 32; Kleine 1912b: 188, 1914b: 341. (**tx**) Chapuis 1869: 44, 1873: 252; Gemminger & Harold 1872: 2676; Hagedorn 1910a: 40.

***tuberculatus* (Eggers)** 1943a: 348 (*Dryotomus*). Holotype, sex?; Bolivia (Cochabamba); USNM, Washington.
Distribution: South America (Bolivia).
References: (**tx**) Anderson, W. H. & Anderson 1971: 35; Eggers 1943a: 348; Schedl 1962q: 487.

***uniseriatus* Eggers** 1943a: 350. Lectotype ♀; Bolivia: Cochabamba; USNM, Washington, designated by Anderson & Anderson 1971: 35.
Distribution: South America (Bolivia).
References: (**tx**) Anderson, W. H. & Anderson 1971: 35; Eggers 1943a: 350–351.

***venezuelensis* (Schedl)** 1936i: 105 (*Phloeophthorus*). Holotype ♀; Venezuela; Schedl Collection in NHMW, Wien.
Distribution: South America (Venezuela).
Hosts: *Eschweilera* sp.
References: (**ds**) Blackwelder 1947: 785. (**tx**) Eggers 1943a: 346; Schedl 1936i: 105.

***vesculus* Wood** 1977c: 392. Holotype ♀; 5 km W El Pino, Zulia, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Ochroma* sp.
References: (**tx**) Wood, S. L. 1977c: 392.

***vestitus* Eggers** 1943a: 349. Holotype ♀; Bolivia, Cochabamba; USNM, Washington.
Distribution: South America (Bolivia).
References: (**tx**) Anderson, W. H. & Anderson 1971: 35; Eggers 1942a: 16, 1943a: 349.

***willei* Schedl** 1937g: 66. Syntypes, sex?; Lima, Peru; Schedl Collection in NHMW, Wien and IPKE, Eberswalde.
Distribution: South America (Chile/ Peru).
References: (**ds**) Blackwelder 1947; Schedl 1965g: 25, 1972d: 133. (**tx**) Schedl 1937g: 66, 1955e: 255, 1965g: 25, 1972d: 133.

chiliensis Eggers 1942a: 16. Holotype, sex?; Chile (Quillota bei Valparaiso); Hamburg Museum, lost, Eggers cotype in NHMW, Wien. Synonymy: Schedl 1955e: 255.
References: (**tx**) Eggers 1942a: 16; Schedl 1951d: 16, 1955e: 255.

Tribe Phloeosinini Nusslin

Phloeosinides
References: Nusslin 1912: 273.

Phloeosinina
References: Nunberg 1954: 15.

Phloeosina
References: Balachowsky 1949a: 105; Reitter 1913a: 31.

Phloeosinini
References: Nobuchi 1985c: 8; Wood, S. L. 1978a: 112, 1982b: 282–347, 1986: 49.

Genus *Phloeocranus* Schedl

PHLOEOCRANUS SCHEDL 1942d: 7. Type-species: *Phloeocranus bruchoides* Schedl, monobasic.
Diamerides Browne 1949b: 893. Type-species: *Diamerides litseae* Browne = *Phloeocranus bruchoides* Schedl. Synonymy: Schedl 1954a: 137.
References: (**tx**) Browne 1949b: 893; Schedl 1954a: 137.
References: (**hb**) Wood, S. L. 1986a: 51. (**ds**) Wood, S. L. 1986a: 51. (**tx**) Browne 1961: 59; Schedl 1942d: 7, 1954a: 137; Wood, S. L. 1986a: 51.

***bruchoides* Schedl** 1942d: 8. Syntypes, sex?; Java, Semarang teak-forest; Schedl Collection in NHMW, Wien, and Kalshoven Collection.
Figures: Wood 1986a: 50 (adult).
Distribution: Asia (Uttar Pradesh in India/ Malaya/ Sri Lanka), Indonesia (Java).
Hosts: *Litsea amara, L.* sp.
References: (**hb**) Kalshoven 1958b: 162. (**tx**) Schedl 1942d: 8, 1972p: 152; Wood, S. L. 1986a: 50 (adult).
litseae Browne 1949: 894 (*Diamerides*). Holotype ♀; Malaya: Kelantan, Jeram; BMNH, London. Synonymy: Schedl 1954a: 137.
References: (**hb**) Browne 1961c: 59. (**ds**) Browne 1949: 894, 1961c: 59, 1970: 539. (**tx**) Browne 1949: 894; Schedl 1954a: 137, 1972p: 152, 1979c: 140.

Genus *Phloeoditica* Schedl

PHLOEODITICA SCHEDL 1962b: 189. Type-species: *Kissophagus curtus* Eggers, subsequent designation by Wood 1986a: 52.
Notes: (1) The generic affinity of *curtus* was verified; the other species are unknown to us.
References: (**hb**) Wood, S. L. 1986a: 52. (**ds**) Wood, S. L. 1986a: 52. (**tx**) Browne 1966: 233–247; Schedl 1962b: 189, 1963h: 260; Wood, S. L. 1986a: 52.

***curtus* (Eggers)** 1925: 155 (*Kissophagus*). Syntypes 3, sex?; Tenasserim; Prague Museum and Eggers Collection, Eggers syntype in NHMW, Wien.
Distribution: Asia (Burma/ Andaman Islands, Assam, Karnataka, Tamil Nadu in India).
Hosts: *Pongamia glabra*.
References: (**ds**) Schedl 1971a: 275. (**tx**) Eggers 1925: 155; Schedl 1962b: 184, 189, 1963h: 260.

***elegans* Schedl** 1962b: 190. Holotype ♀; Tonkin: Reg. de Hoa-Binh; MNHN, Paris.
Distribution: Asia (Tonkin Island in Vietnam).
References: (**ds**) Schedl 1965a: 339. (**tx**) Schedl 1962b: 190.

***phloeosinoides* Browne** 1966: 243. Holotype, sex?; Philippines: Tawi Tawi, Tarawakan; UZMC, Copenhagen.
Distribution: Philippine Islands (Tarawakan).
References: (**tx**) Browne 1966: 243; Nobuchi 1983: 299.

***setosus* (Eggers)** 1939b: 3 (*Kissophagus*). Holotype, sex?; Nordost-Birma (Kambaiti); NHR, Stockholm.
Distribution: Asia (Burma).
References: (**tx**) Eggers 1939b: 3; Schedl 1962b: 188, 1963h: 260.

Genus *Dendrosinus* Chapuis

DENDROSINUS CHAPUIS 1869: 28. Type-species: *Hylesinus globosus* Eichhoff, monobasic.
References: (**hb**) Wood, S. L. 1986a: 52. (**ds**) Wood, S. L. 1986a: 52. (**tx**) Arnett 1960: 1040, 1968: 1040; Bruck 1936a: 42; Chamberlin 1939: 116, 191–192; Chapuis 1869: 28, 1873: 234; Eggers 1930: 167; Hagedorn 1910a: 51, 1910d: 18; Lucas 1920: 230; Schedl 1958f: 33–46; Wood, S. L. 1982b: 282–285, 1986a: 52.

***ater* Eggers** 1930a: 167. Holotype ♂; OstBolivia [Cochabamba]; USNM, Washington.
Distribution: South America (Argentina/ Bolivia/ Brazil).
Notes: (1) On the reprint [Eggers 1930a: 167] sent to Beeson, Eggers had inserted in ink the word "Cochabamba" after the OstBolivia type locality.
References: (**ds**) Blackwelder 1947: 785; Schedl 1960a: 77. (**tx**) Anderson, W. H. & Anderson 1971: 5; Eggers 1930a: 167; Schedl 1958f: 38, 1960a: 77, 1979c: 29.
hirsutus Schedl 1958f: 38. Lectotype ♀; Argentinien, Santa Fe, Dep. Garay; Schedl Collection in NHMW, Wien, designated by Wood 1985: 268. Synonymy: Wood 1985: 268.
References: (**tx**) Schedl 1958f: 38, 1979c: 117; Wood, S. L. 1985: 268.

***bourreriae* Schwarz** 1920: 225. Holotype, sex?; Marathon, Key Vaca, Florida [USA]; USNM, Washington.
Figures: Schwarz 1920: 223, 225 (adult, galleries).
Distribution: Antilles Islands (Jamaica/ Puerto Rico), North America (Florida in USA).
Hosts: *Bourreiria havanensis, Eugenia buxifolia, Torrubia longifolia*.
References: (**bv**) Barr, B. A. 1969: 641. (**cn**) Doane et al. 1936. (**hb**) Chamberlin 1939: 191; Doane et al. 1936; Wood, S. L. 1982b: 283. (**ds**) Blackwelder 1947: 785; Bright 1972d: 37, 1985c: 171; Chamberlin 1939: 191; Kleine 1934a: 131;

Leng & Mutchler 1927: 51; Wolcott 1936: 318, 1948: 384; Wood, S. L. 1982b: 283. (**tx**) Bright 1972d: 37, 1985c: 171; Bruck 1936a; Chamberlin 1939: 191; Eggers 1930a: 168, 1934b: 27; de Ruette 1970: 100; Schedl 1979c: 441; Schwarz 1920: 222–225; Wood, S. L. 1982b: 283.

lima Eggers 1930a: 166. Holotype, sex?; Portorico; MNB, Berlin. Synonymy: Eggers 1934b: 27.

References: (**tx**) Eggers 1930a: 166, 1934b: 27.

***globosus* (Eichhoff)** 1868c: 149 (*Hylesinus*). Holotype, sex?; America bor.; Hamburg Museum, lost.

Distribution: South America (Argentina/ Bolivia/ Venezuela).

References: (**ds**) Blackwelder 1947: 785; Blandford 1897a: 156; Chapuis 1869: 28, 1873: 234; Hagedorn 1910d: 18; Kleine 1912b: 174, 1914b: 339, 341; Leng & Mutchler 1927: 51; Schedl 1971f: 146. (**tx**) Blandford 1897a: 156; Chapuis 1869: 28, 1873: 234; Eggers 1930a: 168, 1931c: 185; Eichhoff 1868c: 149; Gemminger & Harold 1872: 2673; Hagedorn 1910a: 52; Hopkins 1914: 120; LeConte 1868: 177; Lucas 1920: 230; Schedl 1958f: 34; Schwarz 1920: 222–224. (**ms**) Lucas 1920: 230.

***mexicanus* Wood** 1983a: 656. Holotype ♂; Estacion de Biologia, Chamela, Jalisco, Mexico; Wood Collection.

Distribution: North America (Jalisco in Mexico).

Hosts: *Guapira* sp.

References: (**ec**) Equihua & Atkinson 1986: 626. (**hb**) Atkinson et al. 1986: 50; Equihua & Atkinson 1986: 626. (**ds**) Atkinson et al. 1986: 50; Equihua & Atkinson 1986: 626. (**tx**) Wood, S. L. 1983a: 656.

***paraguayensis* Eggers** 1930a: 168. Holotype, sex?; Paraguay; USNM, Washington.

Distribution: South America (Brazil/ Paraguay).

References: (**ds**) Blackwelder 1947: 785; Schedl 1966f: 83, 1978c: 292. (**tx**) Anderson, W. H. & Anderson 1971: 24; Eggers 1930a: 168; Schedl 1979c: 184.

***puncticollis* Blandford** 1897a: 156. Holotype, sex?; Colombia; BMNH, London.

Distribution: South America (Colombia).

References: (**ds**) Blackwelder 1947: 785; Hagedorn 1910d: 18; Kleine 1912b: 174, 1914b: 341. (**tx**) Blandford 1897a: 156; Eggers 1930a: 167; Hagedorn 1910a: 52.

***transversalis* Blandford** 1897a: 156. Lectotype ♀; San Andres Tuxtla, Veracruz, Mexico; BMNH, London, designated by Wood 1982b: 284.

Distribution: North America (Costa Rica/ Veracruz in Mexico).

Hosts: Liana.

References: (**hb**) Wood, S. L. 1982b: 283. (**ds**) Atkinson 1989a: 59; Blackwelder 1947: 785; Ferrer 1942; Hagedorn 1910a: 18; Kleine 1912b: 174, 1914b: 348; Wood, S. L. 1982b: 283. (**tx**) Blandford 1897a: 156; Hagedorn 1910a: 52; Schedl 1940a: 338; Wood, S. L. 1982b: 283.

***vittifrons* Blandford** 1897a: 156. Syntypes, sex?; Brazil; BMNH, London.

Distribution: South America (Brazil).

References: (**ds**) Blackwelder 1947: 785; Hagedorn 1910a: 18; Kleine 1912b: 174, 1914b: 336; Schedl 1973c: 153, 1976a: 51. (**tx**) Blandford 1897a: 156; Hagedorn 1910a; Schedl 1979c: 268; Schwarz 1920: 224.

Genus *Hyleops* Schedl

HYLEOPS SCHEDL 1938f: 35. Type-species: *Hyleops glabratus* Schedl, monobasic.

References: (**hb**) Wood, S. L. 1986a: 52. (**ds**) Wood, S. L. 1986a: 52. (**tx**) Schedl 1938f: 35; Wood, S. L. 1986a: 52.

***glabratus* Schedl** 1938f: 36. Syntypes ♂; Nanango, Queensland, Australia; BMNH, London, and Schedl Collection in NHMW, Wien.

Figures: Schedl 1938f: 35.

Distribution: Australia (Queensland).

Hosts: *Araucaria cunninghamii*.

References: (**bv**) Wylie 1982. (**cn**) Wylie 1982; Yule 1873. (**hb**) Wylie 1982. (**ds**) Schedl 1975h: 352. (**tx**) Schedl 1938f: 36, 1979c: 105.

Genus *Carphotoreus* Wood

CARPHOTOREUS WOOD 1973c: 171. Type-species: *Chaetophloeus alni* Bright, original designation.

References: (**hb**) Wood, S. L. 1986a: 52. (**ds**) Wood, S. L. 1986a: 52. (**tx**) Wood, S. L. 1973c: 171, 1982b: 285, 1986a: 52.

***alni* (Bright)** 1972b: 1492 (*Chaetophloeus*). Holotype ♀; 42 km S Juchatengo, Oaxaca, Mexico; CNCI, Ottawa.

Figures: Bright 1972b: 1490.

Distribution: North America (Oaxaca in Mexico).

Hosts: *Alnus* sp.

Notes: (1) Wood 1973c: 171 (to *Carphotoreus*).

References: (**ds**) Wood, S. L. 1982b: 285. (**tx**) Bright 1972b: 1490, 1492; McNamara 1977: 194; Wood, S. L. 1973c: 171, 1982b: 285.

Genus *Catenophorus* Nunberg

CATENOPHORUS NUNBERG 1956b: 195. Type-species: *Catenophorus congonus* Nunberg, original designation.

References: (**hb**) Wood, S. L. 1986a: 52. (**ds**) Wood, S. L. 1986a: 52. (**tx**) Nunberg 1956b: 195; Wood, S. L. 1986a: 52.

***congonus* Nunberg** 1956b: 197. Holotype ♀; Belgian Congo; IZW, Warsaw.

Distribution: Africa (Zaire).

References: (**tx**) Nunberg 1956b: 197.

Genus *Cladoctonus* Strohmeyer

CLADOCTONUS STROHMEYER 1911b: 17. Type-species: *Cladoctonus affinis* Strohmeyer, monobasic.

Hoplites Eggers 1923a: 140. Type-species: *Hoplites banosus* Eggers, monobasic, preoccupied by Dejean 1833: 150.
References: (**tx**) Eggers 1923a: 140–141, 1940a: 123–141; Wood, S. L. 1961c: 2, 1982b: 286.

Hoplitontus Wood 1961c: 2. Type-species: *Hoplites banosus* Eggers, automatic, replacement name for *Hoplites* Eggers. Synonymy: Schedl 1963h: 264.
References: (**tx**) Schedl 1963h: 264; Wood, S. L. 1961c: 2, 1982b: 286.

Hoplitophthorus Wood 1961c: 2. Type-species: *Hoplitophthorus sentosus* Wood = *Hoplites interruptus* Eggers, original designation. Synonymy: Schedl 1963h: 264.
References: (**tx**) Schedl 1963h: 264; Wood, S. L. 1961c: 2, 1982b: 286.

Notes: (3) Schedl 1957b: 150, 1959n: 392 (cites *robustus*, nomen nudum).
References: (**hb**) Wood, S. L. 1986a: 52. (**ds**) Wood, S. L. 1986a: 52. (**tx**) Hopkins 1914: 226; Lucas 1920: 188; Schedl 1957d: 66, 1959n: 389–392, 1963h: 264; Strohmeyer 1911b: 17–18; Wood, S. L. 1982b: 286, 1986a: 52.

***affinis* Strohmeyer** 1911h: 17. Holotype, sex?; Aethiopia; Strohmeyer Collection.
Figures: Strohmeyer 1911h: 17 (antenna, tibia), Schedl 1959n: 390 (antenna).
Distribution: Africa (Ethiopia).
References: (**ds**) Kleine 1912b: 169, 1914b: 324; Schedl 1979b: 415, 1982: 278. (**tx**) Eggers 1920: 118; Hopkins 1914: 118; Lucas 1920: 188; Schedl 1959n: 390; Strohmeyer 1911h: 17–18; Wichmann 1911b: 174. (**ms**) Lucas 1920: 188.

***amanicus* Eggers** 1920: 118. Holotype, sex?; Amani, Ostafrika; Hamburg Museum, lost. Neotype, ♀; Kenya; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 17.
Distribution: Africa (Kenya/ Tanzania).
Hosts: *Acacia xanthophloea*.
References: (**ds**) Gardner 1957a: 30. (**tx**) Eggers 1920: 118, 1932c: 23, 1936c: 33–34; Schedl 1959n: 391, 1979c: 17.

***atrocis* Wood** 1974a: 12. Holotype ♂; about 260 km N Xavantia, Mato Grosso, Brazil, at 12 degrees 49′ South, 51 degrees 46′ West; BMNH, London.
Distribution: South America (Brazil).
References: (**tx**) Wood, S. L. 1974a: 12.

***banosus* (Eggers)** 1923a: 141 (*Hoplites*). Lectotype, sex?; Philippine Islands: Los Banos (Luzon); USNM, Washington, designated by Anderson & Anderson 1971: 5.
Distribution: Indonesia (Java), Philippine Islands (Luzon).
References: (**hb**) Kalshoven 1958b: 163. (**ds**) Schedl 1966b: 5. (**tx**) Anderson, W. H. & Anderson 1971: 5; Eggers 1923a: 141, 1927b: 406, 1940a: 125; Nobuchi 1983: 299; Schedl 1963h: 262, 1979c: 33; Wood, S. L. 1961c: 2.

nonseptis Schedl 1942a: 173 (*Phloeosinus*). Syntypes, sex?; Philippinen, Los Banos; BMNH, London, and Schedl Collection in NHMW, Wien. Synonymy: Schedl 1963h: 262.
References: (**hb**) Zocchi 1956: 141. (**ds**) Nobuchi 1983: 299; Razzauti 1956: 141; Schedl 1966b: 10. (**tx**) Schedl 1942a: 173, 1963h: 262; Zocchi 1956: 141.

***brevisetosus* Bright** 1972d: 46. Holotype ♂?; Duncans, Trelawny Parish, Jamaica; CNCI, Ottawa.
Figures: Bright 1972d: 35.
Distribution: Antilles Islands (Jamaica).
References: (**ds**) Bright 1985c: 171. (**tx**) Bright 1972d: 35, 46, 1985c: 171; McNamara 1977: 194.

***contractus* Schedl** 1975f: 340. Holotype, sex?; Bulolo, Morobe District, New Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1975f: 340.

***corumbensis* (Eggers)** 1951: 149 (*Hoplites*). Holotype, sex?; Brasil (Corumba, Staat Matto Grosso; Eggers Collection, in NHMW, Wien.
Distribution: South America (Bolivia/ Brazil).
References: (**tx**) Eggers 1951: 149; Schedl 1979c: 66; Wood, S. L. 1961c: 2.

boliviae Wood 1961d: 106 (*Hoplitophthorus*). Holotype ♀; route between Boyuibe to Charagua via Cueva, Ingri, etc., Bolivia; USNM, Washington. Synonymy: Wood 1985: 266.
References: (**tx**) Schedl 1963j: 479; Wood, S. L. 1961d: 106, 1985: 266.

***cubensis* (Wood)** 1961d: 107 (*Hoplitophthorus*). Holotype ♂; Cayamas, Cuba; USNM, Washington.
Figures: Atkinson 1989a: 63.
Distribution: Antilles Islands (Cuba), North America (Campeche in Mexico).
Hosts: *Brosimum alicastrum*.
References: (**ds**) Atkinson 1989a: 59; Bright 1985c: 171. (**tx**) Atkinson 1989a: 63; Bright 1985c: 171; Schedl 1963j: 479; Wood, S. L. 1961d: 107.

***eggersi* Wichmann** 1911b: 174. Syntypes 3, sex?; Aethiopia (Harras); Wichmann Collection, not located.
Distribution: Africa (Ethiopia/ Kenya/ Tanzania).
Hosts: *Acacia* sp.
References: (**ds**) Gardner 1957a: 30; Schedl 1959q: 705, 1975h: 350, 1975k: 275, 1977c: 394. (**tx**) Eggers 1920: 118, 1936c: 33–35; Schedl 1958: 705, 1959n: 391, 1979c: 86; Wichmann 1911b: 174, 1914: 414.

***elongatus* Schedl** 1967e: 222. Holotype, sex?; Mount Fouari reservation near Gabon and Nigeria; NHMB, Budapest.
Distribution: Africa (Gabon/ Nigeria).
References: (**ds**) Schedl 1972e: 279. (**tx**) Schedl 1967e: 222, 1979c: 89.

***interruptus* (Eggers)** 1940a: 126. Holotype, sex?; Guadeloupe: Fleutiaux Collection, cotype Eggers Collection, this cotype in NHMW, Wien.
Distribution: Antilles Islands (Guadeloupe), South America (Colombia).
Hosts: *Artocarpus* sp. *Citrus sinensis*.
References: (**ds**) Bright 1985c: 171. (**tx**) Bright 1985c: 171; Eggers 1940a: 126; Wood, S. L. 1961c: 2.

sentus Wood 1961c: 3 (*Hoplitophthorus*). Holotype ♂; La Cuchilla, Sevilla, Colombia; Wood Collection. Synonymy: Wood 1985: 267.
References: (**ds**) Bright 1985c: 171. (**tx**) Bright 1985c: 171; Wood, S. L. 1961c: 3, 1961d: 107, 1985: 267.

***major* (Eggers)** 1940a: 125 (*Hoplites*). Holotype, sex?; Guadeloupe (Trois-Rivieres); MNHN, Paris, cotype Eggers Collection, this cotype in NHMW, Wien.
Distribution: Antilles Islands (Guadeloupe).
Hosts: *Ficus laurifolia*.
References: (**ds**) Bright 1985c: 171. (**tx**) Bright 1985c: 171; Eggers 1940a: 125–126, 1951: 149; Schedl 1979c: 145; Wood, S. L. 1961c: 2.

***natalensis* Eggers** 1936c: 34. Holotype, sex?; Natal: Malvern; BMNH, London.
Figures: Schedl 1959r: 389 (adult).
Distribution: Africa (Natal in South Africa).
Hosts: *Acacia* sp.
References: (**tx**) Eggers 1936c: 34–35; Schedl 1959n: 392, 1979c: 163.

***similis* Nunberg** 1969a: 391. Holotype, sex?; Cote d'Ivoire, Bingerville; MRCB, Tervuren.
Distribution: Africa (Ivory Coast).
References: (**tx**) Nunberg 1969a: 391.

***tuberculatus* Schedl** 1973a: 369. Holotype, sex?; Bolivien, Guayaramerin (Beni), 200 m from river; NHMB, Budapest.
Distribution: South America (Bolivia).
References: (**tx**) Schedl 1973a: 369.

Genus *Phloeosinopsioides* Schedl

PHLOEOSINOPSIOIDES SCHEDL 1964k: 317. Type-species: *Phloeosinopsis triseriatus* Schedl, automatic, replacement name for *Phloeosinopsis* Schedl 1964c: 297 (nec 1936j: 23).

Phloeosinopsis Schedl 1964c: 297. Type-species: *Phloeosinopsis triseriatus* Schedl, original designation, preoccupied by Schedl 1936j: 23.
References: (**tx**) Schedl 1964c: 297.

References: (**hb**) Wood, S. L. 1986a: 52. (**ds**) Wood, S. L. 1986a: 52. (**tx**) Schedl 1964c: 297, 1964k: 317; Wood, S. L. 1986a: 52.

***formosanus* (Schedl)** 1935k: 479 (*Xylechinus*). Holotype ♂; Formosa; Schedl Collection in NHMW, Wien.
Distribution: Asia (Taiwan), Philippine Islands (Luzon).
References: (**ds**) Nobuchi 1967: 19, 1983: 299; Schedl 1966b: 6. (**tx**) Schedl 1935k: 479, 1936g: 524, 1961f: 88, 1979c: 99.

***leai* (Schedl)** 1936g: 524 (*Xylechinus*). Syntypes ♂?; Queensland: Cairns district; SAM, Adelaide, restricted by Schedl 1979c: 137.
Distribution: Australia (Queensland).
References: (**ds**) Schedl 1936g: 524. (**tx**) Schedl 1936g: 524, 1979c: 137.

***pumilus* Wood** 1985: 274. Holotype ♂; Bulolo, Morobe District, New Guinea; Wood Collection.
Distribution: New Guinea.
Hosts: Liana.
References: (**tx**) Wood, S. L. 1985: 274.

***triseriatus* Schedl** 1964c: 297 (*Phloeosinopsis*). Holotype ♀; Sumba-Insel; Schedl Collection in NHMW, Wien.
Distribution: Indonesia (Sumba Island), New Guinea.
Hosts: Liana.
References: (**tx**) Schedl 1964c: 297, 1964m: 317, 1979c: 256.

papuanus Schedl 1970a: 128 (*Xylechinus*). Holotype, sex?; New Guinea, Long Island L. A., Bulolo, Morobe District; CSIRO, Canberra. Synonymy: Wood 1985: 269.
References: (**tx**) Schedl 1970a: 128–129; Wood, S. L. 1985: 269.

Genus *Phloeosinus* Chapuis

PHLOEOSINUS CHAPUIS 1869: 37. Type-species: *Hylesinus thujae* Perris, subsequent designation by Hopkins 1914: 126.

Phloeosinites Hagedorn 1906: 118. Type-species: *Phloeosinites rehi* Hagedorn, subsequent designation by Hopkins 1914: 126. Synonymy: Hagedorn 1910d: 25, Wood 1992:(in press).
References: (**tx**) Hagedorn 1906: 118, 1910d: 25; Pfeffer 1989a: 32; Schedl 1947a: 33.

Keys: Blackman 1942c: 400 and Wood 1982b: 287 for North America; Bright 1976d: 82–83 for Canada; Schedl 1950b: 36 for Europe and part of Asia, 1947a: 34 for fossil species; Murayama 1963b: 22 for Japan.

Notes: (3) Keremidiev 1966: 401–411 (*passerinii*, nomen nudum).

References: (**ay**) Fuchs 1912: 5–48; Gardner 1934: 37, 1950b; Nusslin 1911, 1912. (**ec**) Cushman 1919: 534; Massey 1969: 43–52. (**hb**) Barbey 1901: 58; Eichhoff 1881: 131; Postner 1974: 415; Schedl 1958k: 152, 188, 192; Tredl 1907: 10; Wood, S. L. 1986a: 52. (**ds**) Nobuchi 1969a: 53; Wood, S. L. 1986a: 52. (**tx**) Arnett 1960: 1035, 1041, 1968: 1035, 1041; Balachowsky 1949a: 117–121; Barbey 1901: 58; Beal & Massey 1945: 56; Bedel 1888b: 389, 393; Beeson 1941: 377–378; Blackman 1922: 48, 59–60, 1942c: 397–404, 1943: 398; Blandford 1894d: 68, 1897a: 143, 160; Blatchley & Leng 1916: 658–659; Bright 1975: 135, 1976d: 81–91; Bright & Stark 1973: 42;

Browne 1961c: 61, 1963c: 53; Bruck 1933: 54–56, 1935: 41, 1936a: 41; Chamberlin 1939: 115, 168–182, 1958: 53, 79–94; Chapman 1957: 3–4; Chapuis 1869: 37, 1873: 245; Choo 1983: 45–48; Decaux 1890: 124; Dodge 1938: 17; Eggers 1936: 90, 1939: 114–123; Eichhoff 1881a: 38, 1883a: 103; Formanek 1907: 17; Gardner 1934: 3, 7; Hagedorn 1906: 119, 1910a: 35, 64–66, 1910d: 25; Hoffmann 1938: 16; Hopkins 1914: 126, 1915: 199, 202, 209, 226; Hopping, R. 1922: 128–134; Karaman 1972: 86; Keen 1938: 32, 56; LeConte 1876: 381; LeConte & Horn 1883: 522–523; Leng 1920: 338; Mickle 1953: 32–33; Murayama 1955: 88–98, 1963b: 21–29; Niisima 1909: 123–125, 1942: 69–74; Nunberg 1954: 29–30; Pfeffer 1943a: 103–118, 1955: 133–140; Postner 1974: 415; Reitter 1894: 49, 1913: 31, 36; Sampson 1910: 35; Schedl 1936j: 23, 1939n: 12, 1941d: 383, 1947a: 33, 1950b: 35–38, 58–61, 81–84, 96–98, 1951: 112–116, 1960g: 130–141, 1966b: 9, 1980a: 5, 1981b; Scheerpeltz & Winkler 1930: 255; Schimitschek 1937: 45–60; Sokanovskii 1954: 18; Spessivtsev 1931: 85; Stark 1952: 301–308; Stebbing 1905: 8; Swaine 1909: 128, 1913: 41–43, 1918a: 67–70; Tsai & Yin 1965: 84–99; Winkler 1932: 1641; Wood, S. L. 1974g: 236–237, 1982b: 286–315, 1986a: 52; Zocchi 1956: 139–225.

***abietis* Tsai & Yin** 1964: 92, 95. Holotype ♂; Yunnan, China; IZAS, Beijing.
Distribution: Asia (Yunnan in China).
Hosts: *Abies delavayi*.
References: (**tx**) Tsai & Yin 1964: 92, 95.

***acatayi* Schedl** 1958e: 33. Syntypes ♂♀; Turkei: Bozdag bei Acipayam; Forstlichen Fakultat der Univ. Istanbul, and Schedl Collection in NHMW, Wien.
Distribution: Asia (Turkey).
Hosts: *Cedrus libani, C. libanotica, Juniperus excelsa*.
Notes: Schedl 1979c: 10 (citation of holotype invalid).
References: (**ay**) Courtois et al. 1965. (**bv**) Chararas, Berton, & Bregeaut 1964; Chararas, Desveaux, & Kogane-Charles 1978b. (**cn**) Ekici 1971. (**hb**) Acatay 1961: 3; Chararas, Berton, & Bregeaut 1964; Ekici 1971: 56. (**ds**) Acatay 1961: 3; Chararas 1976a; Schedl 1959h: 100. (**tx**) Schedl 1958e: 33, 1959h: 100, 1979c: 10.

***antennatus* Swaine** 1924b: 146. Holotype ♂; Strawberry, California [USA]; CNCI, Ottawa.
Distribution: North America (California, Oregon in USA).
Hosts: *Libocedrus decurrens*, rare in *Cupressus* sp., *Pinus contorta, Pseudotsuga menziesii*.
Notes: (3) Blackman 1942c: 415 (redescribed).
References: (**cn**) Anonymous 1983d; Doane et al. 1936; Keen 1938: 32; Razzauti 1956: 141; Schuder 1969: 75. (**ec**) Keen 1938: 32; Razzauti 1956: 141. (**hb**) Bright & Stark 1973: 45; Chamberlin 1939: 177, 1958: 84; Doane et al. 1936; Keen 1938: 32; Razzauti 1956: 141; Wood, S. L. 1982b: 310; Zocchi 1956: 141. (**ds**) Anonymous 1983d; Blackman 1942c: 415; Blackwelder & Blackwelder 1948; Bright & Stark 1973: 45; Chamberlin 1925, 1939: 177, 1958: 84; Furniss, R. L. & Carolin 1977: 367; Keen 1929a: 19, 1938: 32; Kleine 1934a: 135; Leng & Mutchler 1927: 51; Schuder 1969: 75; Wood, S. L. 1972a: 408, 1982b: 310. (**tx**) Blackman 1942c: 415; Bright 1967b: 676; Chamberlin 1939: 177, 1958: 84; Keen 1929a: 19; de Ruette 1970: 105; Swaine 1924b: 146; Wood, S. L. 1957e: 400, 1972a: 408, 1982b: 310; Zocchi 1956: 141.

pseudotsugae Chamberlin 1955: 117. Holotype ♂?; Tiller, Oregon [USA]; CAS, San Francisco.
Synonymy: Wood 1957c: 400.
References: (**hb**) Chamberlin 1958: 83. (**ds**) Chamberlin 1958: 83. (**tx**) Chamberlin 1955: 117, 1958: 83; de Ruette 1970: 106; Wood, S. L. 1957c: 400.

* ***arcessitus* (Scudder)** 1893: 165 (*Phloeosinites*). Holotype, sex?; Florissant, Colorado Miocene [USA]; Scudder Collection.
Distribution: North America (fossil in Colorado Miocene in USA).
References: (**tx**) Scudder 1893: 165.

***arisanus* Niisima** 1942: 73. Syntypes, sex?; Formosa (Arisan-Berg); Nobuchi Collection, Ibaraki.
Figures: Nobuchi 1967:pl. 1.
Distribution: Asia (Taiwan).
Hosts: *Chamaecyparis formosanus*.
References: (**cn**) Razzauti 1956: 141. (**ec**) Razzauti 1956: 141. (**hb**) Zocchi 1956: 141. (**ds**) Niisima 1942: 73; Nobuchi 1967: 19. (**tx**) Niisima 1942: 73; Nobuchi 1967:pl. 1; Zocchi 1956: 141.

***arizonicus* Blackman** 1942c: 424. Holotype ♂; Santa Catalina Mountains, Arizona [USA]; USNM, Washington.
Figures: Blackman 1942c:figs. 4, 4A (male declivity).
Distribution: North America (Arizona in USA).
Hosts: *Cupressus arizonica*.
References: (**cn**) Razzauti 1956: 141. (**ec**) Razzauti 1956: 141. (**hb**) Razzauti 1956: 141; Wood, S. L. 1982b: 310; Zocchi 1956: 141. (**ds**) Blackwelder & Blackwelder 1948; Furniss, R. L. & Carolin 1977: 367; Wood, S. L. 1982b: 310. (**tx**) Blackman 1942c: 424; Wood, S. L. 1982b: 310; Zocchi 1956: 141.

***armatus* Reitter** 1887b: 192. Holotype ♂; Syrien; NHMW, Wien.
Figures: Balachowsky 1961: 247, 249, Chararas 1964c: 21, Grune 1979: 82, Schimitschek 1944: 157, 160 (male, galleries).
Distribution: Asia (Crete/ Cyprus/ Israel/ Lebanon/ Syria/ Turkey), North America (introduced in S California in USA).
Hosts: *Cupressus sempervirensis, C.* spp.

Notes: (3) Schedl 1950b: 112 (redescribed).
References: (**ay**) Chararas 1963c; Chararas et al. 1980. (**bv**) Balachowsky & Chararas 1964; Chararas 1964c, 1967a, 1980b: 561, 1982; Chararas et al. 1980; Grune 1979: 83; Mendel 1984. (**cn**) Acatay 1943a: 65, 1958: 129–130; Balachowsky & Chararas 1961: 245–257; Browne 1968b: 538; Chararas 1961a: 250, 1963: 3468–3470, 1964c; Klapperich 1973: 166; Mendel 1983a, 1987; Mendel et al. 1983; Morris, H. M. 1937: 21; Razzauti 1956: 141; Schimitschek 1938a: 298, 1938c: 2118, 1939d: 2118, 1944: 156. (**ec**) Acatay 1958; Annila & Perttunen 1964: 42; Balachowsky & Chararas 1964; Chararas 1963c; Fry 1989: 17; Halperin & Holzschuh 1984: 27; Mendel 1984, 1985, 1986a, 1986c: 115, 1986d: 130; Mendel & Halperin 1982; Razzauti 1956: 141. (**hb**) Acatay 1943a: 65, 1958; Balachowsky 1961; Balachowsky & Chararas 1964; Browne 1961c: 64, 1968b: 538; Chararas 1961a: 250, 1963c, 1964c; Halperin & Holzschuh 1984: 27; Henschel 1895a: 145; Lesne 1938: 169–170; Mendel 1984, 1987; Postner 1974: 417; Razzauti 1956: 141; Schimitschek 1938a: 298, 1944: 156; Zocchi 1956: 141. (**ds**) Balachowsky 1961; Browne 1968b: 538; Chararas 1964c; Chararas & Berton 1961: 235; Georghiou 1977: 74; Grune 1979: 83; Hagedorn 1910d: 26; Halperin 1966: 70; Halperin & Holzschuh 1984: 27; Hariri 1971: 262; Henschel 1895a: 145; Kleine 1912b: 183; Koch 1939: 291; Pfeffer 1935: 157, 1943a: 1, 8; Postner 1974: 417; Reitter 1894a: 50; Schedl 1961b: 185, 1967c: 69, 1969g: 289, 1971d: 433, 1979i: 289; Schimitschek 1938a: 298; Wood, S. L. 1992b: 85. (**tx**) Balachowsky 1961: 247, 249; Balachowsky & Chararas 1964: 15; Chararas 1964c: 21; Eggers 1931c: 186; Grune 1979: 82–83; Hagedorn 1910a: 65; Henschel 1895a: 145; Iablokoff-Khnzorian 1961: 157; Nunberg 1948b: 14; Pfeffer 1943a: 1, 8, 1955a: 134; Postner 1974: 417; Reitter 1887b: 192, 1894a: 50, 1913a: 37; Schedl 1934f: 1641, 1950b: 112; Zocchi 1956: 141. (**ms**) Chararas 1971a: 853; Mendel 1986a.

andresi Eggers 1927d: 120. Lectotype ♂; Stambul, auf turkischem Friedhof aus Cypressen; USNM, Washington, designated by Anderson & Anderson 1971: 4. Synonymy: Eggers 1931c: 186, Pfeffer 1935: 156, Schedl 1950b: 112.
References: (**ds**) Georghiou 1977: 74; Kleine 1934: 136; Pfeffer 1935: 157. (**tx**) Anderson, W. H. & Anderson 1971: 4; Eggers 1927d: 120, 1931c: 186; Michalski 1969b: 568; Schedl 1934f: 1641, 1950b: 112.

° ***assimilis* (Schedl)** 1947a: 37 (*Phloeosinites*). Holotype, sex?; Baltic ambre; Geologisch-Paleontologische Institut, Albertus Universitat, Konigsberg.
Distribution: Europe (fossil in Baltic amber).
References: (**ds**) Spahr 1981. (**tx**) Schedl 1947a: 17, 37.

***australis* Schedl** 1938f: 36. Holotype, sex?; Australia; Schedl Collection in NHMW, Wien.
Figures: Schedl 1938f: 37 (antenna).
Distribution: Australia.
Notes: (3) Schedl 1939f: 30 (named var. *negaensis*, later transferred it to *cribratus*).
References: (**cn**) Razzauti 1956: 141. (**ec**) Razzauti 1956: 141. (**hb**) Razzauti 1956: 141; Zocchi 1956: 141. (**ds**) Nobuchi 1983: 299; Schedl 1965g: 25, 1966b: 10. (**tx**) Schedl 1938f: 36; Zocchi 1956: 141.

***baumanni* Hopkins** 1905b: 79. Holotype ♂; Tacubaya, Distrito Federal, Mexico; USNM, Washington.
Figures: Bernal Redondo 1964: 8.
Distribution: North America (El Salvador/ Distrito Federal, Hidalgo, Morelos, Puebla in Mexico/ Arizona in USA).
Hosts: *Cupressus arizonicus, C. benthami, C. lindleyi, C. lusitanica*.
Notes: (3) Blackman 1942e: 437 (redescribed).
References: (**cn**) Razzauti 1956: 141. (**ec**) Bernal Redondo 1964; Razzauti 1956: 141. (**hb**) Atkinson et al. 1986: 23; Bernal Redondo 1964: 1–16; Burgos & Saucedo 1983: 65; Razzauti 1956: 141; Wood, S. L. 1982b: 298. (**ds**) Atkinson & Equihua 1985a: 77; Atkinson et al. 1986: 23; Blackman 1942c: 437; Blackwelder 1947; Burgos & Saucedo 1983: 65; Dominguez & Carrillo 1976: 141; Ferrer 1942; Furniss, R. L. & Carolin 1977: 367; Hagedorn 1910d: 26; Kleine 1912b: 183, 1914b: 348, 1934a: 135; Schedl 1963c: 157, 1977e: 41; Wood, S. L. 1982b: 298. (**tx**) Bernal Redondo 1964: 8; Blackman 1942c: 437; Hagedorn 1910a: 65; Hopkins 1905b: 79; Muskus, A. 1984: 57; Schedl 1940a: 337; Wood, S. L. 1982b: 298.

***bicolor* (Brulle)** 1832: 250 (*Hylesinus*). Syntypes, sex?; communique par M. de Laporte from Moree (Loir-et-Cher dept., France); not given.
Figures: Balachowsky 1949a: 118, Grune 1979: 82, Pfeffer 1989a:pl. 2, Schedl 1960g: 133, Stark 1952: 307 (male).
Distribution: Africa (Algeria/ Libya/ Morocco/ Tanzania/ Tunisia), Asia (Hebei, Jiangsu, Shandong, Shanxi, Sichuan, Yunnan in China/ Israel/ Syria/ Turkey), Europe (Albania/ Austria/ Belgium/ Bulgaria/ Corsica/ Czechoslovakia/ England/ France/ Germany/ Greece/ Hungary/ Italy/ Poland/ Portugal/ Romania/ Sardinia/ Sicily/ Spain/ Switzerland/ W USSR/ Yugoslavia).
Hosts: *Biota orientalis, Cunninghamia lanceolata, Cupressus* spp., *Juniperus* spp., *Sequoia* sp., *Thujia* spp., *Callitris articulata*.
Notes: (3) Eggers 1934: 26 (identity discussed). Brulle 1832: 25 described the median frontal carina of the female; a carina is absent in both sexes of *Hylesinus toranio* (= *oleiperda*), thus removing that species from the consideration

given by Eggers. Reitter 1913: 37 (aberration *nigripes*, no status).
References: (**ay**) Chararas 1956a, 1956c; Marcu 1933a: 33; Negru 1968b: 802; Nusslin 1912c: 286; Parkin 1940: 367; Robertson 1961. (**bv**) Balachowsky & Chararas 1964: 15; Chararas 1967a, 1969, 1980b: 561, 1982; Chararas, Desceaux, & Kogane-Charles 1978b; Chararas & Deschamps 1962; Chararas et al. 1982: 1094. (**cn**) Acatay 1943a: 68; Anastassiadis 1963: 164–166; Baeta Neves 1952a; Chorbadzhievo 1929; Colbrant & Hatt 1962: 21–28; Crivellari 1950: 35–36; Favard 1957; Hammad 1961; Hoffmann 1938, 1952b: 402; Hrubik 1973, 1974; Schimitschek 1938a: 293, 1951a: 101, 1955c: 72; Wachtl 1901: 381. (**ec**) Acatay 1958: 129–130; Balachowsky & Chararas 1964: 16; Chararas 1956b, 1957d, 1959c, 1969: 1080–1083; Chararas et al. 1982: 1094; Fintzescu 1930; Kleine 1908c: 182; Thompson, W. R. 1943: 82; Tudor 1969: 34. (**hb**) Acatay 1943a: 68, 1958; Adeli 1972: 14; Baeta Neves & Goes 1944; Beffa 1949, 1961; Cecconi 1924; Chararas 1956a: 113–213, 1962c: 401, 1969; Chorbadzhievo 1929; Decaux 1889, 1890d, 1890e, 1890f, 1890g, 1891a; Favard 1957; Girard 1873; Hammad 1961; Knotek 1897: 144, 1898b: 321; Lesne 1938: 170; Parkin 1940: 364–367; Peyerimhoff 1919: 249; Schimitschek 1938a: 293; Simmel 1928: 154; Stark 1952: 307; Tschorbadjiev 1929: 159; Wachtl 1901: 381. (**ds**) Acloque 1896; Adeli 1972: 14; Audras 1966: 32; Audras & Schaefer 1957; Baeta Neves 1952a: 4–8; Baeta Neves & Goes 1944; Barthe 1896; Bedel 1888b: 393, 411; Beffa 1949; Blanchere & Robert 1889; Buresh & Lazarov 1956; Chararas 1962c: 401; Chararas & Berton 1961: 235; Chorbadzhievo 1929; Escalera 1919; Escherich 1932b; Ganglbauer 1904; Georghiou 1977: 74; Heyden, Reitter, & Weise 1891: 669, 1906: 708; Hoffmann 1938: 14–16, 1952b: 402; Kleine 1913a: 34; Knotek 1898b: 321; Koca 1905: 191; Koch 1939: 290; Kolubajiv 1934: 64; Langhoffer 1915c: 156; Luigioni 1929: 991; Novak, P. 1964; Peyerimhoff 1919: 249, 1933b: 373; Pfeffer 1936: 90; Pittioni 1943: 174; Pjatnitskii 1930a: 163; Postner 1974: 416; Ragusa 1924: 114; Reitter 1894a: 50, 1916: 276, 349; Sainte-Claire 1914: 468; Sainte-Claire & Mequignon 1938: 446; Schaufuss 1915: 1218; Schaum 1859: 95, 1862: 100; Schilsky 1909: 187; Schimitschek 1938a: 293, 1951a: 101; Stark 1927b: 86, 1952: 307; Stein 1868: 113; Stein & Weise 1877: 163; Strauch 1861: 123; Tredl 1907: 10; Tschorbadjiev 1929: 159; Wichmann 1927a: 54. (**tx**) Acloque 1896; Balachowsky 1949a: 120; Bedel 1888b: 393, 411; Beffa 1949, 1961; Brulle 1832: 250; Chararas 1956c; Csiki 1905; Doebner 1860; Eggers 1922b, 1934b: 26; Girard 1873; Hammad 1961; Iablokoff-Khnzorian 1961: 71; Luigioni 1929: 991; Nusslin 1912c: 286; Peyerimhoff 1918: 260; Pfeffer 1932b: 12; Portevin 1935: 314; Reitter 1894a: 50, 1913a: 37, 1916: 276, 349; Rey 1892b: 30; Schedl 1934f: 1641, 1950b: 96; Schimitschek 1955c: 72; Semenov 1903: 79; Stark 1952: 307. (**ms**) Escherich 1932b; Hrubik 1974.

aubei Perris 1855: 78 (*Hylesinus*). Syntypes (?) ♀; Department des Landes, France; MNHN, Paris. Synonymy: Reitter 1916: 349, Eggers 1934b: 26.

Notes: (3) Schedl 1950b: 96 (redescribed).
References: (**ay**) Ferriera, M. C. 1989; Nusslin 1912: 286.(**bv**) Barr, B. A. 1969: 642; Ferriera, M. C. 1989; Grune 1979: 83. (**cn**) Browne 1968b: 538; Kleine 1932a: 296; Mendel 1983a, 1987; Mendel et al. 1983; Moussion 1988; Rabasse 1980; Razzauti 1956: 130, 144; Schimitschek 1938c: 2118, 1944: 154. (**ec**) Arambourg 1964: 115; Ferriera, M. C. 1989; Fry 1989: 17; Halperin & Holzschuh 1984: 27; Kleine 1944: 74, 80; Mendel 1986a, 1986c: 115, 1986d: 130; Mendel & Halperin 1981; Nosek, P. 1952: 415, 1959a: 118, 1959b: 87; Perris 1856a: 283; Razzauti 1956: 130, 144; Schedl 1960i: 131; Szczepanski 1960a: 408; Tudor 1969: 34; Wichmann 1955a: 94, 98; Yang 1989. (**hb**) Baeta Neves & Goes 1944; Bodenheimer 1930: 354, 380; 1935; Borzi 1882; Browne 1968b: 538; Csiki 1906: 13; Decaux 1889: 161–164, 1890f: 137; Eichhoff 1881a: 38, 132, 1892b: 99; Escalara 1919: 105; Fintescu 1930a: 246; Gardner 1957: 31; Gusev & Rimski-Korsakov 1934: 1940; Halperin & Holzschuh 1984: 27; Henschel 1895a: 146; Hoch 1888: 146; Jazentkowsky 1931; Kleine 1932a: 296, 1944: 125–133; Knotek 1894a: 553–554, 1907: 280–282; Kraemer 1951: 248; Langhoffer 1915b: 156, 1915c: 74; Lezava 1929: 4; Luigioni 1929: 91; Lunardoni & Leonardi 1889: 434; Mendel 1987; Nikitin & Sajzew 1926; Nosek 1959a: 118, 1959b: 87; Perris 1856a: 283; Peyerimhoff 1933: 373–383; Pfeffer 1989a: 33; Pittioni 1943: 174; Porta 1932: 345; Postner 1974: 416; Razzauti 1956: 130, 144; Roubal 1931: 454, 1936: 4, 1942: 265; Rupertsberger 1880: 226; Schedl 1960i: 131, 1981b: 62; Schedl & Lindberg 1959: 13; Schilsky 1888: 121; Schimitschek 1937: 46, 1938a: 293, 1941a: 317–320, 1944: 154, 1951a: 101; Sorauer 1930: 570; Tredl 1907: 10; Tschorbadjiev 1939: 159–160; Wagner 1926: 152; Wichmann 1927: 53, 80; Zocchi 1956: 141, 144, 168–188. (**ds**) Arru, Covassi, & de Bellis 1966: 32; Baeta Neves & Goes 1944; Barthe 1896; Blanchere & Robert 1889; Bodenheimer 1935; Browne 1968b: 538; Calwer 1884; Cecconi 1897, 1906: 956–958, 1924: 315–316; Chapuis 1869: 37, 1873: 245; Eggers 1912f; Endrodi 1958b; Fauvel 1885; Ferreira, M. C. 1989; Georghiou 1977: 74; Gozis 1875: 79; Grune 1979: 83; Hagedorn 1910d: 26, 28; Halperin 1966: 70; Halperin & Holzschuh

1984: 27; Henschel 1895a: 146; Heyden, Reitter, & Weise 1883: 181; Hopkins 1900c; Horion 1951; Kamp 1963, 1979; Klapperich 1951: 109; Kleine 1912a: 92, 1912b: 183, 1932a: 296, 1934a: 135, 1934b: 607–608; Knotek 1892a: 33, 1894a: 553; Kocher 1953: 133; Korotnew 1926: 71; Leonardi 1889: 81–83; Lucht 1987: 277; Lunardoni & Leonardi 1889: 434; Mayet 1904: 93; Negru 1966b: 400; Novak, P. 1952: 415; Nunberg 1964a: 234; Ortzen 1886: 279; Palm 1976; Perris 1876a: 255, 1877a: 415; Pfeffer 1932: 12, 28, 1936: 90, 1943a: 3, 1947d: 127; Pjatnitskii 1930: 163; Postner 1974: 416; Roubal 1935b: 72, 1941: 265; Sainte-Claire Deville 1912: 148; Schaum 1859: 95, 1862: 100; Schedl 1959h: 100, 1960g: 131, 1961b: 185, 1967c: 74, 1969g: 289, 1971d: 431, 1972n: 349, 1978e: 36, 1979i: 289, 1980a: 5, 1981b: 62; Schevyrew 1905: 74; Schilsky 1909: 187; Schwarz 1886: 56; Simmel 1928: 154; Stein 1868: 113; Stein & Weise 1877: 163; Tressens 1952: 90; Wichmann 1955a: 94, 98. (**tx**) Balachowsky 1949a: 117–121; Bertolini 1872; Chapuis 1869: 37, 1873: 245; Doebner 1860; Eggers 1910: 212, 1912f: 29, 1934b: 26–27, 1936b: 32, 52; Eichhoff 1864b: 30, 1866: 276, 1881a: 38, 66, 132, 1883a: 103, 125; Endrodi 1957a, 1957b; Fauvel 1885, 1889; Gemminger & Harold 1872: 2672; Grune 1979: 82–83; Hagedorn 1910a: 65; Henschel 1895a: 146; Hoffmann 1938: 114, 1942: 73; Hopkins 1900c; Jacobson 1927: 453, 478; Kalina 1969; Knotek 1892a: 33, 1894: 534, 1897: 144–145; Lucht 1987: 277; Lunardoni & Leonardi 1889: 434; Negru 1966b: 400; Perris 1855: 78, 1877a: 415; Peyerimhoff 1918: 260, 1919: 249; Pfeffer 1943a: 3–12, 1947: 127–128, 1955a: 138, 1989a:pl. 2; Powell, W. 1980: 29; Postner 1974: 416; Reitter 1887b: 192–193, 1894: 50, 1906: 708, 1913: 37, 1916: 276; Rey 1892b: 30; Rupertsberger 1880: 226; Schaufuss 1916: 1218; Schedl 1934f: 1641, 1950b: 96, 1952f: 86, 1957d: 9, 1960g: 131, 133, 1980a: 5, 1981b: 62; Schmidt, G. 1980: 25; Schwarz 1886: 56; Seidlitz 1891: 151; Spessivtsev 1931: 28–29; Wichmann 1916: 16; Zocchi 1956: 141, 144–188. (**ms**) Eggers 1910a, 1910b; Mendel 1986a.

praenotatus Gredler 1866: 370 (*Phloeophthorus*). Syntypes, sex?; Tirol, Austria; not given. Synonymy: Balachowsky 1949a: 121.
References: (**ds**) Gredler 1866: 370; Kraatz 1869: 59; Schilsky 1909: 187; Stein & Weise 1877: 163. (**tx**) Balachowsky 1949a: 121; Gredler 1866: 370; Schedl 1950b: 96.

transcaspicus Semenov 1903: 79. Syntypes 4 ♂, 6 ♀; Prov. Transcaspica: Mont. Kopet-dagh inter Kisil-arvat et Kara-kala; Semenov and Schevyrev Collections. Synonymy: Schedl 1950b: 96.
References: (**hb**) Stark 1952: 305. (**ds**) Hagedorn 1910d: 28; Kadyrov 1989; Kleine 1912b: 183, 1934a: 136; Pfeffer 1943a: 3; Stark 1952: 305. (**tx**) Hagedorn 1910a: 65; Iablokoff-Khnzorian 1961: 71, 157; Pfeffer 1943a: 3, 1955a: 134; Reitter 1913a: 38; Schedl 1934f: 1641, 1950b: 96; Semenov 1903: 79; Stark 1952: 305.

hercegovinensis Eggers 1922d: 120. Lectotype ♀; Herzegovina, ohne nahere Ortsbezeichnung; USNM, Washington, designated by Anderson & Anderson 1971: 14. Synonymy: Schedl 1950b: 96.
References: (**ds**) Buresh & Lazarov 1956; Pfeffer 1943a: 10, 1947d: 129. (**tx**) Anderson, W. H. & Anderson 1971: 14; Eggers 1922d: 120; Endrodi 1957a; Iablokoff-Khnzorian 1961: 157; Pfeffer 1943a: 10, 1955a: 134; Schedl 1934f: 1641, 1950b: 96.

schumensis Eggers 1922d: 166. Lectotype ♂; Schumewald, Bezirk Wilhelmstal (Deutsch-Ostafrika); USNM, Washington, designated by Anderson & Anderson 1971: 29. Synonymy: Schedl 1957d: 9.
References: (**bv**) Curry 1965. (**cn**) Razzauti 1956: 141. (**ec**) Razzauti 1956: 141. (**hb**) Razzauti 1956: 141; Zocchi 1956: 141. (**ds**) Gardner 1957a; Kleine 1934a: 135. (**tx**) Anderson, W. H. & Anderson 1971: 29; Eggers 1922d: 166; Schedl 1957d: 9; Zocchi 1956: 141.

* ***brunni* (Hagedorn)** 1906: 119 (*Phloeosinites*). Holotype, sex?; Bernstein; not located.
Figures: Schedl 1947a: 38 (adult).
Distribution: Europe (fossil in Baltic amber).
References: (**ds**) Hagedorn 1907a, 1907b, 1910d: 28; Kleine 1912a: 163; Spahr 1981. (**tx**) Hagedorn 1906: 119, 1907a, 1907b, 1910a: 65; Keler 1928: 27; Schedl 1947a: 15, 17, 38.

***camphoratus* Tsai & Yin** 1964: 93, 96. Holotype ♂; Yunnan, China; IZAS, Beijing.
Distribution: Asia (Yunnan in China/ Thailand).
Hosts: *Cinnamomum camphora, C. iners*.
References: (**ds**) Beaver 1990a: 280. (**tx**) Tsai & Yin 1964: 93, 96.

***canadensis* Swaine** 1917: 8. Lectotype ♀; Ste. Anne de Bellevue, Quebec, Canada; CNCI, Ottawa, designated by Bright 1967b: 676.
Distribution: North America (New Brunswick, Ontario, Quebec in Canada/ Maine, Michigan, Minnesota, New Hampshire, New York, Ohio in USA).
Hosts: *Thujia occidentalis*.
Notes: (3) Blackman 1942c: 463 (redescribed).
References: (**ay**) Robertson 1961; Thomas, J. B. 1957: 4, 1967. (**bv**) Hosking & Knight 1975. (**cn**) Anonymous 1962z, 1963r; Blackman 1950; Browne 1968b: 539; Chamberlin 1924; Doane et al. 1936; Janson & Bowser 1975: 11; Johnson, W. T. & Lyon 1976: 48; Lindquist, O. H. & Syme 1981: 83; Moody 1988: 65; Razzauti 1956: 141;

Rose, A. H. & Lindquist 1980: 77; Schuder 1969: 82; Swaine 1918a: 68–69; Syme & Nystrom 1988: 80. (**ec**) Burks 1979: 800; Bushing 1965: 462; Cross & Moser 1975; Marsh 1979: 158; Matthews 1970; Muesebeck 1979: 1128; Poinar 1975: 165; Razzauti 1956: 141; Sanwal 1960: 1127–1131; Schedl 1932: 1–2; Thompson, W. R. 1943: 82; Tomalak, Welch, & Galloway 1989: 18; Tudor 1969: 34. (**hb**) Baker, W. L. 1972: 248; Blackman 1950; Bright 1976d: 84; Browne 1968b: 539; Chamberlin 1939: 171; Doane et al. 1936; Johnson, W. T. & Lyon 1976: 48; Razzauti 1956: 141; Rose, A. H. & Lindquist 1980: 77; Swaine 1918a: 68–69; Wood, S. L. 1982b: 308; Zocchi 1956: 141. (**ds**) Anonymous 1926c: 516, 1962z, 1963r; Beaulne 1956; Blackman 1942c, 1950; Blackwelder & Blackwelder 1948; Bright 1976d: 84; Browne 1968b: 539; Chamberlin 1925, 1939: 171; Dodge 1938; Drooz 1985: 352; Hatch 1924; Kleine 1934a: 135; Leng 1920: 338; Leonard 1928: 516; Lindquist, O. H. & Syme 1981: 83; Morgan, Anne, Morgan, & Elias 1985; Schuder 1969: 82; Syme & Nystrom 1988: 80; Wood, S. L. 1982b: 308. (**tx**) Beaulieu 1923; Benoit 1985: 196; Blackman 1942c: 463; Bright 1967b: 676, 1976d: 83–84; Chamberlin 1939: 171; Dodge 1938: 29; Drooz 1985: 351; Hoebeke 1978; Johnson, W. T. & Lyon 1976: 49; Lindquist, O. H. & Syme 1981: 83; Rose, A. H. & Lindquist 1980: 77; de Ruette 1970: 105; Schedl 1939n: 12; Swaine 1917: 8, 1918a: 68–69; Syme & Nystrom 1988: 80; Thomas, J. B. 1957: 4, 1967; Wood, S. L. 1970: 105, 1982b: 308; Zocchi 1956: 141.

***cedri* Brisout** 1883: 146. Syntypes, sex?; Algeria (Foret de Batna); MNHN, Paris.

Notes: (3) Schedl 1950b: 8 (redescribed).

References: (**bv**) Chararas 1982; Chararas, Desveaux, & Kogane-Charles 1978b; Chararas, Juster, & Balmain-Oligo 1968: 309–316. (**cn**) Chararas 1977c; Hoffmann 1938: 14–16; Razzauti 1956: 141; Schimitschek 1944: 162. (**ec**) Chararas, Desveaux, & Kogane-Charles 1978a; Peyerimhoff 1934: 52; Pfeffer 1960; Razzauti 1956: 141. (**hb**) Chararas, Berton, & Bregeaut 1964: 1436–1438; Peyerimhoff 1919: 249; Razzauti 1956: 141; Schimitschek 1944: 162; Strohmeyer 1907c: 82; Zocchi 1956: 141. (**ds**) Chararas 1967a; Chararas & Koutroumpas 1977; Hagedorn 1910d: 26; Hoffmann 1938: 14–16; Kleine 1912b: 183, 1914a: 16, 1934a: 135; Peyerimhoff 1919: 249, 1933b: 363, 1934: 52; Pfeffer 1935: 157, 1943a: 1, 9, 1947d: 128, 1960; Reitter 1894a: 50; Schedl 1971d: 426. (**tx**) Brisout 1883: 146; Eggers 1914; Hagedorn 1901a: 65; Pfeffer 1943a: 1, 9, 1955a: 134; Reitter 1894a: 50, 1913a: 38; Schedl 1934f: 1641, 1950b: 81, 1958e: 33; Strohmeyer 1907: 82–84; Zocchi 1956: 141. (**ms**) Chararas 1971a: 853.

***cedri cedri*:**

Distribution: Africa (Algeria), Europe (Spain).

Hosts: *Cedrus atlantica*.

Notes: (1) Balachowsky 1969: 649 named the "Nord de l'Afrique" subspecies as *maura* without recognizing that an automatic subspecies *cedri cedri* already existed for it.

References: (**tx**) Balachowsky 1969: 649.

cedri maura Balachowsky 1969: 649. Syntypes, sex?; Nord de l'Afrique; not indicated. Automatically preoccupied.

References: (**tx**) Balachowsky 1969: 649 (footnote).

cedri libani Balachowsky 1969: 649. Syntypes, sex?; Proche-Orient [presumably Syria]; not indicated.

Distribution: Asia (Syria/ Turkey).

Hosts: *Cedrus libanotica libani*.

Notes: (1) A formal type series was not designated for the geographical race in Syria.

References: (**tx**) Balachowsky 1969: 649.

***cristatus* (LeConte)** 1868: 170 (*Hylesinus*). Holotype, sex?; California [USA]; Carnegie Museum of Natural History, Pittsburgh.

Figures: Blackman 1942c:figs. 16 (female), 17 (male), Johnson & Lyon 1976: 47.

Distribution: North America (Durango, Sonora in Mexico/ Arizona, California, W Texas in USA).

Hosts: *Cupressus arizonica, C. forbsei, C. macrocarpa, Juniperus* sp., *Thuja* sp.

Notes: (3) Blackman 1942c: 443 (redescribed).

References: (**cn**) Anonymous 1960q, 1966f, 1968g, 1969e, 1974e, 1974r, 1986b: 8; Compere 1915: 574; Craighead & Middleton 1930; Doane et al. 1936; Essig 1915a: 312, 1926: 516, 1958: 516; Felt 1926: 247, 1942; Herrick 1935: 250; Hopkins 1899b: 7, 1903b: 39; Keen 1938: 131, 1952c: 169; Lauderdale 1952: 17; Razzauti 1956: 141; Riley 1893a: 262; Swaine 1918a: 69. (**ec**) Bushing 1965: 462; Cushman 1919; Keen 1938: 131; Kinn 1971; Muesebeck 1938: 285; Razzauti 1956: 141. (**hb**) Branigan 1915: 574; Burke 1930: 181, 1932: 366, 1933: 54–55; Chamberlin 1939: 180; Doane et al. 1936; Essig 1915a: 312, 1926: 516, 1958: 516; Felt 1926: 247; Herbert 1919: 337, 1920: 361, 1920b: 1–22; Herrick 1935: 250; Hopkins 1899b: 7, 1903b: 39; Jacobson 1927: 655; Keen 1938: 131, 1952c: 169; Razzauti 1956: 141; Riley & Howard 1893: 262; Ryan 1931: 354–355; Swaine 1918a: 69; Wickson 1899: 259; Wood, S. L. 1982b: 302; Zocchi 1956: 141. (**ds**) Anonymous 1944r, 1965b, 1966f, 1968g, 1969e, 1974e; Atkinson & Equihua 1985b: 230; Atkinson et al. 1991: 156; Blackman 1942c: 443; Blackwelder & Blackwelder 1948; Bright & Stark 1973: 52; Chamberlin 1925, 1939: 180; Craighead & Middleton 1930; Essig 1926: 516, 1958: 516; Fall 1906: 203; Felt 1926: 247, 1930a: 247, 1942: 6; Furniss, R. L. & Carolin 1977: 367; Hagedorn 1910d: 26; Henshaw 1882: 269, 1885: 149; Hopkins 1900c; Keen 1929a: 20, 1938: 131, 1952c: 169; Kleine 1912b: 183, 1914b:

390, 1934a: 135; Leng 1920: 338; Sampson 1919: 113; Swaine 1909: 129. (**tx**) Blackman 1942c: 443; Blandford 1897a: 160; Chamberlin 1939: 180; Gemminger & Harold 1872: 2674; Hagedorn 1910a: 65; Hopkins 1900c, 1903b: 39–40; Johnson, W. T. & Lyon 1976: 47; Keen 1929a: 20; Keler 1928: 17; LeConte 1868: 170, 1876: 381; Sampson 1919: 113; Swaine 1909: 129, 1918a: 69; Wood, S. L. 1972c: 147, 1982b: 302; Zocchi 1956: 141.

chiricahua Blackman 1942c: 444. Holotype ♂; Chiricahua National Monument, Arizona [USA]; USNM, Washington. Synonymy: Wood 1972c: 147.

References: (**cn**) Razzauti 1956: 141. (**ec**) Razzauti 1956: 141. (**hb**) Razzauti 1956: 141; Zocchi 1956: 141. (**ds**) Blackwelder & Blackwelder 1948. (**tx**) Blackman 1942c: 444; Wood, S. L. 1972c: 147; Zocchi 1956: 141.

***cupressi* Hopkins** 1903b: 35. Holotype ♂; Golden Gate Park, San Francisco, California [USA]; USNM, Washington.

Figures: Blackman 1942c:figs. 12–13 (declivity), Bright 1976d: 84, Bright & Stark 1973: 153, Zondag 1976a.

Distribution: Australia (introduced), New Zealand (introduced), North America (Alaska/ British Columbia in Canada/ California, Oregon, Washington in USA), Panama (introduced).

Hosts: *Chamaecyparis nootkatensis, Cupresses macrocarpa, C. sargentii, C.* sp., *Sequoia sempervirens, Thuja plicata.*

Notes: (3) Blackman 1942c: 441 (redescribed).

References: (**cn**) Anonymous 1960q, 1962h, 1964h, 1965b, 1967f, 1967t, 1969i, 1970h, 1980a, 1983c; Blair 1937: 171; Browne 1968b: 539; Burke 1932: 46–47, 1933: 54–55; Chamberlin 1924; Doane et al. 1936; Dugdale 1965b; Essig 1915a: 313, 1926: 516, 1958: 516; Felt 1926: 247, 1942; Hadlington 1951a; Herrick 1935: 250; Hopkins 1903b: 35, 1904a: 41, 45–46; Johnson, W. T. & Lyon 1976: 46; Keen 1938: 131, 1952c: 168; Kershaw 1973; Lauderdale 1951: 23; Razzauti 1956: 141; Schuder 1969: 75; Shaw et al. 1985; Swaine 1918a: 69; Zondag 1976a, 1982. (**ec**) Barr, W. F. 1947: 58; Bushing 1965: 462; Keen 1938: 131, 1952c: 168; Marsh 1979: 148; Razzauti 1956: 141. (**hb**) Bright 1976d: 89; Bright & Stark 1973: 49; Browne 1968b: 539; Burke 1932; Chamberlin 1939: 181; DeLeon 1952: 76–78; Doane et al. 1936; Essig 1915a: 313, 1926: 576, 1942: 604, 1958: 516; Felt 1926: 247, 1942: 6; Hadlington 1951a; Herbert 1919: 337, 1920: 361, 1920b: 1–22; Herrick 1935: 250; Hopkins 1903: 35, 1904a: 41, 45–46; Johnson, W. T. & Lyon 1976: 46; Keen 1938: 131, 1952c: 168; Pierce 1907: 294; Razzauti 1956: 141; Swaine 1918a: 69; Wood, S. L. 1982b: 297; Zocchi 1956: 141; Zondag 1976a. (**ds**) Anonymous 1964h, 1965b, 1967f, 1967t, 1969i, 1970h, 1980a; Blackman 1942c: 441; Blackwelder & Blackwelder 1948; Bright 1976d: 89; Bright & Stark 1973: 49; Browne 1968b: 539; Chamberlin 1925, 1939: 181; Currie 1905: 100; Dugdale 1965b; Essig 1926: 516, 1958: 516; Felt 1926: 247, 1930a: 247; Furniss, R. L. & Carolin 1977: 367; Hagedorn 1906, 1910d: 26; Hopping 1922; Johnson, W. T. & Lyon 1976: 46; Keen 1929a: 20, 1938: 131, 1952c: 168; Kleine 1912b: 183, 1914b: 390, 1934a: 135; Kuschel 1972; Leng 1920: 338; Schuder 1969: 75; Swaine 1909: 129; VanDyke 1925: 46; Wood, S. L. 1977a: 72, 1982b: 297; Zondag 1982. (**tx**) Blackman 1942c: 441; Bright 1976d: 90; Bright & Stark 1973: 153; Bruck 1936a; Carne et al. 1980; Chamberlin 1939: 181; Essig 1942: 604; Furniss, R. L. & Carolin 1977: 368; Hagedorn 1906, 1910a: 66; Hopkins 1903b: 35; Keen 1929a: 20; Swaine 1909: 129, 1918a: 69, 1924b: 145; Wood, S. L. 1972: 148, 1982: 297; Zocchi 1956: 141; Zondag 1976a. (**ms**) Hopkins 1903b: 35.

nitidus Swaine 1924b: 145. Holotype ♂; Santiam N. F., Oregon [USA]; CNCI, Ottawa. Synonymy: Wood 1972c: 148.

Notes: (3) Blackman 1942c: 440 (redescribed).

References: (**cn**) Keen 1938: 32, 1952c: 168; Razzauti 1956: 141. (**ec**) Keen 1938: 32; Razzauti 1956: 141. (**hb**) Chamberlin 1939: 177, 1958: 89; Keen 1938: 32, 1952c: 168; Razzauti 1956: 141; Zocchi 1956: 141. (**ds**) Blackman 1942c: 440; Blackwelder & Blackwelder 1948; Chamberlin 1925, 1939: 177, 1958: 89; Keen 1938: 32, 1952c: 168; Leng & Mutchler 1927: 51; Murayama 1957a: 36; Patterson & Hatch 1945: 150; Wood, S. L. 1972a: 408. (**tx**) Blackman 1942c: 440; Bright 1976b: 677; Chamberlin 1939: 177, 1958: 89; de Ruette 1970: 105; Swaine 1924b: 145; Wood, S. L. 1972a: 408, 1972c: 148; Zocchi 1924b: 141.

blackwelderi Blackman 1943c: 397. Holotype ♂; Ciricito, Panama Canal Zone; USNM, Washington. Synonymy: Wood 1972c: 148.

References: (**cn**) Razzauti 1956: 141. (**ec**) Razzauti 1956: 141. (**hb**) Razzauti 1956: 141. (**ds**) Blackwelder 1947. (**tx**) Blackman 1943c: 397; Wood, S. L. 1972c: 148.

***deleoni* Blackman** 1942c: 454. Holotype ♂; Jacala, Hidalgo, Mexico; USNM, Washington.

Distribution: North America (Chihuahua, Durango, Hidalgo, Jalisco, Michoacan, Morelia, Oaxaca in Mexico).

Hosts: *Juniperus deppeana, J. flaccida, J.* sp., *Cupressus* sp.

References: (**cn**) Razzauti 1956: 141. (**ec**) Razzauti 1956: 141. (**hb**) Atkinson et al. 1986: 23; Burgos & Saucedo 1983: 65; Razzauti 1956: 141; Wood, S. L. 1982b: 294; Zocchi 1956: 141. (**ds**) Atkinson & Equihua 1985b: 230, 1988: 94; Atkinson et al. 1986: 23; Burgos & Saucedo 1983: 65; Wood, S. L. 1982b: 294. (**tx**) Blackman 1942c: 454; Wood, S. L. 1982b: 294; Zocchi 1956: 141.

***dentatus* (Say)** 1826: 258 (*Hylurgus*). Syntypes, sex?; [presumably] Milton, Massachusetts [USA]; Say Collection, lost.

Figures: Blackman 1921:pl. 1, fig. 3, 1942c:fig. 24 (declivity).

Distribution: North America (Ontario in Canada/ Alabama, Arkansas, District of Columbia, Florida, Georgia, Illinois, Iowa, Kansas, Kentucky, Maryland, Massachusetts, Minnesota, Mississippi, Missouri, Nebraska, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Virginia, West Virginia in USA).

Hosts: *Chamaecyparis thyoides, Juniperus silvicola, J. virginiana, Thuja occidentalis*.

References: (**ay**) Hopkins 1894g; Kudon & Berisford 1981. (**bv**) Baker, W. L. 1972: 248; Berisford 1975; Turnbow & Franklin 1980. (**cn**) Anonymous 1962z, 1963r; Baker, W. L. 1972: 248; Blackman 1950; Chamberlin 1924: 270; Doane et al. 1936; Drooz 1985: 351; English 1958: 38; Essig 1926: 517, 1958: 517; Felt 1926: 247, 270, 1930a: 247, 270, 1942; Felt & Bromley 1931: 437–443, 1943: 327; Felt & Rankin 1932: 269; Fitch 1858; Fuller & Hostetler 1980; Harris 1841: 73, 1842: 73, 1852a: 77, 1862: 87, 1890: 87; Hopkins 1894g: 280, 1904a: 25; LeBaron 1871: 42; Lintner 1887b: 90; Mallis 1960; McDaniel 1934: 246; Packard 1881: 244–245, 1890: 860, 904–905; Razzauti 1956: 141; Riley & Howard 1890: 350; Seaver 1921: 770; Smith, J. B. 1900: 365; Swaine 1918a: 68, 70. (**ec**) Ashraf & Berryman 1969: 13; Berisford 1974a, 1975; Burks 1979: 853; Bushing 1965: 462; Drooz 1985: 351; Felt 1901: 522–523, 1906: 391; Grissell 1979: 765; Kudon 1979b; Kudon & Berisford 1980, 1981a, 1981b; Marsh 1979: 158; Matthews 1970; Pierce 1908: 387; Razzauti 1956: 141; Reid 1957b: 6; Riley 1890b: 350. (**hb**) Baker, W. L. 1972: 248; Beal & Massey 1945: 85–88; Blackman 1922b: 60, 1950; Britton 1929: 666–768; Chamberlin 1917: 353–356, 1919: 326, 1939: 169; Chittenden 1890; Deyrup & Atkinson 1987a: 64; Doane et al. 1936; Drooz 1985: 351; Essig 1926: 517, 1958: 517; Felt 1906: 391, 1926: 247, 270, 1930a: 247, 270, 1942: 8; Felt & Rankin 1932: 269; Fitch 1858: 750; Harris 1841: 73, 1852: 77, 1862: 87; Hopkins 1894g: 280, 1904a: 25; Knaus 1886: 77; Lintner 1887b: 90; Morstatt 1924: 30; Packard 1890: 860; Perris 1877a: 414; Pierce 1907: 293; Razzauti 1956: 141; Swaine 1918a: 68, 70; Wood, S. L. 1982b: 294; Zocchi 1956: 141. (**ds**) Anonymous 1926c: 516, 1962z, 1963r; Atkinson et al. 1991: 156; Beal & Massey 1945: 85–88; Berisford 1974a; Blackman 1922b, 1942c: 452, 1950; Blackwelder & Blackwelder 1948; Blatchley & Leng 1916: 658; Britton 1911: 208, 1920a; Chamberlin 1917: 353–356, 1925, 1939: 169; Chapuis & Candeze 1853; Chittenden 1890; Currie 1905; Deyrup 1981b: 4; Deyrup & Atkinson 1987a: 64; Dodge 1938; Drooz 1985: 351; Essig 1926: 517, 1958: 517; Felt 1926: 247, 270, 1930a: 247, 270; Felt & Rankin 1932: 269; Gowdey 1926: 37; Hagedorn 1910d: 26; Henshaw 1885: 149; Hopkins 1893a: 142, 145, 1893b: 213, 1900c; Kirk 1970; Kleine 1912b: 183, 1914b: 386, 1934a: 135; Kudon & Berisford 1981; Leng 1920: 338; Leonard 1928: 516; Melsheimer 1853: 87; Perris 1876a: 253, 1877a: 414; Schwarz 1886: 56; Scudder 1886b: 196; Smith, J. B. 1900: 365, 1910: 404; Swaine 1909: 129; Turnbow & Franklin 1980; Ulke 1902: 56; Wickham 1896c: 168; Wood, S. L. 1982: 294. (**tx**) Beal & Massey 1945: 85–88; Blackman 1922b: 60, 1942c: 452; Blandford 1897a: 160; Blatchley & Leng 1916: 658; Chamberlin 1939: 169; Chapuis & Candeze 1853; Dodge 1938: 29; Eichhoff 1896: 608; Gemminger & Harold 1872: 2674; Hopkins 1900c; Hagedorn 1910a: 66; Keler 1928: 15; LeConte 1868: 170, 177, 1876: 380–381; Lucas 1920: 504; Say 1826: 258, 319; Schwarz 1886: 56; Swaine 1909: 129, 1917: 9, 1918a: 68, 70; Wood, S. L. 1982b: 294; Zocchi 1956: 141. (**ms**) Lucas 1920: 504.

graniger Eichhoff 1868c: 147 (*Dendroctonus*). Lectotype ♂; published as "Texas," type labeled "Am. Bor."; USNM, Washington, designated by Wood 1982b: 294. Synonymy: Eichhoff 1896: 608.

References: (**cn**) Swaine 1918a: 70. (**ec**) Hopkins 1891b: 258; Pierce 1908: 387. (**hb**) Pierce 1907: 294; Swaine 1918a: 70; Zocchi 1956: 140. (**ds**) Chamberlin 1939: 170; Chapuis 1869: 39, 1873: 247; Henshaw 1885: 149; Leng 1920: 338; Schwarz 1886: 56; Swaine 1909: 129. (**tx**) Chapuis 1869: 39, 1873: 247; Eichhoff 1868c: 147, 1896: 608, 610; Gemminger & Harold 1872: 2672; LeConte 1868: 177, 1876: 382, 436–437; Schwarz 1886: 56; Swaine 1909: 129, 1918a: 70; Wood, S. L. 1982b: 294; Zocchi 1956: 140.

haagi Eichhoff 1868c: 148 (*Dendroctonus*). Lectotype ♀; Amerique Boreale; USNM, Washington, designated by Wood 1982b: 295. Synonymy: Schwarz 1896: 56, Blackman 1942: 452.

References: (**cn**) Swaine 1918a: 70. (**hb**) Swaine 1918a: 70; Zocchi 1956: 140. (**ds**) Chapuis 1869: 39, 1873: 247; Henshaw 1885: 149; Leng 1920: 338; Schwarz 1886: 56; Swaine 1909: 130. (**tx**) Blandford 1897a: 160; Chapuis 1869: 39, 1873: 247; Eichhoff 1868c: 148, 1896: 608, 610; Gemminger & Harold 1872: 2672; LeConte 1868: 177, 1876: 382, 436–437; Leng 1920: 338; Schwarz 1886: 56; Swaine 1909: 130, 1918a: 70; Wood, S. L. 1982b: 295; Zocchi 1956: 140.

enixus Blackman 1921: 5. Syntypes ♀; Nachez, Mississippi [USA]; USNM, Washington, Synonymy: Blackman 1942c: 452.

References: (**ds**) Chamberlin 1925, 1939: 170; Kleine 1934a: 135; Leng & Mutchler 1927: 51.

(**tx**) Blackman 1921: 5, 1922: 60, 1942c: 452; Chamberlin 1939: 170.

***dubiosus* Schedl** 1972a: 145. Holotype ♂; ?Queensland, Australia; Queensland Museum, Brisbane.
Distribution: Australia (?Queensland).
References: (**tx**) Schedl 1972a: 145.

***frontalis* Bruck** 1933c: 55. Holotype ♂; Rialto, California [USA]; USNM, Washington.
Figures: Blackman 1942c:figs. 3, 3A (declivity), Furniss & Carolin 1977: 221.
Distribution: North America (California in USA).
Hosts: *Cupressus forbsei, C. guadeloupensis, C. macrocarpa*.
Notes: (3) Blackman 1942c: 421 (redescribed).
References: (**cn**) Razzauti 1956: 141. (**ec**) Razzauti 1956: 141. (**hb**) Bright & Stark 1973: 47; Chamberlin 1939: 173; Razzauti 1956: 141; Wood, S. L. 1982b: 313; Zocchi 1956: 141. (**ds**) Blackman 1942c: 421; Blackwelder 1939; Blackwelder & Blackwelder 1948; Bright & Stark 1973: 47; Chamberlin 1939: 173; Furniss, R. L. & Carolin 1977: 367; Wood, S. L. 1982b: 313. (**tx**) Blackman 1942c: 421; Bright 1966b: 305; Bruck 1933c: 55; Chamberlin 1939: 173; Furniss, R. L. & Carolin 1977: 221; de Ruette 1970: 105; Wood, S. L. 1982b: 313; Zocchi 1956: 141.

granulatus Bruck 1936b: 33. Holotype ♂; Santa Anna Canyon, Orange Co., California [USA]; OSUC, Columbus. Synonymy: Bright 1966b: 305.
Notes: (3) Blackman 1942c: 419 (redescribed).
References: (**cn**) Razzauti 1956: 141. (**ec**) Razzauti 1956: 141. (**hb**) Chamberlin 1939: 173; Razzauti 1956: 141; Zocchi 1956: 141. (**ds**) Blackman 1942c: 419; Blackwelder 1939; Blackwelder & Blackwelder 1948; Chamberlin 1939: 173. (**tx**) Blackman 1942c: 419; Bright 1966b: 305; Bruck 1936b: 33; Chamberlin 1939: 173; Zocchi 1956: 141.

***fulgens* Swaine** 1924b: 147. Holotype ♂; Northfork, California [USA]; CNCI, Ottawa.
Figures: Blackman 1942c:figs. 7–8 (male declivity).
Distribution: North America (California, Oregon in USA).
Hosts: *Libocedrus decurrens*.
Notes: (3) Blackman 1942c: 427 (redescribed).
References: (**cn**) Doane et al. 1936; Keen 1938: 32; Razzauti 1956: 141; Salman 1933a: 133; Schuder 1969: 75. (**ec**) Keen 1938: 32; Razzauti 1956: 141. (**hb**) Bright & Stark 1973: 47; Chamberlin 1939: 178, 1958: 91; Doane et al. 1936; Keen 1938: 32; Razzauti 1956: 141; Wood, S. L. 1982b: 306; Zocchi 1956: 141. (**ds**) Blackman 1942c: 427; Blackwelder & Blackwelder 1948; Bright & Stark 1973: 47; Chamberlin 1925, 1939: 178, 1958: 91; Furniss, R. L. & Carolin 1977: 367; Keen 1929a: 22, 1938: 32; Kleine 1934a: 135; Leng & Mutchler 1927: 51; Salman 1933a: 133; Schuder 1969: 75; Wood, S. L. 1972a: 408, 1982b: 306. (**tx**) Blackman 1942c: 427; Bright 1967b: 676; Chamberlin 1939: 178, 1958: 91; Keen 1929a: 22; de Ruette 1970: 105; Swaine 1924b: 147; Wood, S. L. 1972a: 408, 1972c: 148, 1982b: 306; Zocchi 1956: 141.

splendens Blackman 1942c: 428. Holotype ♂; Pinehurst, Oregon [USA]; USNM, Washington, Synonymy: Wood 1972c: 148.
References: (**hb**) Chamberlin 1958: 91; Zocchi 1956: 142. (**ds**) Blackwelder & Blackwelder 1948; Chamberlin 1958: 91; Razzauti 1956: 142. (**tx**) Blackman 1942c: 427–428; Chamberlin 1958: 91; Wood, S. L. 1972c: 148; Zocchi 1956: 142.

***furnissi* Blackman** 1942c: 469. Holotype ♂; Flagstaff, Arizona [USA]; USNM, Washington.
Figures: Blackman 1942c:figs. 27–28 (declivity).
Distribution: North America (Arizona, Colorado, New Mexico, Utah, Wyoming in USA).
Hosts: *Juniperus deppeana, J. monosperma, J. osteosperma*.
References: (**cn**) Razzauti 1956: 141. (**ec**) Razzauti 1956: 141. (**hb**) Razzauti 1956: 141; Wood, S. L. 1982b: 306; Zocchi 1956: 141. (**ds**) Blackwelder & Blackwelder 1948; Furniss, R. L. & Carolin 1977: 367; Wood, S. L. 1982b: 306. (**tx**) Blackman 1942c: 469; Wood, S. L. 1982b: 306; Zocchi 1956: 141.

***gifuensis* Murayama** 1954b: 190. Holotype ♂; Japan: Naka town, Gifu pref.; Murayama Colection in USNM, Washington.
Distribution: Asia (Japan).
Hosts: *Chamaecyparis obtusa, Cryptomeria japonica, Thujopsis dolobratus*.
Notes: (1) Original spelling was *gifensis*, all subsequent usage by Murayama was *gifuensis*; because it is named for Gifu prefecture, the original spelling is treated as a lapsus calami and subsequent spelling is preserved.
References: (**ds**) Murayama 1955: 96; Nobuchi 1985: 8. (**tx**) Murayama 1954b: 159, 190, 1955: 96.

***gillerforsi* Bright** 1987: 3. Holotype ♀; Azores: P. Acores, Pico; CNCI, Ottawa.
Distribution: Atlantic Islands (Azores).
References: (**tx**) Bright 1987: 3.

***granosus* Schedl** 1962b: 191. Holotype ♀?; China, Lilong; NHMBS, Basel.
Distribution: Asia (Lilong in China).
References: (**tx**) Schedl 1962b: 191.

***granulipennis* Schedl** 1975g: 218. Holotype, sex?; New Guinea, Wau; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1975g: 218.

***henschi* Reitter** 1901c: 201. Holotype ♀; Herzegovina; NHMB, Budapest.

Distribution: Asia (Lebanon/ Syria), Europe (W USSR/ Yugoslavia).

Hosts: *Cupressus lucitanica* var. *glauca*, *C.* sp., *Juniperus* spp., *Thuja* spp.

References: (**ec**) Novak 1952: 415; Wichmann 1916: 17. (**hb**) Seitner 1914: 268; Stark 1952: 303; Wichmann 1916: 17. (**ds**) Hagedorn 1910d: 27; Heyden, Reitter, & Weise 1906: 708; Kleine 1912b: 183, 1913a: 307, 1934a: 135; Novak, P. 1952: 415, 1964; Pfeffer 1943a: 13; Pittioni 1943: 176; Postner 1974: 417; Schaufuss 1915: 1218; Stark 1952: 303; Tredl 1907: 10. (**tx**) Eggers 1911a, 1914, 1937b: 334; Hagedorn 1910a: 65; Iablokoff-Khnzorian 1961: 157; Michalski 1969b: 568; Pfeffer 1943a: 13, 1955a: 136, 1965: 64; Postner 1974: 417; Reitter 1901c: 201, 1913: 39; Schedl 1934f: 1641, 1950b: 60; Stark 1952: 303; Wichmann 1916: 17.

stoeckleini Schedl 1935a: 241. Syntypes, sex?; Dalmatien, Makarska; IPKE, Eberswalde, MNB, Berlin, Stocklein Collection. Synonymy: Pfeffer 1965: 64.

Notes: (1) Schedl 1979c: 237 (citation of holotype invalid). (3) Schedl 1950b: 59 (redescription).

References: (**bv**) Grune 1979: 85. (**cn**) Razzauti 1956: 130, 202. (**ec**) Novak, P. 1952: 415; Razzauti 1956: 130, 202. (**hb**) Razzauti 1956: 130, 202; Zocchi 1956: 142, 202–205. (**ds**) Grune 1979: 85; Novak, P. 1952: 415; Pfeffer 1943a: 14; Razzauti 1956: 142; Schedl 1967c: 75. (**tx**) Grune 1979: 85; Pfeffer 1943a: 14, 1955a: 136, 1965: 64; Schedl 1935a: 241, 1950b: 59, 1952k: 159, 1979c: 237; Zocchi 1956: 142, 202–205.

krimaeus Eggers 1937b: 334. Holotype ♂; Sudrussland (Krim); Eggers Collection, in NHMW, Wien. Synonymy: Schedl 1950b: 59, Pfeffer 1965: 64.

Notes: (3) Sokanovskii 1954: 18 (described female).

References: (**hb**) Stark 1952: 303. (**ds**) Pfeffer 1943a: 14; Stark 1952: 303. (**tx**) Eggers 1937b: 334; Pfeffer 1943a: 14, 1955a: 136, 1965: 64; Schedl 1950b: 59; Sokanovskii 1954: 18; Stark 1952: 303.

inermis Nunberg 1948b: 14. Syntypes ♂; Ghazir near Beyrout (Syria-Liban); IZW, Warsaw. Synonymy: Schedl 1952k: 159, Pfeffer 1965: 64.

References: (**tx**) Nunberg 1948b: 14; Pfeffer 1965: 64; Schedl 1952k: 159.

***hoferi* Blackman** 1942c: 412. Holotype ♂; Ute Pass, Colorado [USA]; USNM, Washington.

Figures: Blackman 1942c:fig. 2 (male declivity), Bright 1976d: 84 (declivity), 216 (gallery).

Distribution: North America (British Columbia in Canada/ Arizona, California, Colorado, Nevada, New Mexico, North Dakota, Texas, Utah, Wyoming in USA).

Hosts: *Juniperus deppeana*, *J. osteosperma*, *J. scopulorum*.

References: (**cn**) Razzauti 1956: 141. (**ec**) Razzauti 1956: 141. (**hb**) Bright 1976d: 89; Furniss, M. M. & Johnson 1987: 376; Gast et al. 1989: 382; Razzauti 1956: 141; Wood, S. L. 1982b: 315; Zocchi 1956: 141. (**ds**) Blackwelder & Blackwelder 1948; Bright 1976d: 89; Furniss, M. M. & Johnson 1987: 376; Furniss, R. L. & Carolin 1977: 367; Gast et al. 1989: 382; Wood, S. L. 1948: 24, 1951a: 127, 1982b: 315. (**tx**) Blackman 1942c: 412; Bright 1976d: 84, 89, 216; Wood, S. L. 1982b: 315; Zocchi 1956: 141.

***hopehi* Schedl** 1953e: 23. Holotype, sex?; China: Sienhsien, Hopeh; Eggers Collection, in NHMW, Wien.

Distribution: Asia (Hebei, Ningria, Shanxi, Sichuan in China).

Hosts: *Biota orientalis*, *Juniperus chinensis*, *Sabina chinensis*, *Thuja orientalis*.

References: (**ds**) Choo 1983: 46; Choo & Woo 1985: 163. (**tx**) Choo 1983: 46; Schedl 1953e: 23.

***hoppingi* Swaine** 1915b: 364. Lectotype ♀; Camp 6, California [USA]; CNCI, Ottawa, designated by Bright 1967b: 676.

Distribution: North America (British Columbia in Canada/ California in USA).

Hosts: *Cupressus macnabiana*, *C. macrocarpa*, *C. sargentii*, *Juniperus occidentalis*, *J. scopulorum*, *Libocerdrus decurrens*.

Notes: (3) Blackman 1942c: 411 (redescribed).

References: (**cn**) Doane et al. 1936; Essig 1926: 517, 1958: 517; Keen 1938: 32; Razzauti 1956: 141; Schuder 1969: 75; Swaine 1918a: 67. (**ec**) Keen 1938: 32; Razzauti 1956: 141. (**hb**) Bright 1976d: 88; Bright & Stark 1973: 45; Chamberlin 1939: 175, 1958: 83; Doane et al. 1936; Essig 1926: 517, 1958: 517; Keen 1938: 32; Razzauti 1956: 141; Swaine 1918a: 67; Wood, S. L. 1982b: 309; Zocchi 1956: 141. (**ds**) Blackman 1942c: 411; Blackwelder & Blackwelder 1948; Bright 1976d: 88; Bright & Stark 1973: 45; Chamberlin 1925, 1939: 175, 1958: 83; Essig 1926: 517, 1958: 517; Furniss, R. L. & Carolin 1977: 367; Hopping 1922, 1925a: 105–106; Keen 1929a: 19, 1938: 32; Kleine 1934a: 135; Leng 1920: 338; Schuder 1969: 75; Wood, S. L. 1972a: 409, 1972c: 149, 1982b: 309. (**tx**) Blackman 1942c: 411; Bright 1967b: 676, 1976d: 88; Bruck 1936a; Chamberlin 1939: 175, 1958: 83; Hoebeke 1978; Keen 1929a: 19; de Ruette 1970: 105; Swaine 1915b: 364, 1917: 9, 1918a: 67, 1924b: 147; Wood, S. L. 1972a: 409, 1982b: 309; Zocchi 1956: 141.

woodi Bright 1966b: 296. Holotype ♂; Cypress Camp, 12 miles W Hat Creek, Shasta County, California [USA]; Wood Collection. Synonymy: Wood 1972c: 149.

References: (**tx**) Bright 1966b: 296; de Ruette 1970: 106; Wood, S. L. 1972c: 149.

***jubatus* Sampson** 1919: 112. Syntypes ♂ ♀; India; BMNH, London.

Distribution: Asia (Uttar Pradesh in India).

Hosts: *Cupressus torulosa*.

References: (**cn**) Mathur & Singh 1960a: 40; Razzauti 1956: 141. (**ec**) Chaudhry & Wali-ur-Rehman 1979; Razzauti 1956: 141. (**hb**) Razzauti 1956: 141; Zocchi 1956: 141. (**ds**) Beeson 1961: 290; Chaudhry & Wali-ur-Rehman 1979; Kleine 1934a: 135; Mathur & Singh 1960a: 40. (**tx**) Sampson 1919: 112; Zocchi 1956: 141.

***keeni* Blackman** 1942c: 414. Holotype ♂: Mount Rainier National Park, Washington [USA]; USNM, Washington.

Distribution: North America (British Columbia in Canada/ Idaho, Washington in USA).

Hosts: *Chamaecyparis nootkatensis*, *Juniperus scopulorum*.

References: (**cn**) Razzauti 1956: 141. (**ec**) Razzauti 1956: 141. (**hb**) Bright 1976d: 88; Chamberlin 1958: 84; Razzauti 1956: 141; Wood, S. L. 1982b: 314; Zocchi 1956: 141. (**ds**) Blackwelder & Blackwelder 1948; Bright 1976d: 88; Chamberlin 1958: 84; Furniss, R. L. & Carolin 1977: 367; Patterson & Hatch 1945: 150; Wood, S. L. 1972a: 409, 1982b: 314. (**tx**) Blackman 1942c: 414; Bright 1976d: 88; Chamberlin 1958: 84; Wood, S. L. 1972a: 409, 1982: 314; Zocchi 1956: 141.

***kinabaluensis* Bright** 1989: 80. Holotype ♂; Borneo: Panar Laban, Mount Kinabalu N. P., Sabah, 3437 m; CNCI Ottawa.

Figures: Bright 1989: 81.

Distribution: Indonesia (Borneo).

Hosts: *Podocarpus* sp.

References: (**tx**) Bright 1989: 81.

***kiushuensis* Murayama** 1955: 93. Holotype ♂; Japan: Koyama, Kagoshima pref.; Murayama Collection in USNM, Washington.

Distribution: Asia (Japan).

Hosts: *Actinodaphne longifolia*.

References: (**ds**) Murayama 1955: 93, 97; Nobuchi 1985: 8. (**tx**) Murayama 1955: 93, 97.

***kumamotoensis* Murayama** 1955: 91. Holotype ♂; Japan: Waifu, Kumamoto pref.; Murayama Collection in USNM, Washington.

Distribution: Asia (Japan).

Hosts: *Cinnamomum camphora*.

References: (**ds**) Murayama 1955: 91, 97; Nobuchi 1985: 6. (**tx**) Murayama 1955: 91, 97.

***lewisi* Chapuis** 1875: 198. Holotype, sex?; Japan; IRSNB, Brussels.

Figures: Nakane et al. 1963:pl. 191.

Distribution: Asia (Guizhou in China/ Japan/ Taiwan).

Hosts: *Actinodaphne longifolia*, *Chamaecyparis* spp., *Cryptomeria japonica*, *Thujopsis dolobrata*.

Notes: (3) Schedl 1950b: 58 (redescribed).

References: (**cn**) Anonymous 1980g; Razzauti 1956: 141. (**ec**) Razzauti 1956: 141. (**hb**) Razzauti 1956: 141; Takahashi 1989: 403; Zocchi 1956: 141. (**ds**) Anonymous 1980g; Blandford 1894c; Hagedorn 1910d: 27; Kleine 1912b: 183, 1914b: 255, 1934a: 135; Murayama 1948: 2, 1949a: 12, 1949c: 100, 1950b: 1291, 1951c: 3, 1953a: 7, 1953c: 148, 1955: 98; Nakane et al. 1963: 382; Niisima 1942: 70; Nobuchi 1967: 19, 1985: 8; Pfeffer 1943a: 5; Schedl 1960e: 171. (**tx**) Blandford 1894d; Chapuis 1875: 198; Eggers 1941b: 222; Hagedorn 1910a: 65; Murayama 1950b: 1291, 1953a: 7, 1954b: 159, 1955: 98; Nakane et al. 1963: 382, pl. 191; Niisima 1909: 123, 1910a: 6, 1942: 70; Pfeffer 1943a: 5; Schedl 1934f: 1641, 1950b: 58; Zocchi 1956: 141.

minutus Blandford 1894d: 71. Holotype, sex?; Ichiuchi, Japan; BMNH, London. Synonymy: Schedl 1950b: 58.

References: (**ds**) Blandford 1894c; Hagedorn 1910d: 27; Kleine 1912b: 183, 1914b: 255; Murayama 1955: 96; Niisima 1942: 72; Pfeffer 1943a: 5. (**tx**) Blandford 1894d: 71; Hagedorn 1910a: 65; Murayama 1954b: 160, 1955: 96; Niisima 1942: 72; Pfeffer 1943a: 5; Schedl 1934f: 1641, 1950b: 58.

***machilus* (Schedl)** 1959j: 173 (*Hylesinus*). Holotype, sex?; Uttar Pradesh: Chakrata, Chachpur; FRI, Dehra Dun, not present.

Distribution: Asia (Fujian, Hunan in China/ Uttar Pradesh in India).

Hosts: *Machilus odoratissima*, *Cinnamomum camphora*.

Notes: (1) The holotype was never returned by Schedl to the Forest Research Institute; since all specimens sent to Schedl are accounted for, the missing holotype apparently is the "paratype" in the Schedl Collection in the NHMW, Wien.

References: (**tx**) Schedl 1959j: 173.

cinnamomi Tsai & Yin 1964: 94, 96. Holotype ♂; Fukien, China; IZAS, Beijing. Synonymy: Wood 1988b: 196.

References: (**tx**) Tsai & Yin 1964: 94, 96; Wood, S. L. 1988b: 196.

***osumiensis* Murayama** 1955: 90. Holotype ♂; Japan: Kishira, Kagoshima pref.; Murayama Collection in USNM, Washington.

Distribution: Asia (Japan).

Hosts: *Podocarpus nagi*.

References: (**cn**) Mumford 1960: 9. (**ds**) Mumford 1960: 9; Murayama 1955: 90, 97; Nobuchi 1985: 8. (**tx**) Murayama 1955: 90, 97.

***pacificus* Wood** 1960a: 15. Holotype ♂; Caroline Islands: Ngeroi (Garakayo), Palau Islands; FMNH, Chicago.

Distribution: Micronesia (Palau Islands in Caroline Islands).

References: (**tx**) de Ruette 1970: 105; Wood, S. L. 1960a: 15.

***palearis* Wood** 1969b: 2. Holotype ♂; 16 km E Chiapa de Corzo, Chiapas, Mexico; Wood Collection.
Distribution: North America (Chiapas in Mexico).
Hosts: Juniperus sp.
References: (hb) Wood, S. L. 1982b: 295. (ds) Wood, S. L. 1982b: 295. (**tx**) Wood, S. L. 1969b: 2, 1982b: 295.

***perlatus* Chapuis** 1875: 198. Syntypes, sex?; Japan (Hiogo); IRSNB, Brussels.
Distribution: Asia (Sichuan in China/ Japan/ Korea/ Taiwan).
Hosts: *Cunninghamia lanceolata, C. sinensis, Chamaecyparis* spp., *Cryptomeria* sp., *Juniperus* sp., *Sabina chinensis, Taxus* sp., *Thujopsis* sp.
Notes: (3) Schedl 1950b: 82 (redescribed).
References: (**bv**) Choo, Woo, & Park 1988. (**cn**) Anonymous 1977r; Razzauti 1956: 141; Shiraki 1952; Zhao & Cao 1987. (**ec**) Razzauti 1956: 141; Yasumatsu & Watanabe 1965: 69. (**hb**) Razzauti 1956: 141; Takahashi 1989: 403; Zhao & Cao 1987; Zocchi 1956: 141. (**ds**) Anonymous 1977r; Bain 1974: 15; Blandford 1894c; Cho 1957; Choo 1983: 46; Choo & Woo 1985: 164; Choo, Woo, & Park 1988; Hagedorn 1910d: 27; Kleine 1912b: 183, 1914b: 255, 1934a: 135; Ko 1969: 280; Ku 1964; Murayama 1929b: 2, 1930a: 6, 1930b: 9, 1934d: 505, 1936a: 125, 1937b: 375, 1949c: 100, 1953a: 8, 1953c: 149, 1955: 97; Nakane et al. 1963: 382; Niisima 1942: 69; Nobuchi 1967: 20, 1985c: 8; Pfeffer 1943a: 5; Shiraki 1952. (**tx**) Chapuis 1875: 198; Choo 1983: 46; Hagedorn 1910a: 65; Murayama 1930b: 9, 1934: 505–512, 1936a: 125, 1937b: 375, 1952a: 22, 1953a: 8, 1954b: 160, 1955: 97; Nakane et al. 1963: 382, pl. 191; Niisima 1909: 124, 1910a: 6, 1942: 69; Pfeffer 1943a: 5; Schedl 1934f: 1641, 1950b: 82; Zocchi 1956: 141. (**ms**) Mastumura 1931.

***pertuberculatus* Eggers** 1939c: 115. Holotype, sex?; Formosa (Mt. Arisan); M. Chujo Collection, not located.
Distribution: Asia (Taiwan).
References: (**cn**) Razzauti 1956: 141. (**ec**) Razzauti 1956: 141. (**hb**) Razzauti 1956: 141; Zocchi 1956: 141. (**ds**) Niisima 1942: 73; Nobuchi 1967: 20. (**tx**) Eggers 1939c: 115; Niisima 1942: 73; Zocchi 1956: 141.

***phoebe* Wood** 1988b: 198. Holotype ♂; Nauri Landowne, Uttar Pradesh, India; FRI, Dehra Dun.
Distribution: Asia (Uttar Pradesh in India).
Hosts: *Phoebe lanceolata*.
References: (**tx**) Wood, S. L. 1988b: 198.

***phyllocladus* Bright** 1989: 81. Holotype ♂; Borneo: Laying-Laying, Mount Kinabalu N. P., Sabah, 2621 m; CNCI, Ottawa.
Figures: Bright 1989: 81.
Distribution: Indonesia (Borneo).
Hosts: *Phyllocladus hypophallus*.
References: (**tx**) Bright 1989: 81.

***pini* Swaine** 1915b: 362. Lectotype ♀; Riding Mts., Manitoba; CNCI, Ottawa, designated by Bright 1967b: 677.
Figures: Blackman 1942c:fig. 1 (declivity).
Distribution: North America (Alaska/ Alberta, British Columbia, Manitoba, Northwest Territories, Quebec, Yukon in Canada/ Idaho, Michigan, Montana in USA).
Hosts: *Picea glauca, Pinus banksiana*.
Notes: (3) Blackman 1942c: 407 (redescribed).
References: (**cn**) Chamberlin 1924; Doane et al. 1936; Razzauti 1956: 141; Swaine 1918a: 67, 69. (**ec**) Razzauti 1956: 141; Werner & Holsten 1984. (**hb**) Baker, W. L. 1972: 248; Bright 1976d: 84; Chamberlin 1939: 175; Doane et al. 1936; Gast et al. 1989: 383; Razzauti 1956: 141; Swaine 1918a: 67, 69; Wood, S. L. 1982b: 291; Zocchi 1956: 141. (**ds**) Ashworth, 1977, 1980; Ashworth & Cvancara 1983; Blackman 1942c: 407; Blackwelder & Blackwelder 1948; Bright 1976d: 84; Chamberlin 1925, 1939: 175; Dodge 1938; Drooz 1985: 352; Furniss, R. L. & Carolin 1977: 367; Gast et al. 1989: 383; Keen 1929a: 19; Kleine 1934a: 135; Leng 1920: 338; Morgan, A. V. & Morgan 1979, 1980: 1110; Schwert & Morgan 1980; Werner & Holsten 1984; Wood, S. L. 1982b: 291. (**tx**) Blackman 1942c: 407; Bright 1967b: 677, 1976d: 83–84; Chamberlin 1939: 175, 1955; Dodge 1938; Keen 1929a: 19; de Ruette 1970: 106; Swaine 1915b: 362, 1918a: 67, 69; 1934: 205; Wood, S. L. 1957c: 400, 1972c: 149, 1982b: 291; Zocchi 1956: 141.

piceae Swaine 1934: 205. Holotype ♀; Berry Mountain Brook, Cascapedia River, Gaspe Co., Quebec, Canada; CNCI, Ottawa. Synonymy: Wood 1957c: 400.
Notes: (3) Blackman 1942c: 408 (redescribed).
References: (**cn**) Razzauti 1956: 141. (**ec**) Razzauti 1956: 141. (**hb**) Chamberlin 1939: 179; Razzauti 1956: 141; Zocchi 1956: 141. (**ds**) Beaulne 1956; Blackman 1942c: 408; Blackwelder 1939; Blackwelder & Blackwelder 1948; Chamberlin 1939: 179. (**tx**) Blackman 1942c: 408; Bright 1967b: 677; Chamberlin 1939: 179, 1955; de Ruette 1970: 106; Swaine 1934: 205; Wood, S. L. 1957c: 400; Zocchi 1956: 141.

alaskanus Blackman 1942c: 409. Holotype ♂; Eagle, Alaska [USA]; USNM, Washington. Synonymy: Wood 1972c: 149.
References: (**cn**) Beckwith 1972a; Razzauti 1956: 141. (**ec**) Razzauti 1956: 141. (**hb**) Razzauti 1956: 141; Zocchi 1956: 141. (**ds**) Beckwith 1972a; Blackwelder & Blackwelder 1948; Evans, D., Lowe, & Hunt 1978. (**tx**) Beckwith 1972a; Blackman 1942c: 409; Chamberlin 1955; Wood, S. L. 1972c: 149; Zocchi 1956: 141.

***podocarpi* Browne** 1986b: 663. Holotype ♂; Vietnam: Qui Nhon to Tagonoura (Japan), imported; BMNH, London.

Distribution: Asia (Vietnam).

Hosts: *Podocarpus* sp.

References: (**tx**) Browne 1986b: 663.

***pulchellus* Blandford** 1894d: 69. Holotype, sex?; Wada Toge, Japan; BMNH, London.

Distribution: Asia (Japan).

Hosts: *Acanthopanax spinosus, Benzoin* sp., *Machilus thunbergii, Parabenzoin praecox, Quercus* sp., *Stayrax* spp.

Notes: (3) Schedl 1950b: 83 (original description quoted).

References: (**cn**) Razzauti 1956: 141. (**ec**) Razzauti 1956: 141. (**hb**) Razzauti 1956: 141; Zocchi 1956: 141. (**ds**) Blandford 1894c; Hagedorn 1910d: 27; Kleine 1912b: 183, 1914b: 255; Murayama 1953c: 149, 1955: 96; Nobuchi 1985: 8; Pfeffer 1943a: 5. (**tx**) Blandford 1894d: 69; Hagedorn 1910a: 65; Murayama 1954b: 160, 1955: 96, 1963b: 23; Nobuchi 1959a: 10; Pfeffer 1943a: 5; Schedl 1934f: 1641, 1950b: 83, 1953e: 23; Zocchi 1956: 141.

dubius Blandford 1894d: 70. Holotype, sex?; Kurigahara (Japan); BMNH, London. Synonymy: Murayama 1963b: 23.

Notes: (3) Schedl 1950b: 83 (original description quoted).

References: (**cn**) Razzauti 1956: 141. (**ec**) Razzauti 1956: 141. (**hb**) Razzauti 1956: 141; Zocchi 1956: 141. (**ds**) Blandford 1894c; Hagedorn 1910d: 27; Kleine 1912b: 183, 1914b: 255; Murayama 1955: 96, 1966: 23; Pfeffer 1943a: 5. (**tx**) Blandford 1894d: 70; Hagedorn 1910a: 65; Murayama 1954b: 159, 1955: 96, 1963b: 23; Nobuchi 1959a: 10; Pfeffer 1943a: 5; Schedl 1934f: 1641, 1950b: 83; Zocchi 1956: 141.

izuensis Nobuchi 1959a: 9. Holotype, sex?; Japan: Mt. Amagi, Shizuoka pref.; Nobuchi Collection, Ibaraki. Synonymy: Murayama 1963b: 23.

References: (**ds**) Nobuchi 1985: 8. (**tx**) Murayama 1963b: 23; Nobuchi 1959a: 9.

***punctatus* LeConte** 1876: 382. Lectotype ♀; Oregon [USA]; MCZ, Cambridge, designated by Wood 1982b: 304.

Figures: Blackman 1942c:figs. 9–12, Bright 1976d: 83, 105, 201, 207.

Distribution: North America (Alaska/ British Columbia in Canada/ California, N Idaho, W Montana, W Nevada, Oregon, Washingon in USA).

Hosts: *Chamaecyparis nootkatensis, Juniperus occidentalis, Libocedrus decurrens, Sequoia gigantea, S. sempevirons, Thuja occidentalis, T. plicata, Tsuga heterophylla.*

Notes: (3) Blackman 1942c: 429 (redescribed).

References: (**bv**) Barr, B. A. 1969: 642; Daterman, Rudinsky, & Nagel 1965. (**cn**) Anonymous 1962h, 1986: 8; Browne 1968b: 539; Chamberlin 1917: 353–356, 1924; Doane et al. 1936; Essig 1926: 517, 1958: 517; Fowler 1902b: 80; Hatch 1938: 193; Hopkins 1903a: 60, 1903b: 35, 1904a: 18; Keen 1938: 131, 1952c: 167; Razzauti 1956: 141; Rudinsky & Terriere 1959: 485–488; Ruppel 1967: 76; Salman 1933a: 133; Schuder 1969: 75; Schuh & Mote 1948: 120; Silver & Ross 1960: 97, 1962b: 112; Swaine 1918a: 67, 69; Wood, R. O. & Koot 1973a: 22. (**ec**) Burks 1979: 798; Bushing 1965: 463; Bushing & Bright 1965: 203; Deyrup & Gara 1978: 275; Hirschmann & Wisniewski 1982, 1983; Keen 1938: 131; Kinn 1966, 1971; Marsh 1979: 150; Matthews 1970; Razzauti 1956: 141; Townes, H. & Townes 1962. (**hb**) Bright 1976d: 87; Bright & Stark 1973: 48; Browne 1968b: 539; Chamberlin 1939: 171, 1958: 85; Daterman, Rudinsky, & Nagel 1965; Doane et al. 1936; Essig 1926: 517, 1958: 517; Hopkins 1903b: 35, 1904a: 18; Keen 1938: 131, 1952c: 167; Pierce 1907: 293; Razzauti 1956: 141; Swaine 1918a: 67, 69; Wood, S. L. 1982b: 304; Zocchi 1956: 141. (**ds**) Allen, S. J. 1969: 13; Blackman 1942c: 429; Blackwelder & Blackwelder 1948; Blatchley & Leng 1916: 659; Bright 1976d: 87; Bright & Stark 1973: 48; Browne 1968b: 539; Chamberlin 1925, 1939: 171, 1958: 85; Currie 1905: 73; Essig 1926: 517, 1958: 517; Fall 1906: 203; Furniss, M. M. & Furniss 1972; Furniss, R. L. & Carolin 1977: 367; Gast et al. 1990: 385; Hagedorn 1910d: 27; Henshaw 1882: 269, 1885: 149; Hopkins 1900c, 1903a; Hopping 1922, 1925a; Keen 1929a: 20, 1938: 131, 1952c: 167; Kleine 1912b: 183, 1914b: 407, 1934a: 135; Leng 1920: 338; Patterson & Hatch 1945: 150; Ruppel 1967: 76; Salman 1933a: 133; Schuder 1969: 75; Schuh & Mote 1948: 120; Schwarz 1886: 55; Swaine 1909: 130; Wood, S. L. 1972a: 409, 1982b: 304. (**tx**) Benoit 1985: 196; Blackman 1942c: 429; Blatchley & Leng 1916: 659; Bright 1976d: 83, 87, 195, 201, 207; Chamberlin 1939: 171, 1958: 85; Hagedorn 1910a: 66; Hatch 1927: 302; Hopkins 1900c, 1903b: 35; Keen 1929a: 20; LeConte 1876: 382; Schwarz 1886: 55; Swaine 1909: 130, 1917: 9, 1918a: 67, 69, 1924b: 147; Wood, S. L. 1966b: 27, 1972a: 409, 1972c: 149, 1982b: 304; Zocchi 1956: 141. (**ms**) Essig 1931: 685; Hatch 1938: 193.

rubicundulus Swaine 1924b: 144. Holotype ♀; Hossack Meadows, Tulare Co., California [USA]; CNCI, Ottawa. Synonymy: Wood 1972c: 149.

Notes: (3) Blackman 1942c: 431 (redescribed).

References: (**cn**) Doane et al. 1936; Keen 1938: 131, 1952c: 168; Razzauti 1956: 141; Schuder 1969: 81. (**ec**) Keen 1938: 131; Kinn 1971; Razzauti 1956: 141. (**hb**) Chamberlin 1939: 176, 1958: 86; DeLeon 1952; Doane et al. 1936; Keen 1938: 131, 1952c: 168; Razzauti 1956: 141; Zocchi 1956: 141. (**ds**) Blackman

1942c: 431; Blackwelder & Blackwelder 1948; Chamberlin 1939: 176, 1958: 86; DeLeon 1952; Keen 1929a: 21, 1938: 131, 1952c: 168; Kleine 1934a: 135; Leng & Mutchler 1927: 51; Schuder 1969: 81. (**tx**) Blackman 1942c: 431; Bright 1967b: 677; Bruck 1936a; Chamberlin 1939: 176, 1958: 86; Keen 1929a: 21; de Ruette 1970: 106; Schuder 1969: 81; Swaine 1924b: 144; Wood, S. L. 1972c: 149; Zocchi 1956: 141.

buckhorni Blackman 1942c: 432. Holotype ♂; Portland, Oregon [USA]; USNM, Washington. Synonymy: Wood 1966b: 27.
References: (**cn**) Razzauti 1956: 141. (**ec**) Razzauti 1956: 141. (**hb**) Chamberlin 1958: 87; Razzauti 1956: 141; Zocchi 1956: 141. (**ds**) Blackwelder & Blackwelder 1948; Chamberlin 1958: 87. (**tx**) Blackman 1942c: 432; Chamberlin 1958: 87; Wood, S. L. 1966b: 27; Zocchi 1956: 141.

kaniksu Blackman 1942c: 434. Holotype ♂; Metaline Falls, Washington [USA]; USNM, Washington. Synonymy: Wood 1966b: 27.
References: (**cn**) Razzauti 1956: 141. (**ec**) Razzauti 1956: 141. (**hb**) Chamberlin 1958: 88; Razzauti 1956: 141; Zocchi 1956: 141. (**ds**) Blackwelder & Blackwelder 1948; Chamberlin 1958: 88; Patterson & Hatch 1945: 150. (**tx**) Blackman 1942c: 434; Chamberlin 1958: 88; de Ruette 1970: 105; Wood, S. L. 1966b: 27; Zocchi 1956: 141.

rusti Blackman 1942c: 435. Holotype ♂; Metaline Falls, Washington [USA]; USNM, Washington. Synonymy: Wood 1966b: 27.
References: (**cn**) Razzauti 1956: 141. (**ec**) Razzauti 1956: 141. (**hb**) Chamberlin 1958: 88; Razzauti 1956: 141; Zocchi 1956: 141. (**ds**) Blackwelder & Blackwelder 1948; Chamberlin 1958: 88; Patterson & Hatch 1945: 150. (**tx**) Blackman 1942c: 435; Chamberlin 1958: 88; Wood, S. L. 1966b: 27; Zocchi 1956: 141.

chamberlini Blackman 1942c: 470. Holotype ♂; Alturas, California [USA]; USNM, Washington. Synonymy: Wood 1972c: 149.
References: (**cn**) Razzauti 1956: 141. (**ec**) Razzauti 1956: 141. (**hb**) Chamberlin 1958: 92; Razzauti 1956: 141; Zocchi 1956: 141. (**ds**) Blackwelder & Blackwelder 1948; Chamberlin 1958: 92; Wood, S. L. 1972a: 408. (**tx**) Blackman 1942c: 470; Bright 1966b: 305; Chamberlin 1958: 92; Furniss, M. M. & Furniss 1972; Wood, S. L. 1972a: 408, 1972c: 149; Zocchi 1956: 141.

° ***regimontanus* (Hagedorn)** 1906: 119 (*Phlocosinites*). Holotype, sex?; Bernstein; not located.
Figures: Schedl 1947a: 40 (adult).
Distribution: Europe (fossil in Baltic amber).
References: (**ds**) Hagedorn 1907a, 1907b, 1910d: 28; Kleine 1912a: 163, 1912b: 183; Spahr 1981. (**tx**) Hagedorn 1906: 119, 1907a, 1907b, 1910a: 65; Keler 1928: 27; Schedl 1947a: 15, 17, 39.

° ***rehi* (Hagedorn)** 1906: 118 (*Phloeosinites*). Holotype, sex?; Bernstein; apparently lost.
Distribution: Europe (fossil in Baltic amber).
Notes: (3) Schedl 1947a: 35 (original description quoted).
References: (**ds**) Hagedorn 1907a, 1907b, 1910d: 28; Kleine 1912a: 163, 1912b: 183; Spahr 1981. (**tx**) Hagedorn 1906: 118, 1907a, 1907b, 1910a: 65; Hopkins 1914: 126; Keler 1928: 26; Schedl 1947a: 15, 35.

° ***robustus* (Schedl)** 1947a: 36 (*Phloeosinites*). Holotype, sex?; Baltic ambre; Geologisch-Paleontologische Institut, Albertus Universitat, Konigsberg.
Distribution: Europe (fossil in Baltic amber).
References: (**ds**) Spahr 1981. (**tx**) Schedl 1947a: 17, 36.

***rudis* Blandford** 1894d: 73. Syntypes, sex?; Kashiwage and Kobe, Japan; BMNH, London.
Figures: Grune 1979: 84, Nakane et al. 1963:pl. 191.
Distribution: Asia (Japan/ Korea), Europe (introduced into France).
Hosts: *Chamaecyparis obtusa, Cryptomeria japonica, Juniperus chinensis, Thuja japonica, Thujopsis dolobrata.*
Notes: (3) Schedl 1950b: 34 (redescribed).
References: (**bv**) Grune 1979: 85. (**cn**) Anonymous 1977r, 1978w, 1979p, 1980g; Grandi 1951; Razzauti 1956: 130, 205. (**ec**) Razzauti 1956: 130, 205; Wichmann 1955a: 101; Yasumatsu & Watanabe 1965: 60. (**hb**) Balachowsky 1961; Grandi 1951; Postner 1974: 417; Razzauti 1956: 130, 205; Zocchi 1956: 141, 205–208. (**ds**) Anonymous 1977r, 1978w, 1979p, 1980g; Blandford 1894c; Chararas 1967a; Choo 1983: 47; Choo & Woo 1985: 164; Choo, Woo, & Nobuchi 1988a: 133; Choo, Woo, & Park 1983: 175; Grune 1979: 85; Hagedorn 1910d: 27; Kleine 1912b: 183, 1914b: 255, 1934a: 135; Lucht 1987: 277; Murayama 1953a: 8, 1955: 97; Nakane et al. 1963: 382; Niisima 1942: 71; Nobuchi 1985: 8; Pfeffer 1943a: 5; Postner 1974: 417; Schedl 1954b: 198, 1981b: 63; Wichmann 1955a: 101. (**tx**) Balachowsky 1949a: 120, 1961; Blandford 1894d: 73; Choo 1983: 47; Grune 1979: 84–85; Hagedorn 1910a: 65; Hoffmann 1942; Lucht 1987: 277; Murayama 1952a: 19, 1953a: 8, 1955: 97; Nakane et al. 1963: 382, pl. 191; Niisima 1910a: 6, 1942: 71; Pfeffer 1943a: 5; Postner 1974: 417; Schedl 1934f: 1641, 1950b: 84, 1954b: 198, 1955d: 273, 1981b: 63; Schmidt, G. 1980: 25; Zocchi 1956: 141, 205–208.

shotoensis Murayama 1955: 88. Holotype ♂; Japan: Onude, Shodojima, Kagawa pref; Murayama Collection in USNM, Washington. Synonymy: Wood 1992b: 84.
References: (**cn**) Mumford 1960: 37. (**ds**)

Mumford 1960: 37; Murayama 1955: 88, 96; Nobuchi 1985: 8. (**tx**) Murayama 1955: 88, 96; Wood, S. L. 1992b: 84.

***sannohensis* Murayama** 1954b: 190. Holotype ♂; Japan: Sannohe, Aomori pref.; Murayama Collection in USNM, Washington.
Distribution: Asia (Guizhou in China/ Japan).
Hosts: *Chamaecyparis obtusa, Cryptomeria japonica, Thujopsis dolobrata.*
References: (**ds**) Murayama 1955: 97, 103. (**tx**) Murayama 1954b: 161, 190, 1955: 97, 103.

***scopulorum* Swaine** 1924b: 148. Holotype ♂; Williams Lake, British Columbia; CNCI, Ottawa.
Figures: Blackman 1942c: fig. 26 (male declivity), Bright 1976d: 83 (ceclivity), 216 (galleries).
Notes: (1) Wood 1982b: 302 (subspecies established). (3) Blackman 1942c: 465 (redescribed).
References: (**cn**) Doane et al. 1936; Keen 1938: 131, 1952c: 168; Razzauti 1956: 141. (**ec**) Keen 1938: 131; Razzauti 1956: 141. (**hb**) Bright 1976d: 87; Chamberlin 1939: 179, 1958: 93; Doane et al. 1936; Keen 1938: 131, 1952c: 168; Razzauti 1956: 141; Zocchi 1956: 142. (**ds**) Blackman 1942c: 465; Blackwelder & Blackwelder 1948; Bright 1976d: 87; Chamberlin 1925, 1939: 179, 1958: 93; Furniss, R. L. & Carolin 1977: 368; Hopping 1925a: 105–106; Keen 1929a: 20, 1938: 131, 1952c: 168; Kleine 1934a: 135; Leng & Mutchler 1927: 51; Patterson & Hatch 1945: 150; Wood, S. L. 1972a: 408, 1982b: 302. (**tx**) Blackman 1942c: 465; Bright 1967b: 677, 1976d: 83, 87; Chamberlin 1939: 179, 1958: 83; Keen 1929a: 20; de Ruette 1970: 106; Schedl 1939n: 12; Swaine 1924b: 148; Wood, S. L. 1972a: 408, 1982b: 302; Zocchi 1956: 142.

scopulorum scopulorum:
Distribution: North America (Alberta, British Columbia in Canada/ Oregon, Washington in USA).
Hosts: *Juniperus scopulorum.*
References: (**tx**) Bright 1976d: 83, 216; Swaine 1924b: 148; Wood, S. L. 1982b: 302.

***scopulorum neomexicanus* Blackman** 1942c: 460. Holotype ♂; Vermejo, New Mexico [USA]; USNM, Washington.
Distribution: North America (Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Texas, Utah in USA).
Hosts: *Cupressus arizonicus, Juniperus deppeana, J. monosperma, J. osteosperma.*
Notes: (1) Wood 1982b: 303 (reduced to subspecies).
References: (**cn**) Razzauti 1956: 141. (**ec**) Razzauti 1956: 141. (**hb**) Razzauti 1956: 141; Zocchi 1956: 141. (**ds**) Blackwelder & Blackwelder 1948; Drooz 1985: 352; Wood, S. L. 1948: 26, 1951a: 127, 1982b: 303. (**tx**) Blackman 1942c: 460; Wood, S. L. 1972c: 149, 1982b: 303; Zocchi 1956: 141.

texanus Blackman 1942c: 462. Holotype ♂; Montell, Uvalde County, Texas [USA]; USNM, Washington. Synonymy: Wood 1972c: 149.
References:(**hb**) Baker, W. L. 1972: 248; Zocchi 1956: 142. (**ds**) Blackwelder & Blackwelder 1948. (**tx**) Blackman 1942c: 462; McNamara 1984: 753; Wood, S. L. 1972c: 149; Zocchi 1956: 142.

***sequoiae* Hopkins** 1903b: 33. Holotype ♀; Sonoma Co., California [USA]; USNM, Washington.
Figures: Blackman 1942c: figs. 19–21 (male, female), Bright 1976d: 84, 215, Duncan 1983: 9, Ryker & Rudinsky 1979: 205, Swaine 1918a:pl. 15 (male declivity), White 1983: 330.
Distribution: North America (Alaska/ British Columbia in Canada/ California, Oregon, Washington in USA).
Hosts: *Chamaecyparis lawsoniana, C. nootkatensis, Cupressus macrocarpa, Libocedrus decurrens, Sequoia sempervirens, Thuja plicata.*
Notes: (3) Blackman 1942c: 446 (redescribed).
References: (**bv**) Daterman, Rudinsky, & Nagel 1965. (**cn**) Anonymous 1970t; Chamberlin 1924; Doane et al. 1936; Duncan 1983: 9; Essig 1926: 517, 1958: 517; Hatch 1938: 193; Hofacker et al. 1989; Hopkins 1903b: 33, 1904a: 18, 45; Keen 1938: 131; Razzauti 1956: 141; Ruppel 1967: 76; Ryker & Rudinsky 1979: 212; Swaine 1918a: 69–70. (**ec**) Burks 1979: 836; Bushing 1965: 463; Hirschmann & Wisniewski 1982, 1983; Keen 1938: 131; Kinn 1966, 1971; Marsh 1979: 158; Matthews 1970; Razzauti 1956: 141. (**hb**) Bright 1976d: 89; Bright & Stark 1973: 50; Chamberlin 1939: 179, 1958: 89; Daterman, Rudinsky & Nagel 1965; DeLeon 1952; Doane et al. 1936; Duncan 1983: 9; Essig 1926: 517, 1958: 517; Hopkins 1901e: 66, 1903b: 33, 1904a: 18, 45; Keen 1938: 131; Pierce 1907: 294; Razzauti 1956: 141; Ryker & Rudinsky 1979: 212; Swaine 1918a: 69–70; White, R. E. 1983: 330; Zocchi 1956: 142. (**ds**) Blackman 1942c: 446; Blackwelder & Blackwelder 1948; Bright 1976d: 89; Bright & Stark 1973: 50; Chamberlin 1925, 1939: 179, 1958: 89; Currie 1905: 74; DeLeon 1952: 76–78; Essig 1926: 517, 1958: 517; Furniss, M. M. & Furniss 1972, 1977; Furniss, R. L. & Carolin 1977: 368; Hagedorn 1906, 1910d: 27; Hopping 1922; Keen 1929a: 21, 1938: 131; Kleine 1912b: 183, 1914b: 390, 1934a: 135; Leng 1920: 338; Ruppel 1967: 76; Swaine 1909: 130; Wood, S. L. 1957c: 400, 1972a: 408, 1982b: 300. (**tx**) Benoit 1986: 35; Blackman 1942c: 446; Bright 1976d: 84, 89, 215; Chamberlin 1939: 179, 1958: 89; Duncan 1983: 9; Hagedorn 1906, 1910a: 66; Hopkins 1903b: 33; Keen 1929a: 21; Ryker & Rudinsky 1979: 204, 212; Schedl 1950f: 36; Swaine 1909: 130, 1918a: 69–70; White, R. E. 1983: 330; Wood, S. L. 1957c: 400, 1972a: 408, 1982b: 300; Zocchi 1956: 142. (**ms**) Hatch 1938: 193.

squamosus Blackman 1942c: 448. Holotype ♂; Naselle, Washington [USA]; USNM, Washing-

ton, preoccupied by Schedl 1942c: 165. Synonymy: Wood 1957c: 400.

References: (**cn**) Anonymous 1961h, 1961s, 1963y, 1965r; Bongberg 1962; Crosby 1963, 1966; Crosby & Baker 1966; Crosby & Curtis 1968, 1970, 1970b, 1971; Hard 1974: 11; Holsten, Werner, & Laurent 1980; Keen 1952c: 168. (**hb**) Holsten, Werner & Laurent 1980; Keen 1952c: 168; Zocchi 1956: 142. (**ds**) Anonymous 1963y, 1965r; Blackwelder & Blackwelder 1948; Keen 1952c: 168; Patterson & Hatch 1945: 150. (**tx**) Blackman 1942c: 448; Schedl 1950f: 37; Wood, S. L. 1957c: 400; Zocchi 1956: 142.

blackmani Schedl 1950f: 36. Holotype ♂; Naselle, Washington [USA]; USNM, Washington, automatic. Synonymy: Wood 1957c: 400.

References: (**hb**) Zocchi 1956: 141. (**tx**) Schedl 1950f: 36; Wood, S. L. 1957: 400; Zocchi 1956: 141.

***seriatus* Blandford** 1894d: 72. Syntypes, sex?; Higo, Japan; BMNH, London.

Distribution: Asia (Japan).

Hosts: *Chamaecyparis obtusa, Cinnamomum camphora.*

References: (**cn**) Razzauti 1956: 141. (**ec**) Razzauti 1956: 141. (**hb**) Razzauti 1956: 141; Zocchi 1956: 142. (**ds**) Hagedorn 1910d: 27; Kleine 1912b: 183, 1914b: 255; Murayama 1949c: 100, 1953a: 8, 1953c: 149, 1955: 98; Niisima 1942: 72; Nobuchi 1985: 8; Pfeffer 1943a: 5. (**tx**) Blandford 1894d: 72; Hagedorn 1910a: 65; Murayama 1953a: 9, 1955: 98; Niisima 1942: 72; Pfeffer 1943a: 5; Schedl 1934f: 1641, 1950b: 82, 1954b: 198; Zocchi 1956: 142.

***serratus* (LeConte)** 1868: 170 (*Hylesinus*). Holotype ♂; Middle States, [USA]; MCZ, Cambridge.

Figures: Blackman 1942c:fig. 25 (male declivity), Bright 1976d: 83.

Distribution: Antilles Islands (Jamaica), North America (Chihuahua, Durango, Hidalgo, Tlaxcala in Mexico/ Arizona, California, Idaho, New Mexico, Oregon, Washington in USA).

Hosts: *Juniperus deppeana, J. monosperma, J. occidentalis, J. osteosperma, J. scopulorum, J.* sp.

Notes: (1) LeConte 1876: 381 (to *Phloeosinus*). (3) Blackman 1942c: 456 (redescribed).

References: (**cn**) Swaine 1918a: 70. (**hb**) Bright 1976d: 84; Bright & Stark 1973: 44; Chamberlin 1939: 170; Schwarz 1889d: 176; Swaine 1918a: 70; Wood, S. L. 1982b: 296; Zocchi 1956: 142. (**ds**) Anonymous 1926c: 516; Atkinson & Equihua 1985a: 77, 1985b: 230; Blackman 1942c: 457; Blackwelder & Blackwelder 1948; Bright 1976d: 84, 1985c: 171; Bright & Stark 1973: 44; Chamberlin 1925, 1939: 170; Cockerell et al. 1907; Fall & Cockerell 1907: 218; Furniss, R. L. & Carolin 1977: 368; Henshaw 1882: 269, 1885: 149; Leng 1920: 338; Leonard 1928: 516; Schwarz 1886: 56; Smith, J. B. 1900: 365; Swaine 1909: 130; Wickham 1896a: 309; Wood, S. L. 1982b: 296. (**tx**) Blackman 1942c: 456; Blandford 1897: 160; Bright 1976d: 83–84, 1985c: 171; Chamberlin 1939: 170; Gemminger & Harold 1872: 2675; LeConte 1868: 170, 1876: 380–381; Schwarz 1886: 56, 1889d: 176; Swaine 1909: 130, 1918a: 70; Wood, S. L. 1969b: 2, 1972c: 150, 1974d: 286, 1977c: 387, 1982b: 296; Zocchi 1956: 142.

utahensis Swaine 1915b: 363. Lectotype ♀; Stockton, Utah [USA]; CNCI, Ottawa, designated by Bright 1967b: 677. Synonymy: Wood 1972c: 150.

Notes: (3) Blackman 1942c: 458 (redescribed).

References: (**cn**) Doane et al. 1936; Keen 1952c: 168; Swaine 1918a: 68. (**hb**) Chamberlin 1939: 175; Doane et al. 1936; Keen 1952c: 168; Swaine 1918a: 68; Zocchi 1956: 142. (**ds**) Blackman 1942c: 458; Blackwelder & Blackwelder 1948; Chamberlin 1939: 175; Keen 1929a: 20, 1952c: 168; Leng 1920: 338. (**tx**) Blackman 1942c: 458; Bright 1967b: 677; Chamberlin 1939: 175; Keen 1929a: 20; de Ruette 1970: 106; Swaine 1915b: 363, 1918a: 68; Wood, S. L. 1972c: 150; Zocchi 1956: 142.

rugosus Swaine 1917: 9. Lectotype ♀; Scaffold Meadow, Tulare Co., California [USA]; CNCI, Ottawa, designated by Bright 1967b: 677. Synonymy: Wood 1974d: 286.

References: (**cn**) Doane et al. 1936; Keen 1952c: 168; Razzauti 1956: 141; Swaine 1918a: 68. (**ec**) Razzauti 1956: 141. (**hb**) Bright & Stark 1973: 49; Chamberlin 1939: 172, 1958: 93; Doane et al. 1936; Keen 1952c: 168; Razzauti 1956: 141; Swaine 1918a: 69; Zocchi 1956: 141. (**ds**) Anonymous 1926c: 516; Blackman 1942c: 467; Blackwelder & Blackwelder 1948; Bright & Stark 1973: 49; Chamberlin 1939: 172; Hopping 1922, 1925a; Keen 1929a: 20, 1952c: 168; Kleine 1934a: 135; Leng 1920: 338; Leonard 1928: 516. (**tx**) Blackman 1942c: 467; Bright 1966b: 305, 1967b: 677; Chamberlin 1939: 172, 1958: 93; Keen 1929a: 22; de Ruette 1970: 106; Schedl 1939n: 12–13; Swaine 1917: 9, 1918a: 69; Wood 1974: 286; Zocchi 1956: 141.

juniperi Swaine 1917: 10. Lectotype ♀; Scaffold Meadow, Tulare Co., California [USA]; CNCI, Ottawa, designated by Bright 1967b: 677, preoccupied by Doebner 1860: 261. Synonymy: Wood 1972c: 150.

Notes: (3) Blackman 1942c: 455 (redescribed).

References: (**cn**) Doane et al. 1936; Keen 1938: 131, 1952c: 167; Razzauti 1956: 141; Swaine 1918a: 69. (**ec**) Keen 1938: 131; Razzauti 1956: 141. (**hb**) Chamberlin 1939: 172, 1958: 92; Doane et al. 1936; Keen 1983: 131, 1952c: 167; Razzauti 1956: 141; Swaine 1918a: 69; Zocchi 1956: 141. (**ds**) Blackman 1942c: 455; Blackwelder & Blackwelder 1948; Cham-

berlin 1925, 1939: 172, 1958: 92; DeMarseul 1869; Gaubil 1849: 128; Hopping 1922; Keen 1929: 21, 1938: 131, 1952c: 167; Leng 1920: 338; McComb et al. 1953: 4; Patterson & Hatch 1945: 150; Thatcher 1935: 261; Wood, S. L. 1972a: 407. (**tx**) Blackman 1942c: 455; Bright 1967b: 677; Chamberlin 1939: 172, 1958: 92; Eichhoff 1866: 275; Fauvel 1887; Hoebeke 1978; Hopkins 1909a: 3; Keen 1929a: 21; de Ruette 1970: 105; Swaine 1917: 10, 1918a: 69; Wood, S. L. 1972a: 407, 1972c: 150; Zocchi 1956: 141.

aciculatus Bruck 1931: 127. Holotype ♂; Chiricahua Mountains, Cochise Co., Arizona [USA]; CAS, San Francisco. Synonymy: Wood 1972c: 150.

Notes: (3) Blackman 1942c: 459 (redescribed).
References: (**ay**) Thomas, J. B. 1967. (**cn**) Keen 1952c: 168. (**hb**) Chamberlin 1939: 174; Keen 1952c: 168; Razzauti 1956: 141; Zocchi 1956: 141. (**ds**) Blackman 1942c: 459; Blackwelder & Blackwelder 1948; Chamberlin 1939: 174; Keen 1952c: 168; Leng & Mutchler 1933. (**tx**) Blackman 1942c: 459; Bruck 1931: 127; Chamberlin 1939: 174; de Ruette 1970: 105; Thomas, J. B. 1967; Zocchi 1956: 141.

neotropicus Schedl 1939n: 12. Holotype ♀; Jamaica; BMNH, London. Synonymy: Wood 1977c: 387.

References: (**cn**) Razzauti 1956: 141. (**ec**) Razzauti 1956: 141. (**hb**) Garraway & Freeman 1981; Razzauti 1956: 141; Zocchi 1956: 141. (**ds**) Blackwelder 1947; Bright 1972d: 38. (**tx**) Bright 1972d: 38; Schedl 1939n: 12; Wood, S. L. 1977c: 387; Zocchi 1956: 141.

***setosus* Bruck** 1933c: 54. Holotype ♂; Mt. St. Helena, California [USA]; OSUC, Columbus.
Distribution: North America (California in USA).
Hosts: *Cupressus sargentii*.
Notes: (3) Blackman 1942c: 422 (redescribed).
References: (**ec**) Marsh 1979: 140. (**hb**) Bright & Stark 1973: 44; Chamberlin 1939: 172; Zocchi 1956: 142. (**ds**) Blackman 1942c: 422; Blackwelder 1939; Blackwelder & Blackwelder 1948; Bright & Stark 1973: 44; Chamberlin 1939: 172; Furniss, R. L. & Carolin 1977: 368; Razzauti 1956: 142; Wood, S. L. 1982b: 309. (**tx**) Blackman 1942c: 422; Bruck 1933c: 54; Chamberlin 1939: 172; de Ruette 1970: 106; Wood, S. L. 1982b: 309; Zocchi 1956: 142.

° ***sexspinosus* (Schedl)** 1947a: 35 (*Phloeosinites*). Holotype, sex?; Baltic ambre; Geologisch-Paleontologische Institut, Albertus Universitat, Konigsberg.
Distribution: Europe (fossil in Baltic amber).
References: (**ds**) Spahr 1981. (**tx**) Schedl 1947a: 17, 35, 1972: 68–72.

***shensi* Tsai & Yin** 1964: 90, 95. Holotype ♂; Yunnan, China; IZAS, Beijing.
Distribution: Asia (Shanxi, Yunnan in China).
Hosts: *Juniperus chinensis, Sabina chinensis*.
References: (**tx**) Tsai & Yin 1964: 90, 95.

***similis* Eggers** 1925: 155. Holotype ♂; Tenasserim (Birma); Prage Museum.
Distribution: Asia (Burma).
Notes: (3) This is probably a *Hyledius*.
References: (**hb**) Zocchi 1956: 142. (**ds**) Razzauti 1956: 142. (**tx**) Eggers 1925: 155; Zocchi 1956: 142.

***sinensis* Schedl** 1953e: 23. Syntypes ♂♀; Fukien, Kuatum, China; Schedl Collection in NHMW, Wien and Klapperich Collection.
Distribution: Asia (Fujian, Hunan, Jiangxi, Shanxi, Sichuan in China).
Hosts: *Cunninghamia lanceolata, C. sinensis*.
References: (**ds**) Schedl 1960e: 171. (**tx**) McNamara 1984: 753; Schedl 1953e: 23, 1955h: 45.

***spinosus* Blackman** 1942c: 417. Holotype ♂; Chiricahua Mountains, "N. Mex." [actually in Arizona, USA]; USNM, Washington.
Figures: Blackman 1942c:figs. 5 (male), 6 (female).
Distribution: North America (Chihuahua in Mexico/ Arizona, New Mexico in USA).
Hosts: *Cupressus arizonica, Juniperus deppeana*.
References: (**hb**) Wood, S. L. 1982b: 313; Zocchi 1956: 142. (**ds**) Blackwelder & Blackwelder 1948; Furniss, R. L. & Carolin 1977: 368; Razzauti 1956: 142; Wood, S. L. 1960b: 61, 1982b: 313. (**tx**) Blackman 1942c: 417, 427; Wood, S. L. 1982b: 313; Zocchi 1956: 142.

° ***squalidens* (Scudder)** 1890: 468 (*Hylastes*). Holotype ♂; Ontario, Canada from fossil juniper branch; not located.
Distribution: North America (fossil in Ontario, Canada).
Hosts: Juniper.
Notes: (1) Scudder 1886: 194 (description without name).
References: (**hb**) Chamberlin 1939: 2–3. (**ds**) Chamberlin 1939: 2–3; Hagedorn 1910d: 27; Hopkins 1900c; Hubbard 1892: 28; Kleine 1912a: 212, 1912b: 183; Leng 1920: 363; Scudder 1890: 468, 1891: 540, 1893: 159; Wickham 1920: 363. (**tx**) Chamberlin 1939: 2–3; Hagedorn 1910a: 66; Hopkins 1900c; Keler 1928: 13; Scudder 1886: 194, 1890: 468.

***squamulatus* Chapuis** 1869: 39. Holotype, sex?; Himalaya; IRSNB, Brussels.
Distribution: Asia (Assam, Uttar Pradesh in India).
Hosts: *Machilus odoratissima*.
References: (**ec**) Beeson 1922c: 496. (**hb**) Beeson 1922c: 496; Stebbing 1909b: 17; Zocchi 1956: 140–142; (**ds**) Beeson 1922c: 496; Chapuis 1869: 39, 1873: 247; Hagedorn 1910d: 27; Kleine 1912b: 183, 1914b: 276; Razzauti 1956: 142. (**tx**) Chapuis 1869: 39, 1873: 247; Eggers 1923a: 138; Gem-

minger & Harold 1872: 2673; Hagedorn 1910a: 66; Stebbing 1909b: 17; Zocchi 1956: 140–142.

***swainei* Bruck** 1933c: 56. Lectotype ♀; Fairfax, Cypress Ridge, Marin Co., California [USA]; CNCI, Ottawa, designated by Bright 1967b: 677, automatic.

Distribution: North America (California in USA).

Hosts: *Cupressus sargentii, Juniperus occidentalis*.

References: (**cn**) Doane et al. 1936; Keen 1938: 32. (**ec**) Keen 1938: 32; Marsh 1979: 150. (**hb**) Bright & Stark 1973: 48; Chamberlin 1939: 173; Doane et al. 1936; Keen 1938: 32; Wood, S. L. 1982b: 312; Zocchi 1956: 142. (**ds**) Blackman 1942c: 418; Blackwelder 1939; Blackwelder & Blackwelder 1948; Bright & Stark 1973: 46; Chamberlin 1939: 173; Furniss, R. L. 1977: 368; Keen 1938: 32; Wood, S. L. 1982b: 312. (**tx**) Blackman 1942c: 418; Bruck 1933c: 56; Chamberlin 1939: 173; Wood, S. L. 1982b: 312; Zocchi 1956: 142.

minutus Swaine 1917: 9. Lectotype ♀; Fairfax, Cypress Ridge, Marin Co., California [USA]; CNCI, Ottawa, designated by Bright 1967b: 677, preoccupied by Blandford 1894d: 71.

References: (**cn**) Swaine 1918a: 67. (**hb**) Chamberlin 1925; Swaine 1918a: 67. (**ds**) Chamberlin 1925; Hopping 1922; Keen 1929a: 19; Kleine 1934a: 135; Leng 1920: 338. (**tx**) Blackman 1942c: 418; Bright 1967b: 677; Bruck 1933: 56; Hoebeke 1978; Keen 1929a: 19; de Ruette 1970: 105; Swaine 1917: 9, 1918a: 67, 1924b: 147.

***tacubayae* Hopkins** 1905b: 78. Holotype ♀; Mexico; USNM, Washington.

Figures: Atkinson et al. 1986: 24.

Distribution: North America (Guatemala/ Distrito Federal, Hidalgo, Mexico, Morelos, Veracruz in Mexico).

Hosts: *Cupressus benthamii, C. lindleyi, C. lusitanica*.

Notes: (3) Blackman 1942c: 466 (redescribed).

References: (**hb**) Atkinson et al. 1986: 25; Burgos & Saucedo 1983: 67; Inde 1921: 401; Wood, S. L. 1982b: 312; Zocchi 1956: 142. (**ds**) Atkinson & Equihua 1985a: 78, 1985b: 231, 1988: 94; Atkinson et al. 1986: 25; Blackman 1942c: 466; Blackwelder 1947; Burgos & Saucedo 1983: 67; Ferrer 1942; Hagedorn 1910d: 27; Kleine 1912b: 183, 1914b: 348, 1934a: 135; Schedl 1963c: 157, 1977e: 41; Wood, S. L. 1982b: 312. (**tx**) Atkinson et al. 1986: 24; Blackman 1942c: 466; Hagedorn 1910a: 66; Hopkins 1905b: 78–79; Schedl 1940a: 337; Wood, S. L. 1982b: 312; Zocchi 1956: 142.

***taxodii* Blackman** 1922b: 61. Holotype ♀; Columbia, Mississippi [USA]; USNM, Washington.

Figures: Blackman 1942c:figs. 22–23.

Notes: (1) Wood 1982b: 293 (subspecies established). (3) Blackman 1942c: 450 (redescribed).

References: (**cn**) Blackman 1950; Doane et al. 1936; Hopkins 1904a: 42; Schuder 1969: 82. (**ec**) Bushing 1965: 463. (**hb**) Atkinson & Equihua 1985a: 76; Baker, W. L. 1972: 248; Beal & Massey 1945: 85–88; Blackman 1950; Chamberlin 1939: 174; Doane et al. 1936; Drooz 1985: 351; Hopkins 1904a: 42; Wood, S. L. 1982b: 293; Zocchi 1956: 142. (**ds**) Atkinson & Equihua 1985a: 76; Atkinson et al. 1986: 25; Beal & Massey 1945: 85–88; Blackman 1942c: 450, 1950; Blackwelder & Blackwelder 1948; Burgos & Saucedo 1983: 64; Chamberlin 1939: 174; Deyrup 1981b: 4; Drooz 1985: 351; Kirk 1969; Leng & Mutchler 1927: 51; Schuder 1969: 82; Wood, S. L. 1982b: 293. (**tx**) Beal & Massey 1945: 85–88; Blackman 1922b: 61, 1942c: 450; Chamberlin 1939: 174; de Ruette 1970: 106; Wood, S. L. 1982b: 293; Zocchi 1956: 142.

taxodii taxodii:

Distribution: North America (Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Virginia in USA).

Hosts: *Taxodium distichum*.

References: (**tx**) Blackman 1922b: 61, 1942c: 450; Wood, S. L. 1956c: 250, 1982b: 293.

***taxodii taxodiicolens* Wood** 1956c: 250. Holotype ♂; Tomazunchale, San Luis Potosi, Mexico; SMUK, Lawrence.

Distribution: North America (Durango, Mexico, Morelos, Puebla, San Luis Potosi in Mexico).

Hosts: *Taxodium mucronatum*.

Notes: (1) Wood 1982b: 293 (reduced to subspecies).

References: (**tx**) Wood, S. L. 1956c: 250, 1982b: 293.

***thujae* (Perris)** 1855:LXXVII (*Hylesinus*). Syntypes, sex?; Department des Landes, France; MNHN, Paris.

Figures: Postner 1974: 415 (adult).

Distribution: Africa (Algeria/ Egypt/ Libya/ Morocco/ Tunisia), Asia (Turkey), Europe (Albania/ Austria/ Bulgaria/ Corsica/ Czechoslovakia/ England/ France/ Germany/ Greece/ Hungary/ Italy/ Poland/ Portugal/ Romania/ Sardinia/ Sicily/ Spain/ Switzerland/ W USSR/ Yugoslavia).

Hosts: *Biota orientalis, Callitris* sp., *Chamaeocyparis* spp., *Cupressus* spp., *Juniperus* spp., *Platycladus orientalis, Sequoia* spp., *Thuja* spp., *Wellingtonia* spp.

References: (**ay**) Bugnion 1887b; Doom 1964b; Escherich 1923b: 478, 600; Lekander 1969: 52; Lesne 1911a: 627; Nunberg 1928a: 140; Nusslin 1911a: 59, 255, 1912c: 285. (**bv**) Chararas 1976a, 1980b: 561, 1982; Grune 1979: 83; Prell 1930c: 643. (**cn**) Chorbadzhievo 1929; Colbrant & Hatt 1962: 21–28; Doom 1964b: 354–357; Escherich 1923b: 478, 618; Gabler 1955; Grandi 1951; Hoffmann 1938; Kamp 1956b: 472; Kleine 1932a: 296; Moussion 1988; Nusslin 1913: 240; Ohnesorge 1955: 280; Paulian 1943: 324; Rabasse 1980; Razzauti 1956: 130, 189; Rhumbler 1922: 282, 1927:

292; Schimitschek 1937b: 9, 1955c: 76; Schwerdtfeger 1944a: 183, 1957a: 189; Szczepanski 1973; Vogt, H. 1972; Wachtl 1901: 381. (**ec**) Balachowsky & Chararas 1964; Chararas 1957d, 1959c; Graham 1969: 880; Jamnicky 1957b: 25; Karpinski 1932a: 93; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1983; Kleine 1908c: 182, 1909a: 45, 78; Kneiff 1923: 246; Michalski & Ratajczak 1989; Nosek 1959a: 118, 1959b: 87; Novak, P. 1952: 416; Nusslin 1927: 294; Perris 1856a: 243; Pfeffer 1923a: 330, 1928b: 7, 1943b: 179; Razzauti 1956: 130, 189; Ruschkamp 1930: 140; Scheidter 1936: 234; Schwerdtfeger 1944a: 183, 1957a: 189; Sedlaczek 1935a: 162; Szczepanski 1960a: 409, 1973; Thompson, W. R. 1943: 87; Wichmann 1955a: 105. (**hb**) Anonymous 1920: 128; Baeta Neves & Goes 1944; Barbey 1901: 20, 58; Bargmann 1906; Beffa 1949, 1961; Borzi 1882; Buddenberg 1883: 133–140; Bugnion 1887b: 129–138; Cecconi 1924; Chararas 1962c: 390; Chorbadzhievo 1929; Dallimore & Munro 1922: 189–193; Decaux 1890d, 1890e, 1890f, 1893: 267; Doom 1964b: 354–357; Eichhoff 1881a: 38, 132, 1892b: 99; Escherich 1923b: 478, 618; Gabler 1955; Girard 1873; Grandi 1951; Henschel 1895a: 146; Kamp 1951b, 1956a: 54–57; Karpinski & Strawinski 1948: 153; Kleine 1932a: 296; Knotek 1894a: 553, 1907: 281; Kozikowsky & Nunberg 1925: 135; Kraemer 1957: 247; Lengerken 1954: 72; Lesne 1938: 170; Lunardoni & Leonardi 1889: 434; Maisner 1962: 55–58; Munro 1926: 47; Nordlinger 1870a: 187; Nosek 1959a: 118, 1959b: 87; Nusslin 1898: 274, 1913: 240, 1927: 294; Ohnesorge 1955: 280; Owen 1977; Paulian 1943: 324; Perris 1856a: 243; Peyerimhoff 1919: 250; Postner 1974: 416; Prell 1930c: 643; Rafes 1962; Razzauti 1956: 130, 189; Rhumbler 1922: 282, 1927: 292; Rupertsberger 1880: 226; Saalas 1932: 67–73; Schedl 1981b: 62; Scheidter 1936: 234; Schwerdtfeger 1944a: 183, 1957a: 189; Sedlaczek 1935a: 162; Seitner 1914: 270; Stark 1952: 304; Strohmeyer 1907c: 82; Torka 1906: 400; Tschorbadjiev 1929: 160; Wachtl 1901: 381; Zocchi 1956: 141–142, 189–202, 1959: 103. (**ds**) Acloque 1896; Arru, Covassi, & de Bellis 1966: 33; Audras & Schaefer 1957; Baeta Neves & Goes 1944; Barthe 1896; Beare 1923: 14–15; Bedel 1888b: 394, 411; Beffa 1949; Blackman 1942c: 400; Blanchere & Robert 1889; Brakman 1966b: 204; Buresh & Lazarov 1956; Calwer 1884; Carpentier & Delaby 1908; Cecconi 1897; Chapuis 1869: 30, 1873: 247; Chararas 1962c: 390; Chararas & Berton 1961: 235; Chorbadzhievo 1929; Dallimore & Munro 1922; Donisthorpe 1931: 173; Eggers 1904; Escalera 1919; Escherich 1923b: 479, 618, 1932b; Favre 1890; Fuchs 1905a; Gozis 1875: 79; Gredler 1866: 372; Grune 1979: 83; Hagedorn 1910d: 28; Heinemann 1908b; Hennig 1954: 264; Henschel 1895a: 146; Heyden 1879: 139; Heyden, Reitter, & Weise 1883: 181, 1891: 669, 1906: 708; Hoffmann 1938: 14–16; Hopkins 1900c; Horion 1951, 1956: 123; Jazentkovsky 1912: 287; Kamp 1956b: 472; Karpinski 1926: 81, 1932a: 98, 1948b: 229; Karpinski & Strawinski 1948: 153; Kinelski et al. 1959: 245; Kleine 1912b: 183, 1913a: 34, 87, 1932a: 296, 1934a: 135; Kloft & Hinks 1945: 218; Koch 1977: 38; Knotek 1892a: 33, 1894a: 553; Koca 1905: 191; Kraatz 1869: 59; Krausse 1910: 171, 1911: 67; Lacordaire 1866: 363; Langhoffer 1915c: 156; Leclercq 1971; Lengerken 1939: 35; Lichtenstein & Picard 1920: 54–55; Lomnicki 1913b: 147; Lucht 1987: 277; Luigioni 1929: 991; Lunardoni & Leonardi 1889: 434; Novak, P. 1952: 416; Nunberg 1928b: 84, 87, 95, 1954: 30, 1960b: 154; Nusslin 1898: 274; Owen 1977; Palm 1976; Perris 1876a: 255, 1877a: 415; Peyerimhoff 1919: 250, 1933b: 383; Pfeffer 1924b: 471, 1928b: 7, 1931b: 73, 1935: 157, 1943a: 11, 1947d: 128, 1989a: 33; Pittioni 1943: 176; Postner 1974: 416; Rapp 1934: 719; Reclaire & Von der Wiel 1946: 75; Redtenbacher 1874: 370; Reitter 1894a: 50, 1916: 277; Roubal 1935b: 72, 1941: 265; Sainte-Claire 1914: 468; Sainte-Claire & Mequignon 1938: 446; Schaufuss 1915: 1218; Schaum 1859: 95, 1862: 100; Schedl 1967c: 70, 1980a: 5, 1981b: 62; Schilsky 1909: 187; Stark 1927b: 86, 1952: 304; Stein 1868: 113; Stein & Weise 1877: 163; Stierlin 1898: 434; Strauch 1861: 123; Tredl 1907: 10; Tschorbadjiev 1929: 160; Welch, R. C. 1968: 4, 1970: 140; White, M. G. 1966: 24; Wichmann 1916b: 432–433, 1927a: 53, 1955a: 105; Williams 1965; Winter, T. G. 1983: 20; Zocchi 1959: 103. (**tx**) Acloque 1896; Balachowsky 1949a: 119; Barbey 1901: 20, 58; Bedel 1888b: 394, 411; Beffa 1949, 1961; Bertolini 1872; Carpentier & Delaby 1908; Chapuis 1869: 39, 1873: 247; Doebner 1860; Eichhoff 1864b: 30, 1866: 275, 1881a: 38, 132, 1883a: 103; Endrodi 1957b; Escherich 1923b: 479, 618; Fauvel 1887, 1889; Fleischer 1927; Formanek 1907: 17; Gabler 1955; Gebien 1907: 197; Gemminger & Harold 1872: 2673; Girard 1873; Grune 1979: 83; Hagedorn 1901a: 65; Henschel 1878a, 1895a: 146; Hopkins 1900c, 1914: 126; Iablokoff-Khnzorian 1961: 71; Kalina 1969; Karpinski & Strawinski 1948: 153; Knotek 1892a: 33; Kraatz 1864: 140; Kuhnt 1913: 1050; Lacordaire 1866: 363; Lekander 1969: 52; Lucht 1987: 277; Luigioni 1929: 991; Lunardoni & Leonardi 1889: 434; Nordlinger 1870a: 187; Nunberg 1928a: 140, 1948b: 17, 1954: 30; Nusslin 1911a: 255, 59, 1912c: 285; Perris 1855:LXXVII (77), 1877a: 415; Pfeffer 1932b: 12, 1943a: 11, 1955a: 137; Portevin 1935: 314; Postner 1974: 416; Quaschik 1953: 35; Redtenbacher 1874: 370; Reitter 1894a: 50, 1901c: 201, 1913a: 38, 1916: 277; Rhumbler 1922: 282, 1927: 292; Rupertsberger 1880: 226; Schedl 1934f: 1641, 1950b: 60, 1952f: 86, 1980a: 5, 1981b: 62; Schimitschek

Stresemann et al. 1989: 352; Wood, S. L. 1974g: 236; Zocchi 1956: 141–142, 189–202. (**ms**) Escherich 1932b.

juniperi Doebner 1860: 261 (*Dendroctonus*). Syntypes, sex?; Wurtemberg, Germany; not located. Synonymy: Kraatz 1864: 140, DeMarseul 1869: 155, Schedl 1950b: 60.
References: (**hb**) Nordlinger 1856: 37. (**ds**) Gozis 1875: 79; Hagedorn 1910d: 28; Kraatz 1864: 146; Lacordaire 1866: 361; Schaum 1862: 100; Schilsky 1909: 187; Stein 1868: 113; Stein & Weise 1877: 163; (**tx**) Balachowsky 1949a: 119; DeMarseul 1869: 155; Doebner 1860: 261; Eichhoff 1866: 275–278; Kraatz 1864: 140; Lacordaire 1866: 361; Marseul 1869: 155; Nordlinger 1856: 37; Schedl 1950b: 60.

impressus Rey 1885: 125. Syntypes, sex?; France; not located. Synonymy: Schedl 1950b: 60.
References: (**ds**) Fauvel 1885; Schilsky 1890: 196. (**tx**) Eichhoff 1883a: 125; Fauvel 1885, 1887; Rey 1885: 125, 1887: 230, 1892b: 30; Schedl 1950b: 60.

serrifer Wichmann 1916: 12. Syntypes, sex?; Brioni and Parenzo [Yugoslavia]; Wichmann Collection, not located. Synonymy: Schedl 1950b: 60, 1964m: 304.
References: (**ec**) Jamnicky 1957b: 25; Kleine 1944: 81; Nuorteva 1957b: 64; Ruschka 1916: 25; Wichmann 1916: 17. (**hb**) Pfeffer 1941b: 19; Stark 1952: 304; Wichmann 1916: 17. (**ds**) Buresh & Lazarov 1956; Endrodi 1958b; Escherich 1932b; Horion 1951; Kleine 1934a: 135; Luigioni 1929: 991; Pfeffer 1936: 89, 1943a: 10; Pittioni 1943: 176; Roubal 1941: 265; Stark 1952: 304; Wichmann 1927a: 54. (**tx**) Endrodi 1957a, 1957b; Luigioni 1929: 991; Nunberg 1948b: 17; Pfeffer 1932b: 12, 1941b: 19, 1943a: 10, 1955a: 135; Schedl 1934f: 1641, 1950b: 60; 1964k: 222, 1964m: 304; Stark 1952: 304; Wichmann 1916: 12, 17, 1916b: 432–433. (**ms**) Escherich 1932b.

prostratus Peyerimhoff 1918: 259. Syntypes, sex?; Algeria; MNHN, Paris. Synonymy: Balachowsky 1949a: 120, Schedl 1950b: 60.
References: (**cn**) Hoffmann 1938: 14–16. (**ds**) Hoffmann 1938: 14–16; Kleine 1934a: 135; Pfeffer 1943a: 12. (**tx**) Balachowsky 1949a: 120; Peyerimhoff 1918: 259; Pfeffer 1943a: 12, 1955a: 135; Schedl 1934f: 1641, 1950b: 60, 1960b: 162.

***transversarius* Schedl** 1936g: 522. Syntypes, sex?; Queensland: Blackall Ranges; SAM, Adelaide, restricted by Schedl 1979c: 254.
Distribution: Australia (Queensland).
References: (**hb**) Zocchi 1956: 142. (**ds**) Schedl 1936g: 522. (**tx**) Schedl 1936g: 522, 1979c: 254; Zocchi 1956: 142.

* ***tuberculifer* (Schedl)** 1947a: 37 (*Phloeosinites*). Holotype, sex?; Baltic ambre; Geologisch-Paleontologische Institut, Albertus Universitat, Konigsberg.
Distribution: Europe (fossil in Baltic amber).
References: (**tx**) Schedl 1947a: 17, 37.

***turkestanicus* Semenov** 1902: 269. Lectotype ♂; Turkestaniae rossicae, Bukhara orientalis; Semenov Collection, designated by Michalski 1969a: 893.
Figures: Stark 1952: 306 (male).
Distribution: Europe (Turkestan in W USSR).
Hosts: *Juniperus communis, J. psudosabinae.*
Notes: (3) Schedl 1950b: 96 (redescribed).
References: (**cn**) Greckin 1956: 1480; Mahnovskii 1952: 62–65; Razzauti 1956: 142; Yagdyev 1981. (**ec**) Razzauti 1956: 142. (**hb**) Greckin 1956: 1480; Kostin 1960: 132; Prutenskii 1938: 130–131; Razzauti 1956: 142; Stark 1952: 305; Zocchi 1956: 141–142. (**ds**) Hagedorn 1910d: 28; Kadyrov 1988: 43, 45, 1989; Kleine 1912b: 183, 1914b: 245–246, 1934a: 136; Pfeffer 1943a: 3, 9; Stark 1952: 305. (**tx**) Hagedorn 1910a: 65; Iablokoff-Khnzorian 1961: 157; Michalski 1969a: 893, 1969b: 568; Pfeffer 1943a: 3, 9, 1955a: 134; Reitter 1913a: 38; Schedl 1934f: 1641, 1950b: 97; Semenov 1902: 269; Stark 1952: 305; Zocchi 1956: 141–142.

***vandykei* Swaine** 1915b: 366. Lectotype ♀; published as Huckleberry Meadow, Fresno Co., California, type labeled Millwood, California [USA]; CNCI, Ottawa, designated by Bright 1967b: 677.
Distribution: North America (California, Oregon in USA).
Hosts: *Libocedrus decurrens.*
Notes: (3) Blackman 1942c: 425 (redescribed).
References: (**cn**) Doane et al. 1936; Essig 1926: 517; Keen 1938: 32; Schuder 1969: 75; Swaine 1918a: 68. (**ec**) Keen 1938: 32; Marsh 1979: 148. (**hb**) Bright & Stark 1973: 47; Chamberlin 1939: 176, 1958: 90; Doane et al. 1936; Essig 1926: 517; Keen 1938: 32; Swaine 1918a: 68; Wood, S. L. 1982b: 305; Zocchi 1956: 142. (**ds**) Blackman 1942c: 475; Blackwelder & Blackwelder 1948; Bright & Stark 1973: 47; Chamberlin 1925, 1939: 176, 1958: 90; Essig 1926: 517; Furniss, R. L. & Carolin 1977: 368; Hopping 1922, 1925a; Keen 1929a: 20, 1938: 32; Kleine 1934a: 136; Leng 1920: 338; Schuder 1969: 75; Wood, S. L. 1972a: 407, 1982b: 305. (**tx**) Blackman 1942c: 425; Bright 1967b: 677; Chamberlin 1939: 176, 1958: 90; Hoebeke 1978; Keen 1929a: 20; de Ruette 1970: 106; Swaine 1915b: 366, 1918a: 68; Wood, S. L. 1972a: 407, 1982b: 305; Zocchi 1956: 142.

russus Swaine 1924b: 148. Holotype ♀; San Bernardino Mountains, California [USA]; CNCI, Ottawa. Synonymy: Blackman 1942c: 425.
References: (**hb**) Chamberlin 1939: 178. (**ds**) Chamberlin 1939: 178; Leng & Mutchler 1927: 51. (**tx**) Blackman 1942c: 425; Bright

1967b: 677; Chamberlin 1939: 178; de Ruette 1970: 106; Swaine 1924b: 148.

***variolatus* Bruck** 1931: 126. Holotype ♂?; Mount Saint Helena, Napa Co., California [USA]; CAS, San Francisco.
Figures: Blackman 1942c:figs. 14–15.
Distribution: North America (California in USA).
Hosts: *Cupressus sargentii*.
Notes: (3) Blackman 1942c: 438 (redescribed).
References: (**cn**) Keen 1938: 131. (**ec**) Keen 1938: 131; Kinn 1971. (**hb**) Bright & Stark 1973: 49; Chamberlin 1939: 174; Keen 1938: 131; Wood, S. L. 1982b: 299; Zocchi 1956: 142. (**ds**) Blackman 1942c: 438; Blackwelder & Blackwelder 1948; Bright & Stark 1973: 49; Chamberlin 1939: 174; Furniss, R. L. & Carolin 1977: 368; Keen 1938: 131; Kleine 1934a: 136; Leng & Mutchler 1933: 94; Wood, S. L. 1982b: 299. (**tx**) Blackman 1942c: 438; Bruck 1931: 126, 1936a; Chamberlin 1939: 174; de Ruette 1970: 106; Wood, S. L. 1982b: 299; Zocchi 1956: 142.

° ***wolffi* (Schedl)** 1947a: 40 (*Phloeosinites*). Holotype, sex?; Baltic ambre; Geologisch-Paleontologische Institut, Albertus Universitat, Konigsberg.
Figures: Schedl 1947a: 41 (adult).
Distribution: Europe (fossil in Baltic amber).
References: (**ds**) Spahr 1981. (**tx**) Schedl 1947a: 17, 40.

Genus *Hyledius* Sampson

HYLEDIUS SAMPSON 1921: 35. Type-species: *Hylesius asper* Sampson = *Olonthogaster nitidicollis* Motschulsky, monobasic.

Holonthogaster Gemminger & Harold 1872: 2676. Type-species: *Olonthogaster nitidicollis* Motschulsky, automatic.
References: (**tx**) Gemminger & Harold 1872: 2676; Lucas 1920: 331.

Olonthogaster Motschulsky 1866: 401. Type-species: *Olonthogaster nitidicollis* Motschulsky, subsequent designation by Hopkins 1914: 67.
Status: International Commission on Zoological Nomenclature (ICZN 1981: 67) suppressed this name to preserve *Phloeosinus*.
Synonymy: Wood 1986a: 52.
References: (**tx**) Hagedorn 1910a: 161, 1910d: 118; Lucas 1920: 455; Motschulsky 1866: 410; Wood, S. L. 1969c: 113, 1974: 236, 1986a: 52.

Hylurgulus Eggers 1927b: 392. Type-species: *Hylurgulus sumatranus* Eggers, monobasic.
Synonymy: Wood 1986a: 52.
References: (**tx**) Eggers 1927b: 382–393; Schedl 1959a: 472; Wood, S. L. 1986a: 52.

Phloeosinopsis Schedl 1936j: 23. Type-species: *Phloeosinopsis armatus* Schedl = *Phloeosinus spinifer* Schedl, original designation.
Synonymy: Wood 1986a: 52.
References: (**tx**) Browne 1963c: 53; Schedl 1936j: 23; Wood, S. L. 1974g: 236.

Notes: (3) Browne 1961c: 64 (cites *rugicollis* Schedl, nomen nudum).
References: (**hb**) Wood, S. L. 1986a: 52. (**ds**) Wood, S. L. 1986a: 52. (**tx**) Sampson 1921: 35; Schedl 1958k: 152; Wood, S. L. 1986a: 52.

***birmanus* (Eggers)** 1923a: 138 (*Phloeosinus*). Holotype ♀; Birma; Hamburg Museum, lost, Prague Museum, Eggers cotype apparently in NHMW, Wien.
Distribution: Asia (Burma).
References: (**ds**) Nobuchi 1983: 299; Razzauti 1956: 141; Schedl 1966b: 6. (**tx**) Eggers 1923a: 138, 1925: 152, 1927b: 391; Schedl 1958k: 141.

***borneensis* (Schedl)** 1942a: 172 (*Phloeosinus*). Holotype ♀; Borneo; Schedl Collection in NHMW, Wien.
Distribution: Asia (Vietnam), Indonesia (Borneo).
References: (**hb**) Zocchi 1956: 141. (**ds**) Razzauti 1956: 141; Schedl 1965a: 339, 1975a: 454. (**tx**) Schedl 1942a: 172, 1953b: 123; Zocchi 1956: 141.

***brunneus* (Browne)** 1980a: 373 (*Phloeosinus*). Holotype ♀; Pontianak (Kalimantan) to Shimizu (imported to Japan from Indonesia); BMNH, London.
Distribution: Probably Indonesia.
References: (**tx**) Browne 1980a: 373.

***canus* (Browne)** 1972: 20 (*Phloeosinus*). Holotype, sex?; Thailand; BMNH, London.
Distribution: Asia (Thailand).
References: (**ds**) Beaver & Browne 1975: 292. (**tx**) Browne 1972: 20.

***ceylonicus* (Schedl)** 1959a: 473 (*Phloeosinus*). Syntypes ♂; Millawitiya Estate, Ceylon; Schedl Collection in NHMW, Wien.
Distribution: Asia (Yunnan in China/ Sri Lanka).
Hosts: *Myristica dactyloides*.
References: (**ds**) Schedl 1959a: 473. (**tx**) Schedl 1959a: 473.

***concinnulus* (Walker)** 1859: 261 (*Hylurgus*). Holotype ♂; Ceylon; BMNH, London.
Distribution: Asia (Sri Lanka).
Hosts: *Myristica dactyloides*.
References: (**hb**) Zocchi 1956: 141. (**ds**) Hagedorn 1910d: 26; Kleine 1912b: 183, 1914b: 273; Lacordaire 1866: 359; Razzauti 1956: 141; Schedl 1959a: 473, 1979c: 361. (**tx**) Gemminger & Harold 1872: 267; Hagedorn 1910a: 66; Lacordaire 1866: 359; Motschulsky 1863: 575; Schedl 1959a: 473; Walker 1859: 261; Wood, S. L. 1988b: 189; Zocchi 1956: 141.

nudifrons Motschulsky 1866: 402. Holotype ♂; Ceylon; IZM, Moscow. Synonymy: Wood 1988b: 189.
References: (**ds**) Hagedorn 1910d: 118; Kleine 1914b: 274. (**tx**) Gemminger & Harold 1872: 2676; Hagedorn 1910a: 161; Motschulsky 1866: 402; Wood, S. L. 1969c: 119, 1988b: 189.

***cribratus* (Blandford)** 1896b: 198 (*Phloeosinus*). Holotype ♂; Sumatra; BMNH, London.
Distribution: Asia (Hainan Island in China/ Malaya), Indonesia (Sumatra), Philippine Islands (Mindanao).
Hosts: *Knema furfuracea, Myristica philippinensis, Palaquium gutta, Pterocymbium* sp.
Notes: (3) Schedl 1942a: 173 (described male).
References: (**cn**) Browne 1961c: 61; Hill, D. S. 1983: 607; Kalshoven 1954: 5; Yunus & Hua 1980: 229. (**hb**) Beaver & Browne 1978: 592; Browne 1961c: 62–63; Hill, D. S. 1983: 607; Kalshoven 1954, 1958b: 163; Zocchi 1956: 141. (**ds**) Beaver & Browne 1978: 592; Browne 1961a: 303, 1961c: 62, 1981a: 125; Corbett 1924; Hagedorn 1910d: 28; Hill, D. S. 1983: 607; Kleine 1912b: 183, 1914b: 285; Razzauti 1956: 141; Schedl 1938g: 424, 1971c: 363; Yunus & Hua 1980: 229. (**tx**) Blandford 1896b: 198; Browne 1970: 543; Eggers 1923a: 138, 1925: 155; Hagedorn 1910a: 66; Schedl 1938g: 424, 1939f: 30; Zocchi 1956: 141.

malayensis Schedl 1936j: 22 (*Phloeosinus*). Syntypes, sex?; Malay Peninsula, Selangor: Sungai Bulog; BMNH, London, restricted by Schedl 1979c: 147. Synonymy: Browne 1970: 543.
Notes: (3) Schedl 1939f: 30 (var. *nagaensis*, no status), 1942a: 173 (described male).
References: (**cn**) Mathur & Singh 1960b: 84; Yunus & Hua 1980: 229. (**hb**) Browne 1961c: 63; Zocchi 1956: 141. (**ds**) Browne 1949b, 1961b: 63; Mathur & Singh 1960b: 84; Razzauti 1956: 141; Schedl 1936j: 22; Yunus & Hua 1980: 229. (**tx**) Browne 1949b, 1970: 543; Schedl 1936j: 22, 1939e: 328, 1942a: 173, 1958h: 498; Zocchi 1956: 141.

***detersus* (Chapuis)** 1869: 38 (*Phloeosinus*). Holotype ♂; Ceylan; IRSNB, Brussels.
Distribution: Asia (Sri Lanka).
Hosts: *Artocarpus heterophyllus.*
References: (**cn**) Holmes 1947: 109. (**hb**) Stebbing 1909b: 17; Zocchi 1956: 140–141. (**ds**) Chapuis 1869: 39, 1873: 247; Hagedorn 1910d: 29; Holmes 1947: 3, 109; Kleine 1912b: 183, 1914b: 273; Razzauti 1956: 141; Schedl 1959a: 472. (**tx**) Chapuis 1869: 38–39, 1873: 246–247; Eggers 1923a: 138; Gemminger & Harold 1872: 2673; Hagedorn 1910a: 66; Schedl 1959a: 472; Stebbing 1909b: 17; Zocchi 1956: 140–141.

***hylurgulus* (Eggers)** 1940h: 62 (*Phloeosinus*). Lectotype ♀; Sud-Sumatra; USNM, Washington, designated by Anderson & Anderson 1971: 33, automatic.
Distribution: Indonesia (Sumatra).
References: (**hb**) Zocchi 1956: 141. (**ds**) Razzauti 1956: 141. (**tx**) Anderson, W. H. & Anderson 1971: 33; Eggers 1940h: 62; Schedl 1942a: 173; Zocchi 1956: 141.

sumatranus Eggers 1927b: 393 (*Hylurgulus*). Lectotype ♀; Sud-Sumatra; USNM, Washington, designated by Anderson & Anderson 1971: 33, preoccupied by Eggers 1923a: 140.
References: (**tx**) Anderson, W. H. & Anderson 1971: 33; Eggers 1927b: 393, 1940h: 62.

***imitans* (Eggers)** 1927c: 75 (*Phloeosinus*). Lectotype ♂; Philippinen: Mindanao, Provinz Lanao, Kolambugan; USNM, Washington, designated by Anderson & Anderson 1971: 15.
Distribution: Asia (Malaya), Philippine Islands (Mindanao).
Hosts: *Myristica* sp.
References: (**hb**) Zocchi 1956: 141. (**ds**) Browne 1961c: 64, 1980a: 371; Nobuchi 1983: 299; Razzauti 1956: 141; Schedl 1966b: 10. (**tx**) Anderson, W. H. & Anderson 1971: 15; Eggers 1927c: 75; Schedl 1934d: 92, 1939e: 328; Zocchi 1956: 141.

***jiri* (Wood)** 1988b: 198 (*Olonthogaster*). Holotype ♀; Jiri Forest, Cachar, Assam, India; FRI, Dehra Dun.
Distribution: Asia (Assam in India).
Hosts: *Myristica longifolia.*
References: (**tx**) Wood, S. L. 1988b: 198.

***nitidicollis* (Motschulsky)** 1866: 401 (*Olonthogaster*). Holotype ♂; Ceylon; IZM, Moscow.
Distribution: Asia (Laos/ Malaya/ Sri Lanka), Indonesia (Sumatra), New Guinea, Philippine Islands (Luzon/ Mindanao).
Hosts: *Alphetonea* sp., *Litsea domarensis, Myristica philippinensis, M. fragrans.*
References: (**hb**) Kalshoven 1958b: 163. (**ds**) Hagedorn 1910d: 118; Kleine 1914b: 274; Schedl 1959a: 473. (**tx**) Gemminger & Harold 1872: 2676; Hagedorn 1910a: 161; Hopkins 1914: 122, 126; Lucas 1920: 455; Motschulsky 1866: 401; Schedl 1959a: 473; Wood, S. L. 1969c: 119. (**ms**) Lucas 1920: 455.

asper Sampson 1921: 35 (*Hyledius*). Holotype ♂; Luang Prabang, Houei Ko, Laos; BMNH, London. Synonymy: Wood 1988b: 198.
References: (**cn**) Yunus & Hua 1980: 229. (**hb**) Browne 1961c: 64. (**ds**) Browne 1961c: 64; Nobuchi 1983: 299; Sampson 1921: 35; Schedl 1966b: 9; Yunus & Hua 1980: 229. (**tx**) Sampson 1921: 35; Schedl 1954a: 139, 1958k: 152, 1966b: 9; Wood, S. L. 1988b: 198.

latus Eggers 1923a: 138 (*Phloeosinus*). Syntypes ♂; Liangagas (Sumatra); 3 in Stettin Museum, 2 in Eggers Collection, 2 Eggers syntypes in NHMW, Wien. Synonymy: Schedl 1958k: 152, 1966b: 9.
Notes: (3) Schedl 1979c: 137 (citation of holotype invalid).
References: (**hb**) Zocchi 1956: 141. (**ds**) Browne 1961a: 302, 1980a: 371, 1983a: 555, 1984b: 287; Ohno et al. 1988a: 91; Razzauti 1956: 141. (**tx**) Eggers 1923a: 138, 1927c: 75; Schedl 1934d: 92, 1958k: 152, 1966b: 9, 1979c: 137; Zocchi 1956: 141.

vagans Eggers 1923a: 139 (*Phloeosinus*). Holo-

type, sex?; Insel Yule bei Neu Guinea (1), and Sommerset, Australia (3); MCG, Genova and Eggers Collection (USNM, Washington?). Synonymy: Schedl 1958k: 152.
References: (**hb**) Zocchi 1956: 142. (**ds**) Schedl 1938g: 424. (**tx**) Eggers 1923a: 139; Schedl 1934d: 92, 1958k: 152, 1966b: 9; Zocchi 1956: 142.

philippinensis Schedl 1934d: 91 (*Phloeosinus*). Holotype ♀?; Philippinen, Mt. Makiling, Laguna, Luzon; Schedl Collection in NHMW, Wien. Synonymy: Schedl 1958k: 152.
References: (**hb**) Zocchi 1956: 141. (**ds**) Razzauti 1956: 141. (**tx**) Schedl 1934d: 91–92, 1942d: 2, 1958k: 152; Zocchi 1956: 141.

***papuanus* (Schedl)** 1936g: 521 (*Phloeosinus*). Syntypes, sex?; North-East Papua: Mt. Lamington, 1300–1500 feet, New Guinea; SAM, Adelaide, restricted by Schedl 1979c: 184.
Distribution: New Guinea.
References: (**hb**) Zocchi 1956: 141. (**ds**) Razzauti 1956: 141; Schedl 1936g: 521. (**tx**) Schedl 1936g: 521, 1979c: 184; Zocchi 1956: 141.

***penangensis* (Schedl)** 1975j: 295 (*Phloeosinus*). Holotype ♀; Penang, Lamb; Schedl Collection in NHMW, Wien.
Distribution: Asia (Malaya).
References: (**tx**) Beaver & Browne 1978: 592; Schedl 1975j: 295.

***regalis* (Wood)** 1988b: 198 (*Olonthogaster*). Holotype ♀; Weddegala, Ratnapura District, Sri Lanka; USNM, Washington.
Distribution: Asia (Sri Lanka).
Hosts: *Myristica dactyloides*.
References: (**tx**) Wood, S. L. 1988b: 198.

***solomonicus* (Browne)** 1980c: 494 (*Phloeosinus*). Holotype, sex?; Viru Harbour (Solomon Islands) to Tagonoura (imported to Japan from Solomon Islands); BMNH, London.
Distribution: Solomon Islands.
References: (**ds**) Ohno et al. 1988a: 91, 1989: 60. (**tx**) Browne 1980c: 494.

***spinifer* (Browne)** 1963c: 53 (*Phloeosinus*). Holotype, sex?; Malay Peninsula, Selangor: Sungai Buloh; BMNH, London, automatic.
Figures: Schedl 1936j: 24.
Distribution: Asia (Malaya).
References: (**ds**) Browne 1986c: 662. (**tx**) Browne 1963c: 53.

armatus Schedl 1936j: 23 (*Phloeosinopsis*). Holotype, sex?; Malay Peninsula, Selangor: Sungai Buloh; BMNH, London, preoccupied by Reitter 1887b: 192.
References: (**ds**) Browne 1961c: 64, 1963c: 24; Schedl 1936j: 23.

***subcarinatus* (Schedl)** 1942a: 173 (*Phloeosinus*). Holotype, sex?; Malaya, Rotan Tunggal F. R.; Schedl Collection in NHMW, Wien.
Distribution: Asia (Malaya).
Hosts: Myristicaceae.
References: (**hb**) Zocchi 1956: 142. (**ds**) Browne 1961c: 64; Razzauti 1956: 142. (**tx**) Schedl 1942a: 173; Zocchi 1956: 142.

***sumatranus* (Eggers)** 1923a: 140 (*Phloeosinus*). Holotype ♀; Si Rambe auf Sumatra; MCG, Genova.
Distribution: Indonesia (Si Rambe Island near Sumatra).
References: (**hb**) Zocchi 1956: 142. (**ds**) Razzauti 1956: 142. (**tx**) Anderson, W. H. & Anderson 1971: 33; Eggers 1923a: 140, 1925: 152, 1927b: 393, 1940: 62; Zocchi 1956: 142.

***takahashii* (Browne)** 1981b: 600 (*Phloeosinus*). Holotype, sex?; Katapang (Borneo) to Omaegaki (imported to Japan from Borneo); BMNH, London.
Distribution: Indonesia (Borneo).
References: (**tx**) Browne 1981b: 600.

***tuberculosus* (Browne)** 1970: 544 (*Phloeosinus*). Holotype ♀; Burma: Katha, Pinwe; BMNH, London.
Distribution: Asia (Burma).
Hosts: *Castanopsis* sp.
References: (**ds**) Browne 1980c: 483; Mathew 1982, 1987: 188. (**tx**) Beaver & Browne 1978: 593; Browne 1970: 544.

***vilis* (Blandford)** 1896b: 199 (*Phloeosinus*). Syntypes ♂ ♀; Sumatra; BMNH, London.
Distribution: Indonesia (Sumatra).
References: (**hb**) Zocchi 1956: 142. (**ds**) Browne 1970: 539, 1980a: 371; Hagedorn 1910d: 118; Kleine 1912b: 183, 1914b: 285. (**tx**) Blandford 1896b: 199; Hagedorn 1910a: 66; Schedl 1942a: 173; Zocchi 1956: 142.

***xanthophylli* (Browne)** 1949b: 896 (*Phloeosinus*). Holotype, sex?; Malaya: Kelantan, Jeram; BMNH, London.
Distribution: Asia (Malaya).
Hosts: *Xanthophyllum* sp.
References: (**hb**) Browne 1961c: 64; Zocchi 1956: 142. (**ds**) Browne 1961c: 64. (**tx**) Browne 1949b: 896; Zocchi 1956: 141.

Genus *Pseudochramesus* Blackman

PSEUDOCHRAMESUS BLACKMAN 1939: 87. Type-species: *Chramesus acuteclavatus* Hagedorn, original designation.
Keys: Blackman 1939: 88.
References: (**hb**) Wood, S. L. 1986a: 52. (**ds**) Wood, S. L. 1986a: 52. (**tx**) Blackman 1939: 87–88; Schedl 1958f: 33–46; Wood, S. L. 1986a: 52.

***abbreviatus* Schedl** 1951m: 94. Syntypes, sex?; Brasilien, Santa Catarina, Nova Teutonia; Schedl Collection in NHMW, Wien, and Plaumann Collection.
Distribution: South America (Brazil).

Notes: (1) Schedl 1979c: 8 (citation of holotype invalid).
References: (**tx**) de Ruette 1970: 112; Schedl 1951m: 90, 94, 1979c: 8.

***acuteclavatus* (Hagedorn)** 1909a: 742 (*Chramesus*). Holotype, sex?; La Plata, Argentina; Hamburg Museum, lost.
Distribution: South America (Argentina/ Bolivia/ Brazil).
Notes: (1) Blackman 1939: 87 (to *Pseudochramesus*), (3) Blackman 1939: 87 (redescribed).
References: (**ds**) Blackwelder 1947; Bruch 1914a; Hagedorn 1910d: 19; Kleine 1914b: 333; Nunberg 1962: 223; Schedl 1972g: 42. (**tx**) Blackman 1938b: 534, 1939: 87; Hagedorn 1909a: 742, 1910a: 67; Nunberg 1962: 223; Schedl 1938i: 23.

***brasiliensis* Schedl** 1948f: 265. Syntypes ♀; Brasil, Nova Teutonia; Schedl Collection in NHMW, Wien, and Plaumann Collection.
Distribution: South America (Brazil).
Notes: (1) Schedl 1979c: 45 (citation of holotype invalid).
References: (**ds**) Schedl 1966f: 82. (**tx**) Schedl 1948f: 265, 1979c: 45.

***costulatus* Blackman** 1939: 91. Holotype ♂; Boyuibe to Charagua, Bolivia; USNM, Washington.
Distribution: South America (Argentina/ Bolivia).
References: (**ds**) Blackwelder 1947. (**tx**) Blackman 1939: 91.

***duplosquamosus* Schedl** 1963d: 215. Holotype ♀; Brasilien: Matto Grosso, Rio Caraguata; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1963d: 215.

***harringtoni* Blackman** 1939: 93. Holotype ♂; Aguio, Bolivia; USNM, Washington.
Distribution: South America (Argentina/ Bolivia).
References: (**ds**) Blackwelder 1947; Nunberg 1962: 223. (**tx**) Blackman 1939: 93; Nunberg 1962: 223.
multiseriatus Schedl 1978c: 296. Holotype ♀; Argentina, Tablillas Salta; Schedl Collection in NHMW, Wien. Synonymy: Wood 1988b: 189.
References: (**tx**) Schedl 1978c: 296; Wood, S. L. 1988b: 189.

***jaliscoensis* Wood** 1987: 549. Holotype ♂; Carretera Barra Navidad-Puerto Vallarta, Jalisco, Mexico; Wood Collection.
Figures: Atkinson 1989a: 64.
Distribution: North America (Jalisco in Mexico).
Hosts: *Cynometra oaxacana*.
References: (**tx**) Atkinson 1989a: 64; Wood, S. L. 1987: 549.

***manni* Blackman** 1939: 88. Holotype ♀; Beni River, below Riberalta, Bolivia; USNM, Washington.
Distribution: South America (Bolivia).
References: (**ds**) Blackwelder 1947. (**tx**) Blackman 1939: 88; Schedl 1948f: 265.

***opacus* Schedl** 1963d: 216. Syntypes ♂; Brasilien: Matto Grosso, Rio Caraguata; Schedl Collection in NHMW, Wien, and Plaumann Collection.
Distribution: South America (Brazil).
Notes: (3) Schedl 1979c: 179 (citation of holotype invalid).
References: (**hb**) Beaver 1973b. (**ds**) Beaver 1973b; Schedl 1973d: 153. (**tx**) Schedl 1963d: 216, 1979c: 179.

***semibrunneus* (Eggers)** 1951: 145 (*Chramesus*). Holotype ♀; Brasil; USNM, Washington.
Distribution: South America (Brazil).
Hosts: *Piptadenia* sp.
Notes: (1) Wood 1986c: 269 (to *Pseudochramesus*).
References: (**tx**) Anderson, W. H. & Anderson 1971: 29; Eggers 1951: 145; Schedl 1979c: 223; Wood, S. L. 1986c: 269.

***setifer* Schedl** 1951m: 93. Holotype ♀; Brasilien, Bahia, Cachoerinha-Una; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**ds**) Schedl 1966f: 82. (**tx**) Schedl 1951m: 93.

***vianai* Schedl** 1958f: 39. Syntypes ♂ ♀; Argentinien: Buenos Aires: Tigre; Schedl Collection in NHMW, Wien, and Viana Collection.
Distribution: South America (Argentina).
Notes: (3) Schedl 1979c: 267 (citation of holotype invalid).
References: (**hb**) Viana 1964: 128. (**ds**) Schedl 1979e: 57; Viana 1964: 128. (**tx**) Schedl 1958f: 39, 1979c: 267.

Genus *Chramesus* LeConte

CHRAMESUS LECONTE 1868: 168. Type-species: *Chramesus hicoriae* LeConte, monobasic.
Rhopalopleurus Chapuis 1869: 46. Type-species: *Rhopalopleurus tuberculatus* Chapuis, subsequent designation by Hopkins 1914: 128. Synonymy: LeConte 1876: 374.
References: (**tx**) Blackman 1938b: 535; Chapuis 1869: 46, 1873: 254; Hopkins 1914: 128; LeConte 1876: 374; Lucas 1920: 572; Swaine 1909: 88, 1918a: 58.
Thaumasinulus Reitter 1913a: 39. Type-species: *Dendrosinus bonnairei* Reitter = *Rhopalopleurus rotundatus* Chapuis, monobasic. Synonymy: Eggers 1940h: 61.
References: (**tx**) Eggers 1940h: 61; Lucas 1920: 636; Reitter 1913a: 39.
Prochramesus Wood 1956c: 254. Type-species: *Prochramesus annectans* Wood, original designation. Synonymy: Schedl 1963h: 258.
References: (**tx**) Schedl 1963h: 258; Wood, S. L. 1956c: 254.
Keys: Blackman 1938b: 536, Wood 1982b: 316.
References: (**hb**) Wood, S. L. 1986a: 52. (**ds**) Wood, S. L. 1986a: 52. (**tx**) Beal & Massey 1945:

58, 75; Blackman 1922: 48, 50, 1938b: 534–545, 1939: 86–88; Blandford 1897a: 142, 169; Blatchley & Leng 1916: 659–660; Bruck 1936a: 41, 123–125; Chamberlin 1939: 115, 135–139; Dodge 1938: 17; Eggers 1940a: 123–141; Hagedorn 1910a: 66, 1910d: 19; LeConte 1868: 168, 1876: 374; LeConte & Horn 1883: 522; Leng 1920: 338; Lucas 1920: 183; Rohwer 1919: 4–8; Schedl 1958f: 33–46, 1959m: 545–557, 1963h: 262; Swaine 1909: 88, 1918a: 40, 58; Wood, S. L. 1956c: 253, 1967b: 79–96, 1986a: 52.

***aberrans* Schedl** 1951m: 90. Syntypes ♂; Brasilien, Santa Catarina, Nova Teutonia; Schedl Collection in NHMW, Wien, and Plaumann Collection.
Distribution: South America (Brazil).
Notes: (1) Schedl 1979c: 8 (citation of holotype invalid).
References: (**tx**) Nunberg 1962: 226; Schedl 1951m: 90, 1979c: 8.

***acacicolens* Wood** 1969b: 3. Holotype ♂; Finca La Pacifica, 4 km NW Canas, Guanacaste Prov., Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: *Acacia* sp.
References: (**hb**) Wood, S. L. 1982b: 346. (**ds**) Wood, S. L. 1982b: 346. (**tx**) Wood, S. L. 1969b: 3, 1982b: 346.

***advena* Schedl** 1951m: 91. Syntypes ♀; Brasilien, Bahia, Cachoeirinha-Una; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
Notes: (3) Schedl 1979c: 12 (citation of holotype invalid).
References: (**ds**) Schedl 1972g: 42, 1976a: 51. (**tx**) Schedl 1951m: 91, 1979c: 12.

***annectens* (Wood)** 1956c: 254 (*Prochramesus*). Holotype ♀; Nochixtlan, Oaxaca, Mexico; SMUK, Lawrence.
Distribution: North America (Hidalgo, Morelos, Oaxaca, Puebla in Mexico).
Hosts: *Agave* sp., *Hechtia podantha, Nolena* sp.
Notes: (1) A typographical error in the original description qualifies as a lapsus calami; consequently, the spelling is corrected here from *annectans* to *annectens*. Schedl 1963h: 262 (to *Chramesus*).
References: (**hb**) Atkinson & Equihua 1985b: 231; Atkinson et al. 1986: 22; Burgos & Saucedo 1983: 67; Wood, S. L. 1982b: 327. (**ds**) Atkinson & Equihua 1985a: 79, 1985b: 231; Atkinson et al. 1986: 22; Burgos & Saucedo 1983: 67; Wood, S. L. 1982b: 327. (**tx**) Muskus, A. 1984: 60; de Ruette 1970: 112; Schedl 1963h: 262; Wood, S. L. 1956c: 254, 1969b: 2; 1982b: 327.

***aquilus* Wood** 1974a: 10. Holotype ♂; 13 km N Ocosingo, Chiapas, Mexico; CNCI, Ottawa.
Distribution: North America (Chiapas, Morelos in Mexico).
References: (**hb**) Atkinson et al. 1986: 22, 50; Burgos & Saucedo 1983: 68. (**ds**) Atkinson et al. 1986: 22, 50; Burgos & Saucedo 1983: 68; Wood, S. L. 1982b: 333. (**tx**) McNamara 1984: 752; Wood, S. L. 1974a: 10, 1982b: 33.

***argentinensis* Schedl** 1952a: 456. Syntypes 2 ♀; Argentina, Buenos Aires, Isla Martin Garcia; Schedl Collection in NHMW, Wien, and Viana Collection.
Distribution: South America (Argentina).
Notes: (3) Schedl 1979c: 24 (citation of holotype invalid).
References: (**hb**) Viana 1964: 127. (**ds**) Viana 1964: 127. (**tx**) Schedl 1952a: 456, 1979c: 24.

***asperatus* Schaeffer** 1908: 220. Lectotype ♀; Chiricahua Mts., Arizona [USA]; USNM, Washington, designated by Blackman 1938b: 539.
Distribution: North America (Arizona, New Mexico in USA).
Hosts: *Robinia neomexicana*.
Notes: (3) Blackman 1938b: 538 (redescribed).
References: (**ec**) Furniss, R. L. & Carolin 1977: 346. (**hb**) Bright & Stark 1973: 52; Chamberlin 1939: 138; Furniss, R. L. & Carolin 1977: 346; Wood, S. L. 1982b: 337. (**ds**) Blackwelder 1939; Bright & Stark 1973: 52; Chamberlin 1939: 138; Furniss R. L. & Carolin 1977: 346; Leng 1920: 338; Wickham 1896b: 170; Wood, S. L. 1982b: 337. (**tx**) Blackman 1938b: 536–539, 1943c: 391; Bruck 1936a: 123, 125; Chamberlin 1939: 138; Hagedorn 1910a: 67; Schaeffer 1908: 220; Wood, S. L. 1956c: 256, 1960b: 61, 1972c: 143, 1982b: 337.

gibber Blackman 1938b: 541. Holotype ♀; Cloudcroft, New Mexico [USA]; USNM, Washington. Synonymy: Wood 1972c: 143.
References: (**hb**) Chamberlin 1939: 139. (**ds**) Blackwelder 1939; Chamberlin 1939: 139. (**tx**) Blackman 1938b: 541; Chamberlin 1939: 139; Wood, S. L. 1972c: 143.

***aspericollis* Schedl** 1938i: 23. Syntypes ♂♀; Argentinien, Buenos Aires, Isla Martin Garcia; Schedl Collection in NHMW, Wien and Viana Collection.
Figures: Schedl 1938i: 23.
Distribution: South America (Argentina/ Santa Catarina in Brazil).
Notes: (3) Schedl 1979c: 28 (citation of holotype invalid).
References: (**ay**) Thomas, J. B. 1967. (**hb**) Bruch 1940: 19–28; Viana 1964: 127. (**ds**) Blackwelder 1947; Schedl 1967d: 2, 1973d: 153; Viana 1964: 127. (**tx**) Bruch 1940: 19–28; Schedl 1938i: 23, 1951h: 284, 1951m: 73, 92, 1958f: 34, 1979c: 28; Thomas, J. B. 1967.

***asperulus* Schedl** 1978c: 294. Holotype ♀; Brasilien, Encruzilhada, 980 m, Bahia; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).

References: (**ds**) Schedl 1976a: 51. (**tx**) Schedl 1978c: 294.

***atkinsoni* Wood** 1981: 123. Holotype ♂; Cerro Chipinque, Monterrey, Nuevo Leon, Mexico; Wood Collection.
Distribution: North America (Nuevo Leon in Mexico).
Hosts: *Carya* sp., *Persea* sp.
References: (**hb**) Atkinson & Equihua 1985b: 231. (**ds**) Atkinson & Equihua 1985b: 231; Wood, S. L. 1982b: 335. (**tx**) Wood, S. L. 1981: 123, 1982b: 335.

***badius* Schedl** 1951m: 88. Holotype ♂; Brasilien, Santa Catarina, Nova Teutonia; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1951m: 88, 1979c: 32.

***bicolor* Wood** 1967b: 91. Holotype ♂; La Lima, Cortez, Honduras; Wood Collection.
Distribution: North America (Honduras).
Hosts: *Cestrum scandens*.
References: (**hb**) Wood, S. L. 1982b: 345. (**ds**) Wood, S. L. 1982b: 345. (**tx**) Wood, S. L. 1967b: 91–92, 1982b: 345.

***bispinus* Wood** 1982a: 225. Holotype ♂; Tenerife, Valle, Colombia; Wood Collection.
Distribution: South America (Colombia).
Hosts: *Passiflora mollisima*.
References: (**tx**) Wood, S. L. 1982a: 225.

***bolivianus* Schedl** 1973a: 370. Holotype ♀?; Bolivien, Valle of Rio Abaho (La Paz), 3,200 m; NHMB, Budapest.
Distribution: South America (Bolivia).
References: (**tx**) Schedl 1973a: 370.

***brasiliensis* Nunberg** 1962: 224. Holotype ♂; Serra do Urucum, Corumba, Estado de Mato Grosso, Brasilien; DZSA, Sao Paulo.
Figures: Nunberg 1962: 225.
Distribution: South America (Brazil).
Notes: (3) In his collection, Schedl treated this as a synonym of *corumbensis* [not examined by us].
References: (**tx**) Nunberg 1962: 224–225.

***cecropiae* Wood** 1969b: 5. Holotype ♂; 4 km SW Rincon de Osa, Puntarenas, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: *Cecropia* leaf petiole.
References: (**ds**) Wood, S. L. 1982b: 330. (**tx**) Wood, S. L. 1969b: 5, 1982b: 330.

***chapuisi* LeConte** 1876: 375. Holotype ♀; Louisiana [USA]; MCZ, Cambridge.
Distribution: North America (San Luis Potosi, Veracruz in Mexico/ Florida, E Kansas, Louisiana, Maryland, Mississippi, Pennsylvania, Texas in USA).
Hosts: *Celtis occidentalis*, *C.* sp., *Rhamnus capraefolia*, possibly *Robinia* sp.
Notes: (3) Blackman 1938b: 542 (redescribed).
References: (**cn**) Blackman 1950; Doane et al. 1936. (**hb**) Baker, W. L. 1972: 239; Blackman 1922b: 51–52, 1950; Chamberlin 1939: 137; Deyrup & Atkinson 1987a: 64; Doane et al. 1936; Wood, S. L. 1982b: 341. (**ds**) Atkinson 1989b: 327; Blackman 1922b: 51–52, 1950; Blackwelder 1939; Blatchley & Leng 1916: 660; Chamberlin 1939: 137; Deyrup 1981b: 4; Deyrup & Atkinson 1987a: 64; Drooz 1985: 352; Hagedorn 1910d: 19; Henshaw 1882: 269, 1885: 149; Kirk 1970; Kleine 1912b: 175, 1914b: 385, 1934a: 132; Knull 1934: 211; Leng 1920: 338; Schwarz 1886: 54; Swaine 1909: 88; Wickham 1896b: 170; Wood, S. L. 1982b: 341. (**tx**) Atkinson 1989b: 327; Blackman 1922b: 51–52,1938b: 542–543; Blatchley & Leng 1916: 660; Chamberlin 1939: 137; Hagedorn 1910a: 67; LeConte 1876: 375; Schwarz 1886: 54; Swaine 1909: 88; Wood, S. L. 1956c: 258, 1982b: 341.

***corniger* Wood** 1974a: 8. Holotype ♂; Lago Catemaco, Veracruz, Mexico; CNCI, Ottawa.
Distribution: North America (Veracruz in Mexico).
References: (**ds**) Wood, S. L. 1982b: 329. (**tx**) McNamara 1984: 752; Wood, S. L. 1974a: 8, 1982b: 329

***corumbensis* Eggers** 1951: 145. Holotype ♀; Brasil (Corumba, im Staate Matto Grosso); Eggers Collection, in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Eggers 1951: 145; Nunberg 1962: 226; Schedl 1952a: 456, 1979c: 66.

***crenatus* Wood** 1956c: 257. Holotype ♂; Veracruz, Mexico; SMUK, Lawrence.
Distribution: North America (Campece, Oaxaca, Veracruz, Yucatan in Mexico).
Hosts: *Lonchocarpus castilloi*.
References: (**hb**) Wood, S. L. 1982b: 344. (**ds**) Atkinson & Equihua 1988: 88; Estrada & Atkinson 1988: 204; Wood, S. L. 1982b: 344. (**tx**) de Ruette 1970: 99; Schedl 1979c: 68; Wood, S. L. 1956c: 257, 1967b: 91, 1969b: 3, 1982b: 344.

***cylindricus* Schedl** 1952a: 455. Holotype ♂; Argentina, Misiones, Dep. Concep., Sta. Maria; Schedl Collection in NHMW, Wien.
Distribution: South America (Argentina).
Notes: (3) Schedl 1976a: 65 (described female).
References: (**tx**) Schedl 1952a: 454–455, 1976a: 65, 1979c: 73.

***demissus* Wood** 1967b: 93. Holotype ♂; Volcan Pacaya, Esquintla, Guatemala; Wood Collection.
Distribution: North America (Guatemala).
Hosts: Tree seedling.
References: (**hb**) Wood, S. L. 1982b: 330. (**ds**) Wood, S. L. 1982b: 330. (**tx**) Wood, S. L. 1967b: 93–94, 1982b: 330.

***dentatus* Schaeffer** 1908: 221. Lectotype ♀; Huachuca Mts., Arizona [USA]; USNM, Washington, designated by Blackman 1938b: 544.

Distribution: North America (Distrito Federal in Mexico/ Arizona, California in USA).
Hosts: *Quercus* sp.
References: (**hb**) Bright & Stark 1973: 53; Chamberlin 1939: 138; Wood, S. L. 1982b: 323. (**ds**) Atkinson & Equihua 1985a: 78; Blackwelder 1939; Bright & Stark 1973: 53; Chamberlin 1939: 138; Keen 1929a: 15; Kleine 1934a: 132; Wood, S. L. 1982b: 323. (**tx**) Blackman 1938b: 537, 543–544; Bruck 1936a: 123–125; Chamberlin 1939: 138; Eggers 1930a: 169; Hagedorn 1910a: 67; Keen 1929a: 15; Schaeffer 1908: 221; Wood, S. L. 1982b: 323.

barbatus Eggers 1930a: 169. Holotype ♂; Valle de Mexico; MNB, Berlin. Synonymy: Wood 1972e: 192.
References: (**ds**) Blackwelder 1947; Ferrer 1942. (**tx**) Eggers 1930a: 169; Schedl 1940a: 336; Wood, S. L. 1972e: 191–192.

***denticulatus* Wood** 1971: 6. Holotype ♂; 20 km SW El Vigia, Merida, Venezuela; Wood Collection.
Distribution: North America (Costa Rica), South America (Venezuela).
Hosts: Bignoniaceae liana.
References: (**ds**) Wood, S. L. 1982b: 322. (**tx**) Wood, S. L. 1971: 6, 1982b: 322.

***dentipes* Schedl** 1978c: 295. Holotype ♂; Brasilien, Nova Teutonia, 300–500 m, 27 degrees 11′ Lat., 52 degrees 23′ Long.; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1978c: 295.

***deplanatus* Eggers** 1940a: 124. Holotype ♀; Guadeloupe (Gourbeyre); lost in shipment from Eggers to Washington, lectotype in MNHN, Paris, designated by Anderson & Anderson 1971: 11.
Distribution: Antilles Islands (Guadeloupe).
Notes: (3) Schedl 1963h: 263 (treated as a synonym of *rotundatus* [not examined by us]).
References: (**tx**) Anderson, W. H. & Anderson 1971: 11; Eggers 1940a: 124; Schedl 1963h: 263.

***disparilis* Wood** 1974a: 9. Holotype ♂; Lagos de Colores, Chiapas, Mexico; CNCI, Ottawa.
Distribution: North America (Chiapas in Mexico).
Hosts: *Acacia* sp.
References: (**ds**) Wood, S. L. 1982b: 346. (**tx**) McNamara 1984: 752; Wood, S. L. 1974a: 9, 1982b: 346.

***editus* (Bright)** 1972b: 1495 (*Prochramesus*). Holotype ♀; 20.5 km N Oaxaca, Oaxaca, Mexico; CNCI, Ottawa.
Figures: Bright 1972b: 1490.
Distribution: North America (Durango, Morelos, Oaxaca in Mexico).
Hosts: *Lupinus* sp.
References: (**hb**) Atkinson & Equihua 1985a: 78; Atkinson et al. 1986: 22. (**ds**) Atkinson & Equihua 1985a: 78; Atkinson et al. 1986: 22; Wood, S. L. 1982b: 327. (**tx**) Bright 1972b: 1490, 1495; McNamara 1977: 198; Wood, S. L. 1982b: 327.

***erinaceus* Schedl** 1967d: 7. Holotype ♂; Brasilien, Nova Teutonia; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
Notes: (3) Schedl 1978c: 295 (described female).
References: (**tx**) Schedl 1967d: 7, 1978c: 295, 1979c: 91.

***eurypterus* Schedl** 1963d: 214. Holotype ♂; Brasilien, Santa Catarina, Nova Teutonia; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**ds**) Schedl 1973d: 153. (**tx**) Schedl 1963d: 214, 1973d: 168–169, 1979c: 93.

***exilis* Wood** 1983a: 653. Holotype ♂; El Tuito, Jalisco, Mexico; Wood Collection.
Distribution: North America (Jalisco in Mexico).
Hosts: *Smilax* sp.
References: (**hb**) Atkinson & Equihua 1985b: 231. (**ds**) Atkinson & Equihua 1985b: 231. (**tx**) Wood, S. L. 1983a: 653.

***exul* Wood** 1983a: 653. Holotype ♂; 9 km SE Totolapan, Oaxaca, Mexico; Wood Collection.
Distribution: North America (Jalisco, Oaxaca in Mexico).
Hosts: Leguminosae, *Croton pseudoniveus*, *C.* sp.
References: (**ec**) Equihua & Atkinson 1986: 625. (**hb**) Equihua & Atkinson 1986: 625. (**ds**) Equihua & Atkinson 1986: 625. (**tx**) Wood, S. L. 1983a: 653.

***globosus* Hagedorn** 1909a: 742. Holotype, sex?; Argentinien, La Plata; Hamburg Museum, lost.
Distribution: South America (Argentina).
References: (**hb**) Bruch 1940; Viana 1964: 127. (**ds**) Blackwelder 1947; Bruch 1914a; Hagedorn 1910d: 19; Kleine 1912b: 175, 1914b: 333; Schedl 1978c: 291, 1979e: 57; Viana 1964: 127. (**tx**) Bruch 1940; Hagedorn 1909a: 742, 1910a: 67; Schedl 1938i: 23, 1951h: 284, 1952a: 445, 1958f: 34, 1961i: 223.

***gracilis* Wood** 1969b: 2. Holotype ♂; University of Costa Rica Campus, San Jose, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica/ Panama).
Hosts: *Bambusa vulgaris*.
References: (**hb**) Wood, S. L. 1982b: 328. (**ds**) Wood, S. L. 1982b: 328. (**tx**) Wood, S. L. 1969b: 2, 1982b: 328.

***granulatus* (Eggers)** 1928c: 94 (*Pagiocerus*). Holotype, sex?; Ostbolivien; Eggers Collection, in NHMW, Wien.
Distribution: South America (Bolivia).
Notes: (1) Schedl 1963f: 60 (to *Chramesus*).
References: (**ds**) Blackwelder 1947. (**tx**) Eggers 1928c: 94; Schedl 1963f: 60.

***granulipennis* Schedl** 1959m: 547. Holotype ♂; Rondon [Santa Catarina, Brazil]; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1959m: 547, 1979c: 111.

***hicoriae* LeConte** 1868: 168. Holotype ♂; Pennsylvania [USA]; MCZ, Cambridge.
Figures: Bright 1976d: 196, 201, 208, Dillon & Dillon 1961: 801.
Distribution: North America (Ontario, Quebec in Canada/ Connecticut, Delaware, District of Columbia, Georgia, Illinois, Iowa, Kansas, Maryland, Massachusetts, Mississippi, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Vermont, Virginia, West Virginia, Wisconsin in USA).
Hosts: *Carya* spp.
Notes: (3) Blackman 1938b: 537 (redescribed).
References: (**ay**) Hopkins 1894g; Thomas, J. B. 1967; Thomas, J. B. & Krywienczyk 1966. (**bv**) Rolin & Kearby 1975b; Turnbow & Franklin 1980. (**cn**) Blackman 1950; Chamberlin 1924; Davis 1954: 18; Doane et al. 1936; Donaldson 1966; Felt 1906: 448, 1923: 90, 1926: 247, 274, 1930a: 247, 274; Felt & Rankin 1932: 255; Herrick 1935: 122, 374; Levison 1909: 364; Lindquist, O. H. & Syme 1981; Lugger 1899a: 316; Packard 1890: 296; Rhoads 1924: 143–150; Schwartz 1975b: 16, 1979: 208, 1980: 207, 1982: 212; Smith, J. B. 1893: 537, 1900: 364; Swaine 1918a: 58; Webster 1899: 68–73. (**ec**) Burks 1979: 791; Bushing 1965: 458; Chittenden 1901; Felt 1906: 448; Pierce 1908: 385; Swaine 1925c: 263; Thompson, W. R. 1943: 31. (**hb**) Baker, W. L. 1972: 239; Beal & Massey 1945: 75–76; Blackman 1950; Bright 1976d: 94; Chamberlin 1939: 136; Deyrup & Atkinson 1987a: 64; Dillon & Dillon 1961: 807; Doane et al. 1936; Felt 1906: 448, 1926: 247, 274, 1930a: 247, 274; Felt & Rankin 1932: 255; Herrick 1935: 122, 274; Hopkins 1894g; Lugger 1899a: 316; Morstatt 1924: 28; Packard 1890: 296; Pierce 1907: 293; Riley 1892b: 268; Simeone 1964: 707–708; Smith, J. B. 1890b: 53; Swaine 1907: 194, 1918a: 58; Wood, S. L. 1982b: 335. (**ds**) Anonymous 1926c: 515; Beal & Massey 1945: 75–76; Beaulne 1941, 1956; Blackman 1922b: 50–51, 1924, 1950; Blackwelder 1939, 1947; Blandford 1897a; Blatchley & Leng 1916: 660; Bright 1976d: 94; Britton 1920a; Chamberlin 1939: 136; Chittenden 1898: 78; Cockerell et al. 1907; Deyrup 1981b: 4; Deyrup & Atkinson 1987a: 64; Dodge 1938; Drooz 1985: 352; Felt 1923: 90, 1926: 247, 274, 1930a: 247, 274; Felt & Rankin 1932: 255; Hagedorn 1910d: 19; Hamilton 1891: 65, 1892: 268, 1895a: 378; Harrington 1884a; Henshaw 1882: 269, 1885: 149; Hopkins 1893a: 140, 1893b: 212; Hubbard & Schwarz 1878a: 666; Kirk 1970; Kleine 1912b: 175, 1914b: 394, 1934a: 132; Leng 1920: 338; Leonard 1928: 515; Lindquist, O. H. & Syme 1981; Schwarz 1886: 54; Smith, J. B. 1890b: 53, 1900: 364, 1910: 403; Swaine 1909: 88; Turnbow & Franklin 1980; Ulke 1902: 56; Wood, S. L. 1982b: 335. (**tx**) Beal & Massey 1945: 75–76; Blackman 1938b: 535–538, 1943c: 391; Blandford 1897a: 170; Blatchley & Leng 1916: 660; Bright 1976d: 94, 196, 201, 208; Bruck 1936: 124; Chamberlin 1939: 136; Dillon & Dillon 1961: 801, 807; Dodge 1938: 15–24; Eggers 1951: 145; Gemminger & Harold 1872: 2677; Hagedorn 1910a: 67; Hamilton 1892; Hopkins 1894: 280, 1914: 118; Jacques 1951: 349; LeConte 1868: 168, 1876: 375; Lindquist, O. H. & Syme 1981; Lucas 1920: 183; Schaeffer 1908: 220; Schedl 1938i: 23; Schwarz 1886: 54; Swaine 1909: 88, 1918a: 58; Thomas, J. B. 1967; Thomas, J. B. & Krywienczyk 1966; Wood, S. L. 1982b: 335. (**ms**) Lucas 1920: 183; Swaine 1907: 194, 1925c: 263.

lecontei Chapuis 1869: 46 (*Rhopalopleurus*). Lectotype ♂; Amerique Boreale; IRSNB, Brussels, designated by Wood 1982b: 335. Synonymy: LeConte 1876: 375.
References: (**hb**) Chamberlin 1939: 137. (**ds**) Chamberlin 1939: 137; Leng 1920: 338; Swaine 1909: 88. (**tx**) Blackman 1938b: 537; Chapuis 1869: 46–47, 1873: 255; Chamberlin 1939: 137; Gemminger & Harold 1872: 2676; LeConte 1876: 375; Swaine 1909: 88, 1918a: 58; Wood, S. L. 1982b: 335.

***hylurgoides* Schedl** 1963d: 214. Syntypes ♀; Brasilien: Santa Catarina, Nova Teutonia; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
Notes: (3) Schedl 1979c: 120 (citation of holotype invalid).
References: (**tx**) Schedl 1963d: 214, 1979c: 120.

***impolitus* Wood** 1971: 6. Holotype ♂; Campamento Rio Grande, 30 km E Palmar, Bolivar, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: Rosa de Montana (prob. *Brownia* sp.).
References: (**tx**) Wood, S. L. 1971: 6.

***imporcatus* Wood** 1971: 5. Holotype ♂; 7 km NW Socopo, Barinas, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: Palito de Cruz.
References: (**tx**) Wood, S. L. 1971: 5–6.

***incomptus* Wood** 1967b: 90. Holotype ♂; Morelia, Michoacan, Mexico; Wood Collection.
Distribution: North America (Michoacan in Mexico).
Hosts: *Clematis* sp.
References: (**hb**) Wood, S. L. 1982b: 322. (**ds**) Wood, S. L. 1982b: 322. (**tx**) Wood, S. L. 1967b: 90, 1982b: 322.

***ingens* Wood** 1969b: 3. Holotype ♂; Tapanti, Cartago Prov., Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: Liana.

References: (**hb**) Wood, S. L. 1982b: 328. (**ds**) Wood, S. L. 1982b: 328. (**tx**) McNamara 1977: 194; Wood, S. L. 1969b: 3, 1982b: 328.

***macrocornis* Wood** 1971: 3. Holotype ♂; Merida, Merida, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Bambusia vulgaris*.
References: (**tx**) Wood, S. L. 1971: 3.

***marginatus* Wood** 1974a: 11. Holotype ♂; Mexico; USNM, Washington.
Distribution: North America (Guerrero, Morelos in Mexico).
Hosts: *Crotolaria* sp., *Dalea lasiostachys, Desmodium cogantii*.
References: (**hb**) Atkinson et al. 1986: 22; Burgos & Saucedo 1983: 69. (**ds**) Atkinson & Equihua 1988: 88; Atkinson et al. 1986: 22, 50; Burgos & Saucedo 1983: 69; Wood, S. L. 1982b: 337. (**tx**) Wood, S. L. 1974a: 11, 1982b: 337.

***microporosus* Wood** 1974a: 10. Holotype ♂; El Sumidero, 24 km N Tuxtla Gutierrez, Chiapas, Mexico; CNCI, Ottawa.
Distribution: North America (Chiapas in Mexico).
References: (**ds**) Wood, S. L. 1982b: 343. (**tx**) McNamara 1984: 752; Wood, S. L. 1974a: 10, 1982b: 343.

***mimosae* Blackman** 1938b: 544. Holotype ♀; Brownsville, Texas [USA]; USNM, Washington.
Distribution: North America (Nuevo Leon, Tamaulipas in Mexico/ Texas in USA).
Hosts: *Cassia lindheimeriana, Leucaena pulverulenta, Mimosa* sp.
References: (**hb**) Chamberlin 1939: 139; Wood, S. L. 1982b: 326. (**ds**) Blackwelder 1939, 1947; Chamberlin 1939: 139; Ferrer 1942; Wood, S. L. 1982b: 326. (**tx**) Blackman 1938b: 544; Chamberlin 1939: 139; McNamara 1984: 753; Schedl 1940a: 337; Wood, S. L. 1982b: 326.

***minor* Eggers** 1951: 144. Lectotype ♂; Brasil (Corumba, im Staate Mato Grosso); USNM, Washington, designated by Anderson & Anderson 1971: 20.
Distribution: South America (Brazil).
References: (**tx**) Anderson, W. H. & Anderson 1971: 20; Eggers 1951: 144; Schedl 1951m: 88, 1962r: 97, 1979c: 154.

***minulus* Wood** 1969c: 126. Holotype ♀; La Ceiba, Honduras; Wood Collection.
Distribution: North America (Honduras/ Oaxaca in Mexico).
Hosts: Leguminosae.
References: (**ds**) Atkinson & Equihua 1986a: 420; Wood, S. L. 1982b: 345. (**tx**) Wood, S. L. 1969c: 126, 1982b: 345.

***neglectus* Schedl** 1978c: 296. Holotype, ♀; Brasilien, Nova Teutonia, Santa Catarina; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1978c: 296.

***opacicollis* Eggers** 1940a: 124. Holotype, sex?; Guadeloupe (Environ de Trois-Rivieres); MNHN, Paris.
Distribution: Antilles Islands (Guadeloupe).
References: (**ds**) Bright 1981c: 153, 1985c: 171. (**tx**) Bright 1972d: 35, 74, 1985c: 171, 177; Eggers 1940a: 124; Schedl 1979c: 178.

opacicollis nitidus Eggers 1940a: 125. Holotype, sex?; Insel Martinique (St. Pierre); Fleutiaux Collection, not located.
References: (**tx**) Eggers 1940a: 124–125; Schedl 1979c: 179.

brevisetosus Bright 1972d: 40. Holotype, ♂; Whitefield Hall, St. Thomas Parish, Jamaica; CNCI, Ottawa. Synonymy: Bright 1985c: 177.
References: (**ds**) Bright 1972d: 40, 1985c: 177; McNamara 1977: 194.

***orinocensis* Wood** 1971d: 4. Holotype ♂; Campamento Rio Grande, 30 km E Palmar, Bolivar, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: apparently *Celtis iguanae*.
References: (**hb**) Wood, S. L. 1971d: 4. (**tx**) Wood, S. L. 1971d: 4.

***ovalis* Schedl** 1952a: 454. Holotype ♀; not given with description, added by Schedl (1979c: 181) as: Loreto Missiones, Rep. Argentina; Schedl Collection in NHMW, Wien.
Distribution: South America (Argentina).
References: (**tx**) Schedl 1952a: 454, 1979c: 181.

***parcus* Wood** 1971: 6. Holotype ♂; Rancho Grande, Aragua, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Tabebuia* sp.
References: (**hb**) Beaver 1973b; Wood, S. L. 1971: 6. (**ds**) Beaver 1973b. (**tx**) Wood, S. L. 1971: 6.

***peniculus* Wood** 1971: 8. Holotype ♂; 30 km N Canon Zancudo, Zulia, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: Liana.
References: (**tx**) Wood, S. L. 1971: 8.

***periosus* Wood** 1969b: 5. Holotype ♂; 5 km W Jaltipan, Veracruz, Mexico; Wood Collection.
Distribution: North America (Veracruz in Mexico).
Hosts: probably *Lonchocarpus* sp.
References: (**hb**) Wood, S. L. 1982b: 342. (**tx**) Wood, S. L. 1969b: 5, 1982b: 342.

***peruanus* Schedl** 1961i: 223. Holotype ♂; Peru, Urubamba, Ollantaitembo, Dept. Cruzea; Schedl Collection in NHMW, Wien.
Distribution: South America (Peru).
References: (**ds**) Schedl 1960a: 77. (**tx**) Schedl 1960a: 77, 1961i: 223, 1979c: 191.

***phloeosinites* Schedl** 1951m: 89. Syntypes ♀; Brasilien, Santa Catarina, Nova Teutonia; Schedl Collection in NHMW, Wien.

Distribution: South America (Brazil).
Notes: (3) Schedl 1979c: 193 (citation of holotype invalid).
References: (**tx**) Schedl 1951m: 89, 1979c: 192.

***phloeotriboides* Schedl** 1958f: 41. Holotype, sex?; Argentinien: Gran Chaco; Schedl Collection in NHMW, Wien.
Distribution: South America (Argentina).
References: (**tx**) Schedl 1958f: 41, 1979c: 193.

***priscus* Wood** 1971: 7. Holotype ♂; La Carbonera Experimental Forest, 50 km NW Merida, Merida, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Phoradendron* sp.
References: (**tx**) Wood, S. L. 1971: 7.

***pumilus* (Chapuis)** 1869: 47 (*Rhopalopleurus*). Holotype ♂; Teapa, Tabasco, Mexico; IRSNB, Brussels.
Figures: Atkinson et al. 1986: 24, 51.
Distribution: North America (Costa Rica/ Guatemala/ Honduras/ Chiapas, Jalisco, Michoacan, Morelos, Nayarit, Tabasco in Mexico/ Panama).
Hosts: *Canavalia marivendbergi, C. villosa, Phaseolus* sp.
Notes: (1) Schwarz 1886: 54 (to *Chramesus*).
References: (**ec**) Wichmann 1955a: 107. (**hb**) Atkinson et al. 1986: 23, 50; Burgos & Saucedo 1983: 68; Wood, S. L. 1982b: 332. (**ds**) Atkinson & Equihua 1988: 88; Atkinson et al. 1986: 23, 50; Blackwelder 1947; Blandford 1897a: 170; Burgos & Saucedo 1983: 68; Ferrer 1942; Hagedorn 1910d: 19; Henshaw 1885: 149; Kleine 1912b: 175, 1914b: 348; Schwarz 1886: 54; Wichmann 1955a: 107; Wood, S. L. 1982b: 332. (**tx**) Atkinson et al. 1986: 24, 51; Blandford 1897a: 170; Burgos & Saucedo 1983: 68; Chapuis 1869: 47, 1873: 255; Gemminger & Harold 1872: 2676; Hagedorn 1910a: 67; Schedl 1940a: 337; Schwarz 1886: 54; Wood, S. L. 1972c: 143, 1982b: 332.

tumidulus Blandford 1897a: 170. Lectotype ♀; Las Mercedes, Guatemala; BMNH, London, designated by Wood 1972c: 143. Synonymy: Wood 1972c: 143.
References: (**cn**) Downes & Williams 1950. (**ds**) Blackwelder 1947; Hagedorn 1910d: 19; Kleine 1912b: 175, 1914b: 358. (**tx**) Blandford 1897a: 170; Hagedorn 1910a: 67; Schaeffer 1908: 221; Wood, S. L. 1967b: 93, 1972c: 143.

panamensis Blackman 1943c: 391. Holotype ♀; Canal Zone, Panama; USNM, Washington. Synonymy: Wood 1972c: 143.
References:(**ds**) Blackwelder 1947. (**tx**) Blackman 1943c: 391; Wood, S. L. 1972c: 143.

mexicanus Schedl 1948f: 264. Holotype ♀; Comitan, Chiapas; Schedl Collection in NHMW, Wien. Synonymy: Wood 1972c: 143.
References: (**tx**) Schedl 1948f: 264, 1979c: 152; Wood, S. L. 1972c: 143.

***punctatus* Wood** 1967b: 94. Holotype ♂; Volcan Pacaya, Esquintla, Guatemala; Wood Collection.
Distribution: North America (Guatemala).
Hosts: Liana, possibly *Canavalia* sp.
References: (**hb**) Wood, S. L. 1982b: 339. (**ds**) Wood, S. L. 1982b: 339. (**tx**) Wood, S. L. 1967b: 94, 1982b: 339.

***quadridens* Wood** 1956c: 256. Holotype ♂; Atlixco, Puebla, Mexico; SMUK, Lawrence.
Distribution: North America (Puebla in Mexico).
Hosts: Leguminosae liana.
References: (**hb**) Wood, S. L. 1982b: 331. (**ds**) Wood, S. L. 1982b: 331. (**tx**) de Ruette 1970: 99; Wood, S. L. 1956c: 256, 1982b: 331.

***robustus* Schedl** 1948f: 264. Holotype ♂; Cuba; Schedl Collection in NHMW, Wien.
Distribution: Antilles Islands (Cuba).
References: (**ds**) Bright 1985c: 171. (**tx**) Bright 1985c: 171; Schedl 1948f: 264, 1979c: 212.

***rotundatus* (Chapuis)** 1869: 47 (*Rhopalopleurus*). Syntypes 3 ♂; Guadeloupe; IRSNB, Brussels.
Distribution: Antilles Islands (Guadeloupe), North America (Veracruz in Mexico).
Hosts: *Inga vera*.
Notes: (3) Schedl 1963h: 263 treated *deplanatus* as a synonym of *rotundatus* [not examined by us].
References: (**ec**) Wichmann 1955a: 96. (**ds**) Blackwelder 1947; Bright 1981c: 153, 1982b: 164, 1985c: 171; Ferrer 1942; Fleutiaux & Salle 1890: 457; Hagedorn 1910d: 19; Kleine 1912b: 175; Wichmann 1955a: 96. (**tx**) Bright 1985c: 171; Chapuis 1869: 47, 1873: 255; Eggers 1940a: 124, 1940h: 61; Gemminger & Harold 1872: 2677; Hagedorn 1910a: 67; Schedl 1940a: 337, 1963h: 263.

bonnairei Reitter 1894c: 45 (*Dendrosinus*). Syntypes, sex?; intercepted at Marseille, France; NHMB, Budapest. Synonymy: Eggers 1940h: 61.
References: (**ay**) Marcu 1933a: 34. (**ds**) Hagedorn 1910d: 18; Heyden, Reitter, & Weise 1906: 709; Kleine 1912b: 174. (**tx**) Eggers 1940h: 61; Hagedorn 1910a: 52; Reitter 1894c: 45, 1913a: 39; Schedl 1934f: 1634, 1979c: 43; Wichmann 1913a: 144.

***securus* Wood** 1983a: 653. Holotype ♂; Estacion de Biologia, Chemela, Jalisco, Mexico; Wood Collection.
Distribution: North America (Jalisco in Mexico).
Hosts: Leguminosae, *Lonchocarpus* sp.
References: (**ec**) Equihua & Atkinson 1986: 626. (**hb**) Equihua & Atkinson 1986: 626; (**ds**) Equihua & Atkinson 1986: 626. (**tx**) Wood, S. L. 1983a: 653.

***secus* Wood** 1969b: 4. Holotype ♂; Laguna Santa Maria, Nayarit, Mexico; Wood Collection.
Distribution: North America (Nayarit, Oaxaca in Mexico).
Hosts: Liana, and *Acacia* sp.
References: (**hb**) Wood, S. L. 1982b: 325. (**ds**)

Wood, S. L. 1982b: 325. (**tx**) Wood, S. L. 1969b: 4, 1982b: 325.

***setiger* Schedl** 1951m: 92. Syntypes ♂ ♀; Brasilien, Santa Catarina, Nova Teutonia; Schedl Collection in NHMW, Wien, and Plaumann Collection.
Distribution: South America (Brazil).
Notes: (3) Schedl 1979c: 226 (citation of holotype invalid).
References: (**ds**) Schedl 1972g: 42. (**tx**) Schedl 1951m: 91–92, 1979c: 226.

***setosus* Wood** 1960b: 61. Holotype ♂; Madera Canyon, Santa Cruz Co., Arizona [USA]; Wood Collection.
Distribution: North America (Chihuahua in Mexico/ Arizona in USA).
Hosts: *Rhamnus betulaefolia*, *Morus alba*.
References: (**ds**) Wood, S. L. 1982b: 337. (**tx**) Wood, S. L. 1960b: 61, 1982b: 337.

***signatipennis* Schedl** 1962r: 97. Holotype ♀; Hamburgfarm on Rio Reventazon, Limon, Costa Rica; Schedl Collection in NHMW, Wien.
Distribution: North America (Costa Rica).
References: (**hb**) Wood, S. L. 1982b: 333. (**ds**) Wood, S. L. 1982b: 333. (**tx**) Schedl 1962r: 97, 1979c: 228; Wood, S. L. 1982b: 333.

***simplicis* Wood** 1971: 3. Holotype ♂; La Carbonera Experimental Forest 50 km NW Merida, Merida, Venezuela.
Distribution: South America (Venezuela).
Hosts: Native bamboo.
References: (**tx**) Wood, S. L. 1971: 3.

***solicitatus* Wood** 1971: 8. Holotype ♂; Campamento Rio Grande, 30 km E Palmar, Bolivar, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: Liana.
References: (**tx**) Wood, S. L. 1971: 8.

***spinosus* Brethes** 1921: 167. Syntypes, sex?; La Plata, Argentina; not located.
Distribution: South America (Argentina/ Brazil).
Hosts: *Acacia cavenia*.
References: (**hb**) Viana 1964: 127. (**ds**) Schedl 1973d: 153; Viana 1964: 127. (**tx**) Brethes 1921: 167; Schedl 1952a: 446.

cristatus Schedl 1963d: 213. Syntypes ♀; Brasilien, Santa Catarina, Nova Teutonia, 300 bis 500 m; Schedl Collection in NHMW, Wien, and Plaumann Collection.
Notes: (3) Schedl 1979c: 70 (citation of holotype invalid). Schedl note in his collection treats this as a synonym of *spinosus* Brethes.
References: (**ds**) Escalera 1919. (**tx**) de Ruette 1970: 99; Schedl 1963d: 213, 1979c: 69.

***striatus* Eggers** 1943a: 344. Holotype ♀?; Bolivien (Cochabamba); USNM, Washington.
Distribution: South America (Bolivia).
References: (**tx**) Anderson, W. H. & Anderson 1971: 31; Eggers 1943a: 344; de Ruette 1970: 99.

***strigatus* Wood** 1960b: 62. Holotype ♂; Atlixco, Puebla, Mexico; Wood Collection, automatic.
Distribution: North America (Morelos, Puebla in Mexico).
Hosts: *Acacia* sp.
References: (**hb**) Atkinson et al. 1986: 23, 50; Wood, S. L. 1982b: 339. (**ds**) Atkinson et al. 1986: 23, 50; Wood, S. L. 1982b: 339. (**tx**) Wood, S. L. 1960b: 62, 1982b: 339.

striatus Wood 1956c: 256. Holotype ♂; Atlixco, Puebla, Mexico; Wood Collection, preoccupied by Eggers 1943a: 344.
References: (**tx**) Wood, S. L. 1956c: 256, 1960b: 62.

***strigilis* Wood** 1971: 4. Holotype ♂; La Carbonera Experimental Forest, 50 km NW Merida, Merida, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
References: (**tx**) Wood, S. L. 1971: 4–5.

***subopacus* Schaeffer** 1908: 221. Lectotype ♀; Huachuca Mts., Arizona [USA]; USNM, Washington, designated by Blackman 1938b: 541.
Distribution: North America (Honduras/ Colima, Jalisco, Oaxaca, Tamaulipas in Mexico/ Arizona, Louisiana, Texas in USA).
Hosts: *Celtis iguanaea*, *C.* sp., *Condalia obtusifolia*, *C.* sp.
References: (**ec**) Equihua & Atkinson 1986: 626. (**hb**) Chamberlin 1939: 138; Equihua & Atkinson 1986: 626; Wood, S. L. 1982b: 334. (**ds**) Atkinson & Equihua 1985b: 231; Chamberlin 1939: 138; Drooz 1985: 352; Equihua & Atkinson 1986: 626; Leng 1920: 338; Wood, S. L. 1982b: 334. (**tx**) Blackman 1938b: 536, 539–541; Bruck 1936a: 123–124; Chamberlin 1939: 138; Hagedorn 1910a: 67; Schaeffer 1908: 221; Schedl 1948f: 264; Wood, S. L. 1956c: 255, 1972c: 143, 1982b: 334.

canus Blackman 1938b: 541. Holotype ♀; Tallulah, Louisiana [USA]; USNM, Washington. Synonymy: Wood 1972c: 143.
References: (**hb**) Chamberlin 1939: 138. (**ds**) Blackwelder 1942; Chamberlin 1939: 138. (**tx**) Blackman 1938b: 541; Chamberlin 1939: 138; Wood, S. L. 1972c: 143.

***subtuberculatus* Eggers** 1951: 146. Holotype ♂; Colombia (Hochland von Bogota); Eggers Collection, in NHMW, Wien.
Distribution: South America (Colombia).
References: (**tx**) Eggers 1951: 146; Schedl 1951: 146, 1979c: 245.

***tibialis* Wood** 1983a: 654. Holotype ♂; Urpanapan, Veracruz, Mexico; Wood Collection.
Distribution: North America (Veracruz in Mexico).
Hosts: *Olmeca recta*.
References: (**hb**) Atkinson & Equihua 1986a: 420. (**ds**) Atkinson & Equihua 1986a: 420. (**tx**) Wood, S. L. 1983a: 654.

***tuberculatus* (Chapuis)** 1869: 47 (*Rhopalopleurus*). Syntypes 2 ♂; Nouvelle-Grenade; IRSNB, Brussels.
Distribution: South America (Colombia).
References: (**ds**) Blackwelder 1947; Hagedorn 1910d: 19; Kleine 1912b: 175, 1914b: 341. (**tx**) Chapuis 1869: 47, 1873: 255; Eggers 1951: 146; Gemminger & Harold 1872: 2677; Hagedorn 1910a: 67; Hopkins 1914: 128.

***unicornis* Wood** 1969b: 4. Holotype ♂; Laguna Santa Maria, Nayarit, Mexico; Wood Collection.
Distribution: North America (Colima, Jalisco, Nayarit in Mexico).
Hosts: *Mimosa ervendbergi*.
References: (**hb**) Wood, S. L. 1982b: 323. (**ds**) Atkinson & Equihua 1988: 88; Wood, S. L. 1982b: 323. (**tx**) McNamara 1977: 194; Wood, S. L. 1969b: 4, 1982b: 323.

***variabilis* Wood** 1974a: 9. Holotype ♂; Lago Catemaco, Veracruz, Mexico; CNCI, Ottawa.
Distribution: North America (Veracruz in Mexico).
References: (**ds**) Wood, S. L. 1982b: 343. (**tx**) McNamara 1984: 753; Wood, S. L. 1974a: 9, 1982b: 343.

***variegatus* Eggers** 1943a: 345. Holotype ♀?; Bolivia (Cochabamba); Eggers Collection, in NHMW, Wien.
Distribution: South America (Bolivia).
References: (**tx**) Eggers 1943a: 345; Schedl 1979c: 264.

***varius* Wood** 1969b: 4. Holotype ♂; 27 km N Ixmiquilpan, Hidalgo, Mexico; Wood Collection.
Distribution: North America (Hidalgo in Mexico).
Hosts: *Acacia* sp.
References: (**hb**) Wood, S. L. 1982b: 325. (**ds**) Wood, S. L. 1982b: 325. (**tx**) Wood, S. L. 1969b: 4, 1982b: 325.

***vastus* Wood** 1967b: 92. Holotype ♂; Cerro Punta, Chiriqui, Panama; Wood Collection.
Distribution: North America (Panama).
Hosts: *Inga* sp.
References: (**hb**) Wood, S. L. 1982b: 340. (**ds**) Wood, S. L. 1982b: 340. (**tx**) Wood, S. L. 1967b: 92, 1982b: 340.

***vinealis* Wood** 1971: 7. Holotype ♂; 30 km N Canon Zancudo, Zulia, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: Liana.
References: (**tx**) Wood, S. L. 1971: 7.

***vitiosus* Wood** 1969c: 125. Holotype ♂; Rosamorada, Nayarit, Mexico; Wood Collection.
Distribution: North America (Jalisco, Nayarit in Mexico).
Hosts: *Inga paterno*, *Lonchocarpus constrictus*, *L. guatemalensis*.
References: (**ec**) Equihua & Atkinson 1986: 626. (**hb**) Equihua & Atkinson 1986: 626; Wood, S. L. 1982b: 340. (**ds**) Equihua & Atkinson 1986: 626; Wood, S. L. 1982b: 340. (**tx**) Wood, S. L. 1969c: 125, 1982b: 340.

***wisteriae* Wood** 1974a: 11. Holotype ♂; Bay St. Louis, Mississippi [USA]; USNM, Washington.
Distribution: North America (Mississippi in USA).
Hosts: *Wisteria* sp.
Notes: (3) Atkinson 1989: 327 treated this as a synonym of *chapuisii*, apparently on the basis of female characters; males differ strikingly.
References: (**ds**) Drooz 1985: 352; Wood, S. L. 1982b: 341. (**tx**) Atkinson 1989: 327; Wood, S. L. 1974a: 11, 1982b: 341.

***xalapae* Atkinson** 1989: 58. Holotype ♂; Mexico: Veracruz, Xalapa; USNM, Washington.
Distribution: North America (Veracruz in Mexico).
References: (**tx**) Atkinson 1989: 58.

***xylophagus* Wood** 1956c: 255. Holotype ♂; Rosario, Sinaloa, Mexico; SMUK, Lawrence.
Distribution: North America (Nayarit, Sinaloa in Mexico).
Hosts: *Inga paterno*.
References: (**hb**) Wood, S. L. 1982b: 344. (**ds**) Wood, S. L. 1982b: 344. (**tx**) de Ruette 1970: 99; Wood, S. L. 1956c: 255, 1982b: 344.

Tribe Hypoborini Nusslin

Hypoborinae
References: Nusslin 1911: 376, 429.

Hypoborina
References: Balachowsky 1949a: 150.

Hypoborini
References: Wood, S. L. 1978a: 112, 1982b: 348–368, 1986: 53.

Genus *Zygophloeus* Schedl

ZYGOPHLOEUS SCHEDL 1958i: 215. Type-species: *Zygophloeus australis* Schedl, monobasic.
References: (**hb**) Wood, S. L. 1986a: 54. (**ds**) Wood, S. L. 1986a: 54. (**tx**) Schedl 1958i: 215; Wood, S. L. 1986a: 54.

***australis* Schedl** 1958i: 215. Holotype, sex?; New South Wales, Lisarow; CSIRO, Canberra.
Distribution: Australia (New South Wales).
Hosts: *Acacia decurrens*.
References: (**tx**) Schedl 1958i: 214–215.

Genus *Glochiphorus* Strohmeyer

GLOCHIPHORUS STROHMEYER 1910e: 126. Type-species: *Glochiphorus globosus* Strohmeyer, monobasic.
References: (**ds**) Schedl 1977b: 30. (**hb**) Wood, S. L. 1986a: 54. (**ds**) Wood, S. L. 1986a: 54. (**tx**) Hopkins 1914: 122, 133, 1915c: 226; Lucas 1920: 303; Schedl 1963h: 263, 1977b: 30; Strohmeyer 1910e: 126; Wood, S. L. 1986a: 54.

***alienus* Schedl** 1982: 283. Holotype, sex?; Transvaal; Transvaal Museum, Pretoria.
Distribution: Africa (South Africa).
References: (**tx**) Schedl 1982: 283.

***globosus* Strohmeyer** 1910e: 127. Syntypes ♂♀; Madagascar insula; Strohmeyer Collection.
Figures: Strohmeyer 1910e: 130 (mouthparts, antenna, leg).
Distribution: Madagascar.
References: (**ds**) Hagedorn 1913: 253; Kleine 1912b: 169, 1914b: 325; Schedl 1977b: 30. (**tx**) Hopkins 1914: 122, 133; Lucas 1920: 303; Schedl 1953d: 68, 1977b: 30, 1979c: 106; Strohmeyer 1910e: 127. (**ms**) Lucas 1920: 303.

Genus *Chaetophloeus* LeConte

CHAETOPHLOEUS LECONTE 1876: 382. Type-species: *Hylesinus hystrix* LeConte, monobasic.
Renocis Casey 1886: 257. Type-species: *Renocis heterodoxus* Casey, monobasic. Synonymy: Schedl 1963h: 263.
References: (**tx**) Blackman 1940b: 373–401; Bruck 1936a: 41, 119–120; Casey 1886: 257; Chamberlin 1939: 114, 124–125, 1958: 52, 58–60; Hagedorn 1910a: 63, 1910d: 13; Leng 1920: 338; Lucas 1920: 565; Nunberg 1955: 208; Schedl 1940a: 337, 1960h: 5, 1963h: 263; Swaine 1909: 144, 1918a: 39.
Pseudocryphalus Swaine 1917: 20. Type-species: *Pseudocryphalus brittaini* Swaine =*Renocis heterodoxus* Casey, original designation. Synonymy: Blackman 1940b: 374.
References: (**tx**) Blackman 1940b: 376; Bruck 1936a: 41, 121–123; Chamberlin 1939: 115, 133–134; Dodge 1938: 24; Eggers 1931c: 185; Leng 1920: 338; Swaine 1917: 20, 1918a: 40, 57–58.
Keys: Blackman 1940b: 376, Wood 1982b: 349.
References: (**hb**) Wood, S. L. 1986a: 54. (**ds**) Wood, S. L. 1982b: 349, 1986a: 54. (**tx**) Arnett 1960: 1042, 1968: 1042; Bright 1972d: 34; Bright & Stark 1973: 53; Bruck 1936a: 42; Chamberlin 1939: 182–183; Hagedorn 1910a: 66, 1910d: 19; LeConte 1876: 382; LeConte & Horn 1983: 523; Leng 1920: 238; Lucas 1920: 175; Schedl 1960g, 1960h, 1963h: 263, 1965e: 361; Wood, S. L. 1967b: 78–97, 1982b: 349, 1986a: 54.

***andinus* Wood** 1971: 9. Holotype ♂; 3 km E Lagunillas, Merida, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Mimosa* sp., and a liana.
References: (**tx**) Wood, S. L. 1971: 9.

***atlanticus* Bright** 1981c: 158. Holotype ♂?; Man-o-war Cay, nr. Abaco, Bahamas; CNCI, Ottawa.
Distribution: Antilles Islands (Bahama Islands).
References: (**ds**) Bright 1985c: 171. (**tx**) Bright 1981c: 158, 1985c: 171.

***braziliensis* (Blackman)** 1940b: 398 (*Renocis*). Holotype ♀; Ceara, Brazil; USNM, Washington.
Distribution: South America (Brazil).
References: (**ds**) Blackwelder 1947. (**tx**) Blackman 1940b: 398, 1943c: 390; Wood, S. L. 1969b: 8.

***chapini* (Blackman)** 1943c: 390 (*Renocis*). Holotype ♀; Ocho Rios, Jamaica; USNM, Washington.
Distribution: Antilles Islands (Jamaica).
References: (**ds**) Blackwelder 1947; Bright 1972d: 34, 1985c: 171. (**tx**) Blackman 1943c: 390–391; Bright 1972d: 34, 1985c: 171.

***confinis* Wood** 1983a: 652. Holotype ♂; Cuernavaca, Morelos, Mexico; Wood Collection.
Distribution: North America (Morelos in Mexico).
Hosts: *Phoradendron* sp.
References: (**hb**) Atkinson et al. 1986: 52. (**ds**) Atkinson et al. 1986: 52. (**tx**) Wood, S. L. 1983a: 652.

***coronatus* (Chapuis)** 1869: 39 (*Phloeosinus*). Holotype ♂; Yucatan, [Mexico]; IRSNB, Brussels.
Distribution: North America (Yucatan in Mexico).
Notes: (1) Wood 1972c: 142, 1982b: 357 (to *Chaetophloeus*). (3) Blackman 1942a: 357 (original description quoted).
References: (**hb**) Zocchi 1956: 140–141. (**ds**) Blackwelder 1947; Blandford 1897a; Ferrer 1942; Hagedorn 1910d: 26; Kleine 1912b: 183, 1914b: 348; Razzauti 1956: 141; Wood, S. L. 1982b: 357. (**tx**) Blackman 1942c: 397–474; Blandford 1897a;

Chapuis 1869: 39, 1873: 247; Gemminger & Harold 1872: 2673; Hagedorn 1910a: 65; Schedl 1940a: 337; Wood, S. L. 1972c: 142, 1982b: 357; Zocchi 1957: 140–141.

***cubensis* Bright** 1981c: 159. Holotype ♂♀; Mapor, Las Villas, Cuba; CNCI, Ottawa.
Distribution: Antilles Islands (Cuba).
References: (**ds**) Bright 1985c: 171. (**tx**) Bright 1981c: 159, 1985c: 171.

***fasciatus* (Blackman)** 1940b: 385 (*Renocis*). Holotype ♀; Tucson, Arizona [USA]; USNM, Washington.
Distribution: North America ("Mexico"/ S Arizona, S California, New Mexico, W Texas in USA).
Hosts: *Larrea tridentata, Prosopis* spp.
References: (cn) Anonymous 1974p. (**hb**) Bright & Stark 1973: 55. (**ds**) Anonymous 1974p; Atkinson et al. 1991: 156; Blackwelder & Blackwelder 1948; Bright & Stark 1973: 55; Furniss, R. L. & Carolin 1977: 345; Ward, C. R. et al. 1977: 30; Wood, S. L. 1982b: 362. (**tx**) Blackman 1940b: 385–387; Wood, S. L. 1982b: 362.

***heterodoxus* (Casey)** 1886: 258 (*Renocis*). Holotype ♀; Reno, Nevada [USA]; USNM, Washington.
Figures: Bright 1976d: 201, 208 (adult).
Distribution: North America (British Columbia, Manitoba, Saskatchewan in Canada/ Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Texas, Utah, Washington, Wyoming in USA).
Hosts: *Amelanchier* spp., *Cercocarpus* spp., *Cowania mexicana, Peraphyllum ramosissimum, Prunus* spp., *Purshia mexicana, Pyrus malus, Ribes* spp.
References: (**cn**) Anonymous 1971e, 1972k; Doane et al. 1936; Keen 1938: 132. (**ec**) Furniss, M. M. & Barr 1975: 16; Furniss, R. L. & Carolin 1977: 345; Keen 1938: 132; Tomalak, Welch, & Garroway 1969b. (**hb**) Bright & Stark 1973: 55; Chamberlin 1939: 124–125, 1958: 58; Doane et al. 1936; Furniss, M. M. & Barr 1975: 16; Furniss, R. L. & Carolin 1977: 345; Keen 1938: 132. (**ds**) Blackwelder & Blackwelder 1948; Bright 1976d: 95; Bright & Stark 1973: 55; Chamberlin 1939: 124–125, 1958: 58; Furniss, R. L. & Carolin 1977: 345; Gast et al. 1989: 385; Hagedorn 1910d: 13; Henshaw 1887: 7, 1895: 44; Keen 1929a: 15, 1938: 132; Kleine 1912b: 169, 1914b: 389; Leng 1920: 338; Patterson & Hatch 1945: 149; Swaine 1909: 144; Thatcher 1935: 261; Wood, S. L. 1948: 16, 1951a: 127, 1957c: 402. (**tx**) Blackman 1940b: 387–389; Bright 1976d: 95, 201, 208; Bruck 1933a: 240, 1936a: 119–120; Casey 1896: 358; Chamberlin 1939: 124–125, 1955: 118, 1958: 58; Eggers 1951: 151; Hagedorn 1910a: 63; Hopkins 1914: 128; Keen 1929a: 15; Lucas 1920: 565; Swaine 1909: 144; Wood, S. L. 1951a: 149, 1957c: 402, 1972c: 142, 1982b: 355. (**ms**) Lucas 1920: 565.

brittaini Swaine 1917: 20 (*Pseudocryphalus*). Lectotype ♂; Salmon Arm, British Columbia [Canada]; CNCI, Ottawa, designated by Bright 1967b: 679. Synonymy: Wood 1957c: 402.
Notes: (3) Blackman 1940b: 394 (description quoted).
References: (**cn**) Swaine 1918a: 57. (**hb**) Chamberlin 1939: 133; Swaine 1918a: 57. (**ds**) Blackwelder & Blackwelder 1948; Chamberlin 1939: 133; Keen 1929a: 15; Kleine 1934a: 138; Leng 1920: 338. (**tx**) Blackman 1940b: 398; Bright 1967b: 679; Bruck 1936a: 35, 121–122; Chamberlin 1939: 133; Eggers 1951: 149; Hoebeke 1978; Keen 1929a: 16; de Ruette 1970: 112; Swaine 1917: 20–21, 1918a: 57–58; Wood, S. L. 1957c: 402.

criddlei Swaine 1917: 21 (*Pseudocryphalus*). Lectotype ♂; Aweme, Manitoba [Canada]; CNCI, Ottawa, designated by Bright 1967b: 679. Synonymy: Wood 1957c: 402.
Notes: (3) Blackman 1940b: 395 (original description quoted).
References: (**cn**) Swaine 1918a: 57. (**hb**) Chamberlin 1939: 134; Swaine 1918a: 57. (**ds**) Blackwelder & Blackwelder 1948; Chamberlin 1939: 134; Kleine 1934a: 138; Leng 1920: 338. (**tx**) Blackman 1940b: 395; Bright 1967b: 679; Bruck 1936a: 123; Chamberlin 1939: 134; Dodge 1938: 24; Eggers 1951: 149; Hoebeke 1978; de Ruette 1970: 112; Swaine 1917: 21, 1918a: 57; Wood, S. L. 1957c: 402.

brunneus Blackman 1940b: 389 (*Renocis*). Holotype ♀; Cloudcroft, New Mexico [USA]; USNM, Washington. Synonymy: Wood 1972c: 142.
References: (**ds**) Blackwelder & Blackwelder 1948. (**tx**) Blackman 1940b: 389; McNamara 1984: 759; Wood, S. L. 1972c: 142.

fuscus Blackman 1940b: 391 (*Renocis*). Holotype ♀; Williams, Arizona [USA]; USNM, Washington. Synonymy: Wood 1972c: 142.
References: (**ds**) Blackwelder & Blackwelder 1948. (**tx**) Blackman 1940b: 391–392; Wood, S. L. 1972c: 142.

commixtus Blackman 1940b: 392 (*Renocis*). Holotype ♀; Williams, Arizona [USA]; USNM, Washington. Synonymy: Wood 1972c: 142.
References: (**ds**) Blackwelder & Blackwelder 1948. (**tx**) Blackman 1940b: 392–394; Wood, S. L. 1972c: 142.

***howdeni* Bright** 1972d: 36. Holotype ♀; Barbecue Bottom, Trelawny Parish, Jamaica; CNCI, Ottawa.
Figures: Bright 1972d: 35, 74.
Distribution: Antilles Islands (Jamaica).
References: (**ds**) Bright 1985c: 171. (**tx**) Bright 1972d: 35–36, 74, 1985c: 171; McNamara 1977: 194.

***hystrix* (LeConte)** 1858: 81 (*Hylesinus*). Holotype ♂; San Diego, California [USA]; MCZ, Cambridge.
Distribution: North America (Baja California Norte in Mexico/ S California in USA).
Hosts: *Rhus integrifolia, R. ovata, R. laurina.*
References: (**hb**) Bright & Stark 1973: 54; Chamberlin 1939: 182. (**ds**) Bright & Stark 1973: 54; Bruck 1933a: 239; Chamberlin 1939: 182; Fall 1906: 203; Hagedorn 1910d: 19; Henshaw 1882: 269, 1885: 149; Keen 1929a: 22; Kleine 1914b: 390, 1934a: 132; Leng 1920: 338; Swaine 1909: 88; Wood, S. L. 1982b: 351. (**tx**) Blaisdell 1892: 36; Bruck 1936a; Chamberlin 1939: 182; Gemminger & Harold 1872: 2674; Hagedorn 1910a: 66; Hopkins 1914: 118; Keen 1929a: 22; LeConte 1858: 81, 1868: 171, 1876: 382; Lucas 1920: 175; Swaine 1909: 88; Wood, S. L. 1956c: 251, 1982b: 351. (**ms**) Lucas 1920: 175.

***insularis* (Blackman)** 1940b: 400 (*Renocis*). Holotype ♀; Key West, Florida [USA]; USNM, Washington.
Distribution: Antilles Islands (Bahama Islands/ Cuba/ Virgin Islands), North America (Florida in USA).
Hosts: *Acras sapota, Manilkara* spp.
References: (**hb**) Wood, S. L. 1982b: 359. (**ds**) Atkinson et al. 1991: 156; Blackwelder 1947; Bright 1985c: 171; Wood, S. L. 1982b: 359. (**tx**) Blackman 1940b: 400–401, 1943c: 390; Bright 1985c: 171; Wood, S. L. 1982b: 359.

***lasius* Wood** 1956c: 251. Holotype ♀; Nochixtlan, Oaxaca, Mexico; SMUK, Lawrence.
Distribution: North America (Chiapas, Morelos, Oaxaca in Mexico).
Hosts: *Rhus* sp.
References: (**hb**) Atkinson & Equihua 1985b: 231. (**ds**) Atkinson & Equihua 1985b: 231. (**tx**) Wood, S. L. 1956c: 251.

***maclayi* (Bruck)** 1936b: 35 (*Pseudocryphalus*). Holotype ♀; Westwood Hills, Los Angeles Co., California [USA]; OSUC, Columbus.
Distribution: North America (S California in USA).
Hosts: *Encelia californica.*
Notes: (3) Blackman 1940b: 382 (redescribed).
References: (**hb**) Bright & Stark 1973: 55; Chamberlin 1939: 134. (**ds**) Blackwelder 1939; Blackwelder & Blackwelder 1948; Bright & Stark 1973: 55; Chamberlin 1939: 134; Wood, S. L. 1982b: 354. (**tx**) Blackman 1940b: 382–383; Bruck 1936a: 35–36, 121–123, 1936b: 35, 1940: 382; Chamberlin 1939: 134; Wood, S. L. 1956c: 252, 1982b: 354.

***mandibularis* Bright** 1981c: 160. Holotype ♂; Tabago; USNM, Washington.
Distribution: Antilles Islands (Tabago).
References: (**tx**) Bright 1981c: 160.

***mexicanus* (Blackman)** 1940b: 397 (*Renocis*). Holotype ♀; Guadalajara, Jalisco, Mexico; USNM, Washington.
Figures: Atkinson et al. 1986: 24, 53.
Distribution: North America (Guatemala/ Jalisco, Morelos in Mexico/ Arizona in USA).
Hosts: *Eysenhardtia polyotacha, E.* sp.
References: (**hb**) Atkinson et al. 1986: 25; Burgos & Saucedo 1983: 69. (**ds**) Atkinson & Equihua 1985a: 79; Atkinson et al. 1986: 25, 52; Blackwelder 1947; Burgos & Saucedo 1983: 69; Williams 1947: 5; Wood, S. L. 1982b: 357. (**tx**) Atkinson et al. 1986: 24, 53; Blackman 1940b: 397; Eggers 1951: 149; Schedl 1940a: 337; Wood, S. L. 1967b: 95, 1972c: 142, 1982b: 357.

mexicanus Eggers 1951: 149 (*Renocis*). Holotype ♂?; Mexico; Eggers Collection, in NHMW, Wien, preoccupied by Blackman 1940b: 397. Synonymy: Wood 1972c: 142.
References: (**tx**) Eggers 1951: 149; Nunberg 1956d: 208, 1959c: 168; Wood, S. L. 1956c: 253, 1972c: 142.

eggersi Wood 1956c: 253 (*Renocis*). Holotype ♂?; Mexico; Eggers Collection, in NHMW, Wien, automatic. Synonymy: Wood 1972c: 142.
References: (**tx**) Wood, S. L. 1956c: 253, 1972c: 142.

blackmani Nunberg 1956d: 208 (*Renocis*). Holotype ♂?; Mexico; Eggers Collection, in NHMW, Wien, automatic. Synonymy: Wood 1972c: 142.
References: (**tx**) Nunberg 1956d: 208, 1959c: 168.

***minimus* Wood** 1967b: 95. Holotype ♂; Armeria, Colima, Mexico; Wood Collection.
Distribution: North America (Colima, Jalisco in Mexico).
Hosts: *Apoplanesia paniculata.*
References: (**ec**) Equihua & Atkinson 1986: 626. (**hb**) Equihua & Atkinson 1986: 626; Wood, S. L. 1982b: 358. (**ds**) Atkinson & Equihua 1985b: 231; Equihua & Atkinson 1986: 626; Wood, S. L. 1982b: 358. (**tx**) Wood, S. L. 1967b: 95, 1982b: 358.

***parkinsoniae* (Blackman)** 1940b: 378 (*Renocis*). Holotype ♀; Catalina Springs, Arizona [USA]; USNM, Washington.
Figures: Bright & Stark 1973: 153 (adult).
Distribution: North America (Baja California Sur in Mexico/ S Arizona, S California in USA).
Hosts: *Cercidium microphyllum.*
References: (**hb**) Bright & Stark 1973: 55. (**ds**) Blackwelder & Blackwelder 1948; Bright & Stark 1973: 55; Furniss, R. L. & Carolin 1977: 345; Wood, S. L. 1982b: 361. (**tx**) Blackman 1940b: 378; Bright & Stark 1973: 153; Schedl 1952c: 122; Wood, S. L. 1982b: 361.

***penicillatus* (Bruck)** 1933a: 239 (*Renocis*). Holotype ♂; Peter's Canyon, Orange Co., California [USA]; CAS, San Francisco.

Distribution: North America (Baja California Norte, Queretaro, San Luis Potosi in Mexico/ California, Colorado, New Mexico, Utah in USA).
Hosts: *Rhus integrifolia, R. microphylla, R. ovata, R. trilobata.*
Notes: (3) Blackman 1940b: 395 (redescribed).
References: (**cn**) Doane et al. 1936. (**hb**) Bright & Stark 1973: 54; Chamberlin 1939: 125; Doane et al. 1936. (**ds**) Atkinson 1989a: 59; Atkinson & Equihua 1985b: 231; Blackwelder 1939, 1947; Blackwelder & Blackwelder 1948; Bright 1972b: 1496; Bright & Stark 1973: 54; Chamberlin 1939: 125; Ferrer 1942; Furniss, R. L. & Furniss 1977: 345; Wood, S. L. 1982b: 361. (**tx**) Blackman 1940b: 395–396; Bruck 1933a: 239, 1936a: 119–120; Chamberlin 1939: 125; de Ruette 1970: 113; Schedl 1940a: 337; Wood, S. L. 1982b: 361.

***phoradendri* Wood** 1969b: 8. Holotype ♂; Zamorano, Morazan, Honduras; Wood Collection.
Distribution: North America (Costa Rica/Honduras).
Hosts: *Phoradendron robustissimum, P.* sp.
Notes: Wood 1969c: 122 (correction of spelling lapsus calami).
References: (**ds**) Wood, S. L. 1982b: 360. (**tx**) Wood, S. L. 1967b: 96, 1969b: 8, 1969c: 122, 1982b: 360.

***pouteriae* Wood** 1986c: 269. Holotype ♂; Campo Experimental, INIF, Escarcega, Campeche, Mexico; Wood Collection.
Distribution: North America (Campeche in Mexico).
Hosts: *Pouteria campechana.*
References: (**ds**) Estrada & Atkinson 1988: 204. (**tx**) Wood, S. L. 1986c: 269.

***pruinosus* (Blackman)** 1940b: 383 (*Renocis*). Holotype ♀; San Bernardino Co., California [USA]; USNM, Washington.
Distribution: North America (S Arizona, S California in USA).
Hosts: *Encelia farinosa.*
References: (**hb**) Bright & Stark 1973: 55. (**ds**) Blackwelder & Blackwelder 1948; Bright & Stark 1973: 55; Wood, S. L. 1982b: 353. (**tx**) Blackman 1940b: 383; McNamara 1984: 759; Wood, S. L. 1982b: 353.

***struthanthi* Wood** 1967b: 96. Holotype ♂; Volcan de Colima, Jalisco, Mexico; Wood Collection.
Distribution: North America (Jalisco, Morelos, Oaxaca, Puebla, Veracruz in Mexico).
Hosts: *Phoradendron* spp., *Psittacanthus schiedeanus, Struthanthus deppeanus, S. venetus.*
References: (**hb**) Wood, S. L. 1982b: 359. (**ds**) Wood, S. L. 1982b: 359. (**tx**) McNamara 1977: 194; Wood, S. L. 1967b: 96, 1982b: 359.

***sulcatus* (Wood)** 1956c: 252 (*Renocis*). Holotype ♀; Ixmiquilpan, Hidalgo, Mexico; SMUK, Lawrence.
Distribution: North America (Hidalgo, San Luis Potosi in Mexico).
Hosts: *Flourensia cernula,* (?) *Rhus* sp.
References: (**hb**) Atkinson & Equihua 1988: 88. (**ds**) Atkinson & Equihua 1985b: 231, 1988: 88; Wood, S. L. 1982b: 356. (**tx**) Wood, S. L. 1956c: 252, 1982b: 356.

Genus *Cryphyophthorus* Schedl

CRYPHYOPHTHORUS SCHEDL 1953c: 294. Type-species: *Cryphyophthorus eggersi* Schedl, original designation.
References: (**hb**) Wood, S. L. 1986a: 54. (**ds**) Wood, S. L. 1986a: 54. (**tx**) Schedl 1953c: 294; Wood, S. L. 1986a: 54.

***eggersi* Schedl** 1953c: 294. Holotype, sex?; Sumatra, Siboelangit; Eggers specimens in Schedl Collection in NHMW, Wien.
Distribution: Indonesia (Sumatra).
Hosts: "in Blutenstielen einer Euphorbiaceae."
Notes: (3) Schedl 1953c: 295 (*Eriosinus sumatranus,* nomen nudum).
References: (**tx**) Schedl 1953c: 294–295, 1961e: 132, 1979c: 87.

***hylesiniformis* (Schedl)** 1961e: 132 (*Ptilopodius*). Holotype, sex?; Madagascar, Montagne d'Ambre, Plateau; IRSM, Madagascar.
Distribution: Madagascar.
References: (**hb**) Schedl 1977a: 43. (**tx**) Schedl 1961e: 132, 1962r: 93, 1977a: 43.

Genus *Liparthrum* Wollaston

LIPARTHRUM WOLLASTON 1854: 294. Type-species: *Liparthrum bituberculatum* Wollaston, original designation.

Erineosinus Blackman 1920a: 53. Type-species: *Erineosinus squamosus* Blackman, monobasic. Synonymy: Wood 1957c: 399.
References: (**tx**) Blackman 1920a: 53, 1922b: 74–75, 1928a: 186; Wood, S. L. 1957c: 399.

Phloeochilus Schedl 1953c: 292. Type-species: *Phloeochilus palaquius* Schedl, original designation. Synonymy: Schedl 1963h: 263.
References: (**tx**) Browne 1961c: 70; Schedl 1953c: 292, 1963h: 263.

Phloeotrypetus Wood 1960a: 16. Type-species: *Phloeotrypetus palauensis* Wood, original designation. Synonymy: Schedl 1963h: 263.
References: (**tx**) Schedl 1963h: 263; Wood, S. L. 1960a: 16.

Dacryophthorus Schedl 1971a: 281. Type-species: *Dacryophthorus brincki* Schedl, original designation. Synonymy: Wood 1984b: 226.
References: (**tx**) Schedl 1971a: 281; Wood, S. L. 1984b: 226.

Trypanophellos Bright 1982b: 166. Type-species: *Trypanophellos necopinus* Bright, original designation. Synonymy: Wood 1992b:81.
References: (**tx**) Bright 1982b: 166, 1985c: 171; Wood, S. L. 1992b: 81.

Keys: Schedl 1959f: 36 for Europe and Atlantic Islands; Wood 1982b: 364 for North America.
Notes: (1) International Commission on Zoological

Nomenclature (ICZN) 1981a: 64 (*Leiparthrum* Wollaston 1854: 294, amended in Wollaston 1864: 265, declared an inadvertent error in original spelling).
References: (**hb**) Barbey 1901; Eichhoff 1881a: 169; Tredl 1907: 13; Wood, S. L. 1986a: 54. (**ds**) Wood, S. L. 1986a: 54. (**tx**) Aube 1862: 388; Balachowsky 1949a: 150–155; Bright 1968a: 637, 1975: 133; Brooke 1975: 135; Eichhoff 1878b: 107, 1883a: 108; Ferrari 1867a: 8, 18; Goz 1885: 278; Hagedorn 1910a: 68, 1910d: 28; ICZN 1981a: 64; Karaman 1972: 90; Lacordaire 1866: 376; Lucas 1920: 378; Pfeffer 1941: 234–235, 1955: 148, 1989a: 40; Reitter 1894: 55, 1913: 54, 58–60; Schedl 1959f: 35–53, 1963h: 263; Schedl, Lindberg, & Lindberg 1959: 1–78; Semenov 1902: 272; Spessivtsev 1931a: 87; Stark 1952: 237–243; Winkler 1932: 1632; Wollaston 1854: 294, 1864: 265; Wood, S. L. 1957c: 399, 1969c: 121–122; 1974f: 234–235, 1976b, 1986a: 54.

***albosetum* Bright** 1968a: 638. Holotype ♂; 35 km NW Penjamo, Baja California Sur; CAS, San Francisco.
Figures: Bright 1968a: 639 (outline of adult).
Distribution: North America (Baja California Sur, Sonora in Mexico).
Hosts: Shrub, *Jatropha cinerea*.
References: (**hb**) Atkinson & Equihua 1988: 92. (**ds**) Atkinson & Equihua 1988: 92; Furniss, M. M. 1978; Wood, S. L. 1982b: 366. (**tx**) Bright 1968a: 638–639; Wood, S. L. 1982b: 366.

***americanum* Wood** 1969b: 8. Holotype ♀; Lower Rio Tempisque, Guanacaste Prov., Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: *Ficus* sp.
References: (**hb**) Wood, S. L. 1982b: 366. (**ds**) Wood, S. L. 1982b: 366. (**tx**) Wood, S. L. 1969b: 8, 1982b: 366.

***arizonicum* Wood** 1959a: 57. Holotype ♂; Miller Canyon, Huachuca Mountains, Arizona [USA]; Wood Collection.
Distribution: North America (Chihuahua, Durango in Mexico/ Arizona in USA).
Hosts: *Arbutus arizonicus*, *A.* sp.
References: (**ay**) Thomas, J. B. 1967. (**ec**) Furniss, R. L. & Carolin 1977: 366. (**hb**) Bright 1968a: 638; Furniss, R. L. & Carolin 1977: 366; Wood, S. L. 1982b: 364. (**ds**) Bright 1968a: 638; Furniss, R. L. & Carolin 1977: 366; Thomas, J. B. 1967; Wood, S. L. 1959a: 57, 1960b: 60, 1982b: 364. (**tx**) Bright 1968a: 638; Thomas, J. B. 1967; Wood, S. L. 1959a: 57, 1982b: 364.

***arnoldi* Semenov** 1902: 272. Lectotype, sex?; Transcaucasia: Tiflis; not located, designated by Michalski 1969a: 891.
Figures: Schedl 1952: 242 (adult).
Distribution: Europe (Caucasus, Black Sea Coast in W USSR).
Hosts: *Periploca graeca*.
Notes: (3) Schedl 1959f: 50 (redescribed).
References: (**hb**) Stark 1952: 241. (**ds**) Hagedorn 1910d: 28; Heyden, Reitter, & Weise 1906: 709; Kleine 1912b: 185, 1934a: 136; Negru 1968c: 91; Pittioni 1943: 176; Schaufuss 1915: 1229; Schedl 1950f: 50, 1961b: 187; Stark 1927b: 88, 1952: 241. (**tx**) Eggers 1910f; Hagedorn 1910a: 69; Michalski 1969a: 891, 1969b: 566; Pfeffer 1941a: 391, 396; Reitter 1913a: 59; Schedl 1934f: 1637, 1959f: 50; Semenov 1902: 272, 1903: 79; Stark 1952: 241.

babadjanidis Eggers 1910f: 558. Holotype, sex?; Babadjanides in Elisabetpol, provinciae Transcaucasicae (USSR); Eggers Collection, in NHMW, Wien. Synonymy: Schedl 1959f: 50.
References: (**hb**) Stark 1952: 242. (**ds**) Pjatnitskii 1930a: 164; Schaufuss 1915: 1229; Stark 1952: 242. (**tx**) Eggers 1910f: 558; Pfeffer 1941a: 391, 395; Reitter 1913a: 60; Schedl 1934f: 1637, 1959f: 50–51; Stark 1952: 242.

***artemisiae* Wollaston** 1854: 299. Syntypes, sex?; Ins. Desertae Borealis (Madeira Islands); BMNH, London.
Distribution: Africa (Madeira Islands).
Hosts: *Artemisia argentea*.
Notes: (3) Schedl 1959f: 48 (redescribed).
References: (**ds**) Fauvel 1897; Gemminger & Harold 1872: 2681; Hagedorn 1910d: 28; Kleine 1912b: 185, 1914a: 22, 1934a: 136; Lacordaire 1866: 377; Lundblad 1958: 489; Schedl 1959f: 48, 1963e: 155; Schmitz 1898: 157; Wollaston 1854: 299, 1857: 97. (**tx**) Hagedorn 1910a: 69; Lacordaire 1866: 377; Schedl 1934f: 1637, 1959f: 47–48; Wollaston 1854: 299, 1857: 97, 1865: 247.

***artocarpus* Wood** 1988b: 193. Holotype ♂; Hattikeri, S. Kanara Div., Bombay, India; FRI, Dehra Dun.
Distribution: Asia (Maharashtra in India).
Hosts: *Artocarpus integrifolia*.
Notes: (3) Beeson 1941 (1961: 290) (*artocarpus*, nomen nudum).
References: (**tx**) Beeson 1941 (1961: 290); Wood, S. L. 1988b: 193.

***australis* Schedl** 1975k: 279. Holotype, sex?; Transvaal: Kruger National Park, Pafuri; Transvaal Museum, Pretoria.
Figures: Schedl 1975k: 281.
Distribution: Africa (South Africa).
Hosts: *Lonchocarpus capassa*.
References: (**tx**) Schedl 1975k: 279, 281.

***bartschti* Muhl** 1891: 202. Syntypes, sex?; Wien, Austria; not given.
Distribution: Europe (Austria/ Caucasus in W USSR).
Hosts: *Viscum album*.
Notes: (3) Schedl 1959f: 49 (redescribed).
References: (**cn**) Wachtl 1901: 381. (**ec**) Kleine 1908c: 186; Nosek 1959a: 118, 1959b: 87. (**hb**)

Heymons 1921: 81–90; Lengerken 1954: 76; Nosek 1959a: 118, 1959b: 87; Schumacher 1918: 203; Stark 1952: 243; Wachtl 1901: 381. (**ds**) Endrodi 1958b; Hagedorn 1910d: 28; Heyden, Reitter, & Weise 1906: 709; Horion 1951; Kleine 1912b: 185, 1913a: 35, 1934a: 136; Lucht 1987: 277; Nosek 1958b: 93; Pfeffer 1989a: 40; Pittioni 1943: 174; Reitter 1894a: 55; Schaufuss 1915: 1220; Schedl 1959f: 49, 1980a: 13; Schilsky 1909: 187; Schumacher 1918: 203; Stark 1952: 243; Tredl 1907: 12; Wichmann 1927a: 64. (**tx**) Eggers 1910f; Endrodi 1957a, 1957b; Formanek 1907: 24; Hagedorn 1910a: 69; Lucht 1987: 277; Muhl 1891: 201–202; Pfeffer 1932b: 3, 1941a: 391, 396, 1941d: 26; Reitter 1894a: 55, 1913a: 60; Schedl 1934f: 1637, 1959f: 49, 1980a: 13; Semenov 1903: 79; Stark 1952: 243.

***bicaudatum* Wollaston** 1865: 44, 248. Holotype, sex?; Gomeram; BMNH, London.
Distribution: Africa (Gomera, Gran Canaria, Tenerife in Canary Islands).
Hosts: *Euphobia balsamifera, E. regis-jubae*.
Notes: (3) Schedl 1959f: 53 (redescribed).
References: (**cn**) Souphieff & Scherbinovskaja 1937: 27. (**ds**) Gemminger & Harold 1872: 2681; Hagedorn 1910d: 28; Kleine 1912b: 175, 1914d: 28, 1934a: 136; Peyerimhoff 1923a: 47; Schedl 1959f: 53; Schedl, Lindberg, & Lindberg 1959: 15; Souphieff & Scherbinovskaja 1937: 27; Uyttenboogaart 1937: 116. (**tx**) Eichhoff 1878b: 116; Hagedorn 1910a: 69; Peyerimhoff 1923a: 47; Schedl 1934f: 1637, 1959f: 53; Schedl, Lindberg, & Lindberg 1959: 15; Wollaston 1865: 44, 248.

***bituberculatum* Wollaston** 1854: 297. Syntypes, sex?; Maderam sylvaticam; BMNH, London.
Distribution: Africa (Madeira Island, 2000–4000 ft.).
Notes: (3) Schedl 1959f: 47 (redescribed).
References: (**cn**) Souphieff & Scherbinovskaja 1937: 25. (**ds**) Fauvel 1897; Gemminger & Harold 1872: 2681; Hagedorn 1910d: 28; Jansson 1940: 63; Kleine 1912b: 185, 1914a: 22; Lacordaire 1866: 377; Lundblad 1958: 489; Schedl 1959f: 47, 1963e: 155; Schmitz 1898: 157; Souphieff & Scherbinovskaja 1937: 25; Wollaston 1854: 297, 1857: 97. (**tx**) Eichhoff 1878b: 107; Ferrari 1868: 251–254; Hagedorn 1910a: 69; Hopkins 1914: 124; Lacordaire 1866: 377; Schedl 1934f: 1637, 1959f: 47; Wollaston 1854: 297, 1857: 97, 1862b: 173, 1864: 265, 1865: 246.

***brincki* (Schedl)** 1971a: 281 (*Dacryophthorus*). Holotype, sex?; Western Prov.: Yakkala, 18 miles NE Colombo; ZIDSU, Lund, Sweden.
Figures: Schedl 1971a: 283.
Distribution: Asia (Sri Lanka).
Hosts: *Wendlandia bicuspidata*.
Notes: (1) Wood 1984b: 226 (to *Liparthrum*).
References: (**tx**) Schedl 1971a: 281, 283, 1979c: 47.

***carapae* Wood** 1971: 9. Holotype ♂; Campamento Rio Grande, 30 km E Palmar, Bolivar, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Carapa guianensis*.
References: (**hb**) Wood, S. L. 1971: 9–10.

***colchicum* Semenov** 1903: 79. Syntypes, sex?; Caucaso occidentali: Prov. Pontica: Chosta; Semenov Collection and Silantjev Collection.
Distribution: Africa (Algeria), Europe (Caucasus in W USSR/ Yugoslavia).
Hosts: *Laurus nobilus*.
Notes: (3) Schedl 1959f: 46 (redescribed).
References: (**ec**) Kono & Watanabe 1935: 69; Ruschka 1916: 26; Wichmann 1916: 19. (**hb**) Heymons 1921: 81–90; Lengerken 1939: 59, 1954: 76; Stark 1952: 239; Wichmann 1916: 19. (**ds**) Hagedorn 1910d: 28; Heyden, Reitter, & Weise 1906: 709; Kleine 1912b: 185, 1913a: 313, 1934a: 136; Schaufuss 1915: 1229; Schedl 1959f: 46; Stark 1927b: 88, 1952: 239. (**tx**) Eggers 1910f; Hagedorn 1910a: 69; Michalski 1969b: 566; Pfeffer 1941a: 391, 396, 1941d: 21; Reitter 1913a: 60; Schedl 1934f: 1637, 1959f: 46; Semenov 1903: 79; Stark 1952: 239; Wichmann 1916: 19, 1916b: 432–433.

***cracentis* Wood** 1969b: 9. Holotype ♀; 29 km W Niltipec, Oaxaca, Mexico; Wood Collection.
Distribution: North America (Oaxaca in Mexico).
Hosts: *Thevetia* sp.
References: (**hb**) Wood, S. L. 1982b: 365. (**ds**) Wood, S. L. 1982b: 365. (**tx**) Wood, S. L. 1969b: 9, 1982b: 365.

***curtum* Wollaston** 1854: 298. Holotype, sex?; Maderam australem, in horto Loweano prope Funchal; BMNH, London.
Distribution: Africa (Fuerteventura, Gomera, Gran Canaria, Hierro, Lanzarote, La Palma, Pajara, Tenerife in Canary Islands/ Madeira Island).
Hosts: *Euphorbia* sp., *Ficus carica, Spartocystus nubigenus*.
Notes: (3) Schedl 1959f: 44 (redescribed; *frontale* Eggers, nomen nudum, synonymy).
References: (**cn**) Souphieff & Scherbinovskaja 1937: 25. (**ds**) Borges & Serrano 1989; Bright 1987a: 3; Fauvel 1887; Gemminger & Harold 1872: 2681; Hagedorn 1910d: 28; Israelson 1984, 1985: 17; Jansson 1940: 63; Kleine 1912b: 185, 1914a: 20, 22; Lacordaire 1866: 277; Lundblad 1958: 489; Schedl 1959f: 43, 1963e: 155, 1971d: 425; Schedl, Lindberg, & Lindberg 1959: 15; Schmitz 1898: 157; Souphieff & Scherbinovskaja 1937: 25; Wollaston 1854: 298, 1857: 97. (tx) Eichhoff 1878b: 109; Hagedorn 1910a: 69; Lacordaire 1866: 377; Lucas 1920: 378; Schedl 1934f: 1637, 1959f: 15, 43; Schedl, Lindberg, & Lindberg 1959: 15; Wollaston 1854: 298, 1857: 97, 1861b: 39, 1862b: 173, 1864: 266, 1865: 246. (**ms**) Lucas 1920: 378. *ciliatum* Eggers 1928b: 283. Holotype ♂; Gran

Canaria (Santa Brigida); Eggers Collection, in NHMW, Wien. Synonymy: Schedl 1939m: 15.

References: (**cn**) Souphieff & Scherbinovskaja 1937: 102. (**ds**) Kleine 1934a: 136; Souphieff & Scherbinovskaja 1937: 102; Uyttenboogaart 1937: 116. (**tx**) Eggers 1928b: 283; Schedl 1934f: 1637.

***genistae* (Aube)** 1862: 388 (*Hypoborus*). Syntypes, sex?; Hyeres (France); not located.

Figures: Balachowsky 1949a: 153, Kalina 1970: 117.

Distribution: Africa (Algeria/ Morocco/ Tunisia), Asia (Israel), Europe (Corsica/ S France/ Greece/ Italy/ Sardinia/ Sicily/ Spain/ Crimea, Caucasus in W USSR/ Yugoslavia).

Hosts: *Anagyris foetidae*, *Calycotoma spinosa*, *Cytisus* sp., *Genista horrida*, *G. numidica*, *Retania sphaerocarpa*, *Spartium junceum*.

Notes: (3) Schedl 1959f: 51 (redescribed).

References: (**cn**) Grandi 1951. (**ec**) Halperin & Holzschuh 1984: 27; Kleine 1908c: 186; Novak, P. 1952: 413. (**hb**) Eichhoff 1881a: 45, 170; Grandi 1951; Halperin & Holzschuh 1984: 27; Kalina 1970: 116; Masutti 1964; Peyerimhoff 1919: 251; Rupertsberger 1880: 229; Wachtl 1876a: 458. (**ds**) Acloque 1896; Barthe 1896; Calwer 1893; Eggers 1912f; Gemminger & Harold 1872: 2684; Gozis 1875: 80; Hagedorn 1910d: 28; Halperin & Holzschuh 1984: 27; Heyden, Reitter, & Weise 1883: 181, 1891: 670, 1906: 709; Kleine 1912b: 185, 1934a: 136; Lacordaire 1866: 380; Novak, P. 1952: 413, 1964; Perris 1876a: 255, 1877a: 415; Peyerimhoff 1919: 251; Pfeffer 1947d: 127, 1977: 270; Reitter 1894a: 56; Sainte-Claire 1914: 469; Sainte-Claire & Mequignon 1938: 445; Schaufuss 1915: 1229; Schedl 1959f: 51, 1967c: 70, 1971d: 426; Stein 1868: 114; Stein & Weise 1877: 164; Tredl 1907: 12; Wachtl 1876a: 458. (**tx**) Acloque 1896; Aube 1862: 388; Balachowsky 1949a: 154; Eggers 1912f; Eichhoff 1864b: 46, 1868d: 419, 1878b: 111, 1881a: 45, 170, 1883a: 109, 132; Fauvel 1889; Ferrari 1867a: 18, 1867b: 114; Hagedorn 1910a: 69; Kalina 1970: 117; Lacordaire 1866: 380; Muhl 1891: 201; Perris 1877a: 415; Pfeffer 1941a: 390, 394, 1977: 270–271; Portevin 1935: 322; Reitter 1894a: 56, 1913a: 59; Rupertsberger 1880: 229; Schedl 1934f: 1637, 1959f: 51; Semenov 1902: 272.

genistae georgi Knotek 1895: 89. Syntypes, sex?; Quarantaininsel St. Georges vor Salamis; not located. Synonymy: Schedl 1959f: 51.

Notes: (1) Pfeffer 1977: 271 (treated as a subspecies).

References: (**ec**) Kleine 1908c: 186. (**hb**) Knotek 1897: 157, 1898b: 326; Stark 1952: 240. (**ds**) Hagedorn 1910d: 29; Heyden, Reitter, & Weise 1906: 709; Kleine 1912b: 185, 1913a: 307, 1934a: 136; Knotek 1898b: 326; Langhoffer 1915c: 157; Pittioni 1943: 176; Reitter 1894a: 56; Schaufuss 1915: 1229; Stark 1952: 240. (**tx**) Csiki 1907; Eggers 1910f; Hagedorn 1910a: 69; Knotek 1895: 89; Pfeffer 1941a: 390, 392, 1977: 271; Reitter 1894a: 56, 1913a: 59; Schedl 1959f: 51; Stark 1952: 240.

albidum Wichmann 1916: 21. Syntypes, sex?; Insel St. Andraa bei Rovigno, Umgebung von Pola, Insel Brione (Istrien); not given. Synonymy: Schedl 1959f: 51, Pfeffer 1977: 277.

References: (**ec**) Kleine 1944: 83; Ruschka 1916: 28; Wichmann 1916: 21. (**hb**) Heymons 1921: 81–90; Lengerken 1939: 59, 1954: 76; Wichmann 1916: 21. (**ds**) Kleine 1934a: 136; Pittioni 1943: 176. (**tx**) Pfeffer 1941a: 390, 392, 1977: 277; Schedl 1934f: 1637, 1959f: 51; Wichmann 1916: 21.

cytisi Eggers 1927d: 121. Syntypes 2, sex?; Herzegovina (Dresnica); Landesmuseum Sarajevo (Yugoslavia), and Eggers Collection, in NHMW, Wien. Synonymy: Schedl 1959f: 51.

References: (**ds**) Kleine 1934a: 136. (**tx**) Eggers 1927d: 121; Pfeffer 1941a: 389, 392, 1977: 272; Schedl 1934f: 1637, 1959f: 51.

peyrimhoffi Pfeffer 1941d: 26. Syntypes, sex?; Algeria (Laverdure, Djebel Aurez); Pfeffer Collection. Synonymy: Balachowsky 1949a: 154

References: (**ds**) Pfeffer 1947d: 128. (**tx**) Balachowsky 1949a: 154; Pfeffer 1941a: 390, 393, 1941d: 26.

***hispaniolum* Bright** 1981c: 161. Holotype ♀; San Cristobal, Dominican Republic; NHMBS, Basel.

Distribution: Antilles Islands (Dominican Republic in Hispanola).

References: (**ds**) Bright 1985c: 171. (**tx**) Bright 1981: 161, 1985c: 171.

***inarmatum* Wollaston** 1860: 364. Syntypes, sex?; Maderae; BMNH, London.

Distribution: Africa (Gomera, Gran Canaria, Hierro, Langarote, La Palma, Tenerife in Canary Islands/ Madeira Island/ Morocco).

Hosts: *Euphorbia dendroides*, *E. piscatoria*.

Notes: (3) Schedl 1959f: 38 (redescribed).

References: (**cn**) Souphieff & Scherbinovskaja 1937: 28. (**hb**) Peyerimhoff 1926: 386. (**ds**) Fauvel 1897; Gemminger & Harold 1872: 2681; Hagedorn 1910d: 29; Jansson 1940: 63; Kleine 1912b: 185, 1914a: 20, 22, 1934a: 136; Lundblad 1958: 489; Peyerimhoff 1923a: 47, 1925: 10, 1926: 386; Schedl 1963e: 155, 1964a, 1971d: 425; Schedl, Lindberg, & Lindberg 1959: 16; Schmitz 1898: 157; Souphieff & Scherbinovskaja 1937: 28. (**tx**) Eichhoff 1878b: 113; Hagedorn 1910a: 69; Peyerimhoff 1923a: 47; Pfeffer 1941: 389, 391; Schedl 1934f: 1637, 1959f: 38; Schedl, Lindberg, & Lindberg 1959: 16; Wollaston 1860: 364–365, 1861b: 39, 1862b: 173, 1864: 266, 1865: 247.

***laurivorus* Schedl** 1968a: 23. Holotype, sex?; Topaktas bei Dortyol; Schedl Collection in NHMW, Wien.

Distribution: Asia (Turkey).

Hosts: *Laurus nobilis*.
References: (**tx**) Schedl 1968a: 23.

***longifolia* (Stebbing)** 1903a: 267 (*Cryphalus*). Syntypes, sex?; types labeled Toris Valley, NW Himalayas, published as NW Himalayas: Jaunsar Div., Heshahr State: Taklesh; FRI, Dehra Dun.
Figures: Stebbing 1914: 534 (adult, galleries).
Distribution: Asia (Bashahr, Punjab, Uttar Pradesh in India).
Hosts: *Pinus roxburghii*.
References: (**cn**) Pierce, W. D. 1917: 74; Stebbing 1903a: 267, 1914: 533; Troup 1916: 1–126. (**ec**) Stebbing 1914: 533. (**hb**) Stebbing 1903a: 267, 1914: 533. (**ds**) Beeson 1961: 290; Hagedorn 1910d: 44; Kleine 1913b: 118, 1914b: 276, 1934a; Pierce, W. D. 1917: 74; Stebbing 1903a: 267. (**tx**) Hagedorn 1910a: 87; Stebbing 1903a: 267, 1914: 533.

***loweanum* Wollaston** 1867: 118. Syntypes, sex?; S. Antao, S. Vicente, S. Iago, and Fogo; BMNH, London.
Distribution: Africa (Fogo, Santo Antao, Sao Vicente, St. Jago in Cape Verde Islands).
Hosts: *Euphorbia tuckeyana*.
Notes: (3) Schedl 1959f: 40 (partial redescription).
References: (**ds**) Gemminger & Harold 1872: 2681; Hagedorn 1910d: 29; Kleine 1912b: 185, 1914a: 23; Schedl 1959f: 40. (**tx**) Eggers 1928b; Hagedorn 1910a: 69; Schedl 1959f: 40; Wollaston 1867: 118.

***lowei* Wollaston** 1862: 174. Syntypes, sex?; Teneriffam, Garachico; BMNH, London.
Distribution: Africa (Gomera, Tenerife in Canary Islands).
Hosts: *Euphorbia regis-jubae, E.* sp.
Notes: (3) Schedl 1959f: 40 (redescribed).
References: (**cn**) Souphieff & Scherbinovskaja 1937: 102. (**ds**) Gemminger & Harold 1872: 2681; Hagedorn 1910d: 29; Kleine 1912b: 185, 1914a: 20, 1934a: 136; Peyerimhoff 1923a: 47; Schedl 1959f: 40, 1971d: 425; Schedl, Lindberg, & Lindberg 1959: 16; Souphieff & Scherbinovskaja 1937: 102; Uyttenboogaart 1937: 116. (**tx**) Eichhoff 1878b: 115; Peyerimhoff 1923a: 47; Schedl 1934f: 1637, 1959f: 40; Schedl, Lindberg, & Lindberg 1959: 16; Wollaston 1861b: 40, 1862b: 174, 1864: 267, 1865: 248.

***mandibulare* Wollaston** 1854: 295. Syntypes, sex?; Maderam borealem; BMNH, London.
Distribution: Africa (Madeira Island).
Notes: (3) Schedl 1959f: 45 (original description quoted).
References: (**cn**) Souphieff & Scherbinovskaja 1937: 25. (**ds**) Fauvel 1897; Gemminger & Harold 1872: 2681; Hagedorn 1910d: 29; Jansson 1940: 63; Kleine 1912b: 185, 1914a: 22; Lacordaire 1866: 377; Lundblad 1958: 489; Schedl 1959f: 45, 1963e: 155; Schmitz 1895: 157; Souphieff & Scherbinovskaja 1937: 25; Wollaston 1854: 295, 1857: 97. (**tx**) Eichhoff 1878b: 117; Hagedorn 1910a: 69; Lacordaire 1866: 377; Schedl 1934f: 1637, 1959f: 45; Wollaston 1854: 295, 1857: 97, 1865: 245.

***meridensis* Wood** 1971: 10. Holotype ♂; 5 km E Lagunillas, Merida, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: Compositae shrub.
References: (**tx**) Wood, S. L. 1971: 10.

mexicanum Wood 1983a: 657. Holotype ♂; Cuernavaca, Morelos, Mexico; Wood Collection.
Distribution: North America (Morelos in Mexico).
Hosts: *Ficus* sp.
References: (**hb**) Atkinson & Equihua 1985b: 231; Atkinson et al. 1986: 52. (**ds**) Atkinson & Equihua 1985b: 231; Atkinson et al. 1986: 52. (**tx**) Wood, S. L. 1983a: 657.

***mori* (Aube)** 1862: 387 (*Hypoborus*). Syntypes, sex?; Frejus; not located.
Figures: Balachowsky 1949a: 154.
Distribution: Africa (Algeria/ Tunisia), Europe (Corsica/ S France/ Greece/ Hungary/ Italy/ Yugoslavia).
Hosts: *Genista corsica, G. scorpius, Morus alba*.
Notes: Schedl 1959f: 41–42 (redescription; cites *brevi* Eggers, nomen nudum, *elongatum* Eggers, nomen nudum, synonymy).
References: (**ay**) Nusslin 1911a: 255. (**cn**) Grandi 1951; Kleine 1932a: 296. (**ec**) Kleine 1908c: 186. (**hb**) Beffa 1949, 1961; Eichhoff 1881a: 44, 169; Grandi 1951; Heymons 1921: 81–90; Kleine 1932a: 296; Lengerken 1939: 59; Rupertsberger 1880: 229; Stark 1952: 239; Wachtl 1876a: 458. (**ds**) Acloque 1896; Barthe 1896; Beffa 1949; Escalera 1919; Gemminger & Harold 1872: 2684; Gozis 1875: 80; Hagedorn 1910d: 29; Heyden, Reitter, & Weise 1883: 181, 1891: 670, 1906: 709; Kleine 1912b: 185, 1913a: 307, 1914: 16, 1932a: 296, 1934a: 136; Lacordaire 1866: 380; Langhoffer 1915c: 157; Lucht 1987: 277; Perris 1876a: 254, 1877a: 414–415; Pfeffer 1947d: 127; Reitter 1894a: 55; Sainte-Claire 1914: 469; Sainte-Claire & Mequignon 1938: 445; Schaufuss 1915: 1229; Schedl 1959f: 41, 1964a, 1971d: 430; Stark 1952: 239; Stein 1867: 114; Stein & Weise 1877: 164; Teocchi 1965b; Tredl 1907: 12; Wachtl 1876a: 458; Wood, S. L. 1957c: 399. (**tx**) Acloque 1896; Aube 1862: 387; Balachowsky 1949a: 154; Beffa 1949, 1961; Csiki 1907; Eggers 1927d, 1944c: 140; Eichhoff 1864b: 46, 1868d: 419, 1876a: 378, 1878b: 112, 1881a: 44, 169, 1883a: 108, 131; Fauvel 1889; Ferrari 1867a: 18, 1867b: 114; Hagedorn 1910a: 69; Lacordaire 1866: 380; Lucht 1987: 277; Muhl 1891: 201; Nusslin 1911a: 255; Perris 1877a: 414–415; Peyerimhoff 1911: 314; Pfeffer 1941a: 390, 392, 1941d: 26; Portevin 1935: 322; Reitter 1894a: 55, 1913a: 58; Rupertsberger 1880: 229; Schedl 1934f: 1637, 1959f: 41; Stark 1952: 239; Wood, S. L. 1957c: 399.

corsicum Eichhoff 1878a: 383, 1878b: 110. Holotype, sex?; Corsica; Hamburg Museum, lost. Synonymy: Schedl 1959f: 41.

References: (**ec**) Kleine 1908c: 186. (**hb**) Eichhoff 1881a: 45, 170. (**ds**) Barthe 1896; Hagedorn 1910d: 28; Heyden, Reitter, & Weise 1883: 181, 1891: 670, 1906: 709; Kleine 1912b: 185, 1934a: 136; Pfeffer 1935, 1947d: 127; Pittioni 1943: 176; Reitter 1894a: 56; Sainte-Claire 1914: 469; Sainte-Claire & Mequignon 1938: 445; Schaufuss 1915: 1229; Stein & Weise 1877: 164; Tredl 1907: 12. (**tx**) Balachowsky 1949a: 154; Eichhoff 1878a: 383, 1878b: 110, 1881a: 45, 170, 1883a: 109, 133; Hagedorn 1910a: 69; Muhl 1891: 201; Pfeffer 1941a: 391, 394; Reitter 1894a: 56, 1913a: 59; Schedl 1934f: 1637, 1959f: 41.

dalmatinum Eggers 1944c: 140. Holotype, sex?; Dalmatien; Eggers Collection, in NHMW, Wien. Synonymy: Schedl 1959f: 41.

References: (**tx**) Eggers 1944c: 140; Schedl 1959f: 41.

***necopinus* (Bright)** 1982b: 166 (*Trypanophellos*). Holotype ♀; Cayamas, Cuba; USNM, Washington.

Distribution: Antilles Islands (Cuba).

References: (**tx**) Bright 1982b: 166; Wood, S. L. 1992b:81.

***nigrescens* Wollaston** 1865: 44. Lectotype, sex?; Teneriffam; BMNH, London, designated by Israelsen 1980: 201.

Distribution: Africa (Gran Canaria, La Palma, Tenerife in Canary Islands/ Morocco), Asia (Turkey).

Hosts: *Cytisus proliferus, Laurus canariensis.*

Notes: (3) Schedl 1959f: 42 (redescribed).

References: (**cn**) Souphieff & Scherbinovskaja 1937: 26. (**ds**) Gemminger & Harold 1872: 2681; Hagedorn 1910d: 29; Kleine 1912b: 185, 1914a: 20; Palm 1967: 41; Schedl 1959f: 42, 1961b: 186, 1964a, 1971b: 430; Schedl, Lindberg, & Lindberg 1959: 16; Souphieff & Scherbinovskaja 1937: 26. (**tx**) Hagedorn 1910a: 69; Schedl 1934f: 1637, 1959f: 42; Schedl, Lindberg, & Lindberg 1959: 16; Wollaston 1865: 44, 246.

degener Lindberg 1953: 18. Holotype, sex?; publication not seen. Synonymy: Israelsen 1980: 201.

Notes: (3) Schedl 1959f: 38 (redescribed).

References: (**ds**) Palm 1967: 50; Schedl 1959f: 38, 1971d: 425; Schedl, Lindberg, & Lindberg 1959: 15. (**tx**) Lindberg 1953: 18; Schedl 1959f: 38; Schedl, Lindberg, & Lindberg 1959: 15.

***palaquius* (Schedl)** 1953c: 292 (*Phloeochilus*). Syntypes, sex?; Malaya, Selangor Kepong; BMNH, London, and Schedl Collection in NHMW, Wien.

Distribution: Asia (Malaya).

Hosts: *Palaquium maingayi.*

Notes: (1) Schedl 1963h: 263 (to *Liparthrum*). (3) Schedl 1979c: 182 (citation of holotype invalid).

References: (**ds**) Browne 1961c: 70, 1980a: 372. (**tx**) Schedl 1953c: 292, 294, 1963h: 263, 1979c: 182.

***palauensis* (Wood)** 1960a: 17 (*Phloeotrypetus*). Holotype ♀; Caroline Islands (Palau); USNM, Washington.

Figures: Wood 1960a: 17 (outline of adult).

Distribution: Micronesia (Palau in Caroline Islands).

References: (**tx**) Wood, S. L. 1960a: 17.

***pruni* Wood** 1983a: 657. Holotype ♂; Aranza, Michoacan, Mexico; Wood Collection.

Distribution: North America (Michoacan in Mexico).

Hosts: *Prunus serotina.*

References: (**ds**) Atkinson & Equihua 1985b: 231. (**tx**) Wood, S. L. 1983a: 657.

***sabahensis* Bright** 1990: 485. Holotype ♀; Borneo: Sabah, Mt. Kinabalu N. P., Liwagu Trail, 1558–1890 m; CNCI, Ottawa.

Figures: Bright 1990: 486–487 (adult).

Distribution: Indonesia (Borneo).

Hosts: Fallen rotten fruit.

References: (**tx**) Bright 1990: 485.

***squamosum* (Blackman)** 1920a: 53 (*Erineosinus*). Lectotype, sex?; Agricultural College (Starkville), Mississippi [USA]; USNM, Washington, designated by Wood 1982b: 367.

Distribution: North America (Indiana, Mississippi in USA).

Hosts: *Maclura pomifera.*

Notes: (1) Wood 1957c: 399 (to *Liparthrum*).

References: (**hb**) Blackman 1922b: 74–75; Bright 1968a: 637; Chamberlin 1939: 272; Wood, S. L. 1982b: 367. (**ds**) Blackman 1922b: 74–75; Bright 1968a: 637; Chamberlin 1939: 272; Deyrup & Atkinson 1987b: 67; Kleine 1934a: 165; Leng & Mutchler 1927: 52; Wood, S. L. 1982b: 367. (**tx**) Blackman 1920a: 53, 1922b: 74–75, 1928a: 186; Bright 1968a: 637; Chamberlin 1939: 272; Schedl 1960g: 5; Wood, S. L. 1957c: 399, 1982b: 367.

***thevetiae* Wood** 1981: 123. Holotype ♀; Las Piedras Moyotepec, Morelos, Mexico; Wood Collection.

Distribution: North America (Morelos in Mexico).

Hosts: *Thevetia ovata.*

References: (**hb**) Atkinson et al. 1986: 52. (**ds**) Atkinson et al. 1986: 52; Wood, S. L. 1982b: 366. (**tx**) Atkinson et al. 1986: 55; Wood, S. L. 1981: 123, 1982b: 366.

***tinianensis* Wood** 1988b: 193. Holotype ♀; south end of Tinian Island; Wood Collection.

Distribution: Micronesia (Tinian in Mariana Islands).

References: (**tx**) Wood, S. L. 1988b: 193.

Genus *Hypoborus* Erichson

HYPOBORUS ERICHSON 1836: 62. Type-species: *Hypoborus ficus* Erichson, monobasic.

References: (**ay**) Escherich 1923: 468; Fuchs

1912: 5–40; Nobuchi 1969a: 53; Nusslin 1911, 1912. (**hb**) Eichhoff 1881a: 45, 171; Heymons 1920: 103, 1921: 88–89; Lengerken 1939; Tredl 1907: 13; Wood, S. L. 1986a: 54. (**ds**) Wood, S. L. 1986a: 54. (**tx**) Balachowsky 1949a: 151–152; Bedel 1888b: 397, 413; Blandford 1895: 83, 174; Eichhoff 1864b: 35, 1866: 276–277, 1867: 391, 1872: 132, 1878b: 117–118, 1883a: 109, 132; Erichson 1836: 62; Ferrari 1867: 18, 114; Gaubil 1849: 126; Goz 1885: 278; Hagedorn 1910a: 35, 61, 115, 1910d: 29; Hopkins 1914: 123, 133, 1915: 175, 195, 210, 226; Jacquelin du Val & Fairmaire 1868: 106, 108; Lacordaire 1866: 373, 379; Lindemann 1876: 148–168, 345, 1877: 174–187; Lucas 1920: 345; Luigioni 1929: 995; Nobuchi 1969a: 53; Pfeffer 1941: 388, 1955: 148, 1989a: 40; Redtenbacher 1874: 375; Reitter 1894: 38, 47, 56, 1913: 54–60, 1916: 285; Schedl 1934f: 1637, 1958i: 215, 1960h: 5, 1977b: 25; Schilsky 1888: 121; Seidlitz 1891: 151–152; Spessivtsev 1931: 87; Stark 1952: 243–244; Stebbing 1903: 278, 1910: 41; Wachtl 1876: 458; Winkler 1932: 1632; Wollaston 1857: 97–98, 1860: 365; Wood, S. L. 1960a: 16, 1986a: 54.

***ficus* Erichson** 1836: 62. Syntypes, sex?; Sudlich Europa; MNB, Berlin.

Figures: Balachowsky 1949a: 16, 20, 151 (adult), Hill 1983: 495.

Distribution: Africa (Algeria/ Azores Islands/ Morocco/ Tunisia), Asia (Israel/ Turkey), Europe (Bulgaria/ France/ Greece/ Hungary/ Italy/ Sardinia/ Spain/ Switzerland/ Yugoslavia), Madagascar.

Hosts: *Ficus carica*.

References: (**ay**) Fuchs 1912: 31; Nusslin 1911a: 51, 89, 277, 338, 378. (**cn**) Acatay 1943: 61; Balachowsky 1963: 1276; Barbey 1906d; Berlese 1915; Botinica & Colic 1954: 18–23; Chorbadzhievo 1929; Dominguez Garcia-Tejero 1944, 1955: 231; Frohlich & Rodewald 1969: 72; Gentry, J. W. 1965: 128; Goureau 1861: 113; Grandi 1951; Greckin 1956: 1484; Hammad 1961; Hill, D. S. 1983: 570; Kleine 1932a: 296; Koppen 1882: 251; Mourikis & Vassilaina-Alexopoulou 1975: 144; Mumford 1961: 25; Pelekassis 1962; Picard 1921: 17; Pierce, W. D. 1917: 103; Schimitschek 1938c: 2125, 1941: 319–321, 1944: 168, 1952c: 60; Talhouk 1950: 134; Wachtl 1901: 381. (**ec**) Balachowsky 1927b, 1963a: 1276; Berland 1934; Fintzescu 1930: 245–246; Fry 1989: 16; Graham 1969: 876; Halperin & Holzschuh 1984: 25; Heqvist 1967: 68; Illinsky 1917: 1–19; Kleine 1908c: 186, 1909a: 46, 78–80, 1944: 74; Kono & Watanabe 1935: 69; Lichtenstein & Picard 1917: 440–447, 1920: 34–55; Mendel 1986c: 115, 1986d: 130; Novak, P. 1952: 413; Perris 1853: 620, 1856a: 244; Picard 1919: 64; Picard & Lichtenstein 1917: 284–287; Rondani 1873: 151; Ruschka 1916: 25; Silvestri 1911: 394; Sokanovskii 1936: 74; Thompson, J. R. 1943: 56; Thompson, W. R. & Simmonds 1964: 22, 1965: 5; Trabut 1923: 117–124; Wichmann 1916: 22, 1954: 545–546, 1955a: 102. (**hb**) Acatay 1943a: 61–62, 148; Adeli 1972: 14; Adelung 1905; Balachowsky 1927a: 263–264, 1963a: 1276; Barbey 1906d; Beffa 1949, 1961; Berland 1934: 215; Berlese 1915; Bodenheimer 1930, 1935; Bonnemaison 1953; Cecconi 1906: 970–971; Chorbadzhievo 1929; Eggers 1914: 187; Eichhoff 1881a: 45, 171; Frohlich & Rodewald 1969: 72; Grandi 1951; Greckin 1956: 1484; Halperin & Holzschuh 1984: 25; Hammad 1961; Henschel 1895a: 162; Heymons 1920: 103, 1921: 87–89; Hill, D. S. 1983: 570, 1987: 339; Keller 1913: 242; Kleine 1932a: 296; Knotek 1894a: 557; Lengerken 1939: 40, 59, 1954: 76; Lepiney & Mimeur 1932: 45; Lunardoni & Leonardi 1889: 457; Madon 1930: 99; Masi 1934: 97–102; Masutti 1964; Nusslin 1898: 274; Perris 1856a: 244; Peyerimhoff 1919: 251; Pfeffer 1989a: 40; Schedl 1981b: 63; Schimitschek 1944: 168; Silvestri 1911: 394; Stark 1952: 244; Tschorbadjiev 1929: 164; Wachtl 1876a: 458, 1901: 381; Wichmann 1916: 22; Widiez 1932: 415–445; Xambeu 1889: 274; 1892: 473, 1893: 104, 1898b: 274; Zocchi 1959: 103, 105. (**ds**) Acloque 1896; Adeli 1972: 14; Alkan 1964: 367–381; Audras & Schaefer 1957; Baeta Neves 1964: 5; Balachowsky 1927a, 1963a: 1276; Barbey 1906: 93–97; Barthe 1896; Bedel 1888b: 397, 413; Beffa 1949; Bertolini 1872: 200; Blanchere & Robert 1889; Bodenheimer 1930: 266–267, 1935; Bright 1987a: 3; Calwer 1884, 1893; Chorbadzhievo 1929; Dejean 1837: 333; Eggers 1920: 124; Endrodi 1957b: 421, 1958a: 28, 1958b; Escalera 1919: 105; Fauvel 1885, 1897: 66; Ganglbauer 1904; Gaubil 1849: 126; Gemminger & Harold 1872: 2684; Gentry, J. W. 1965: 128; Georghiou 1977: 74; Gozis 1875: 80; Gredler 1866: 373; Gridelli 1930: 393; Hagedorn 1910d: 29; Halperin & Holzschuh 1984: 25; Hammad 1961: 151; Henschel 1895a: 162; Heyden, Reitter, & Weise 1883: 182, 1891: 671, 1906: 709; Hill, D. S. 1983: 570; Holdhaus 1923: 115; Jansson 1940: 63; Kadyrov 1988: 43, 45, 1989; Keller 1913: 243; Kestercanek 1881a: 12; Kleine 1908: 205–208, 225, 227, 1909: 41–50, 76–79, 120–121, 140–141, 1912b: 186, 1913a: 35, 1914a: 16, 1928: 297, 1932a: 296; Knotek 1892a: 37, 1894a: 557; Kobakhidze 1957: 178; Kocher 1961: 247; Koppen 1882: 251; Kraatz 1869: 59; Krausse 1910: 171, 1911: 67; Lacordaire 1866: 380; Langhoffer 1915a: 63, 1915c: 157; Leonardi 1923: 429; Lepiney & Mimeur 1932: 45; Lezhawa 1929: 5; Liebmann 1945: 144; Lucht 1987: 277; Lunardoni & Leonardi 1889: 457; Lundblad 1958: 489; Masutti 1964: 180; Mayet 1904: 93; Moragues 1889: 32; Motschulsky 1866: 403; Mourikis & Vassilaina-Alexopoulou 1975: 144; Mumford 1961: 25; Negru 1966b: 400, 1968a: 455; Normand 1937: 268; Novak, P. 1952: 413; Nusslin 1898: 274, 284; Ortzen 1886: 279; Paganetti-Hummler 1901: 150, 1918: 103; Palm 1962: 145, 1965: 10; Pelekassis 1962; Perris 1876a:

255, 1877a: 415; Peyerimhoff 1919: 251; Pfeffer 1936: 90, 1947d: 126, 1989a: 40; Picard 1919: 89–96; Pierce, W. D. 1917: 103; Ragusa 1924: 115; Redtenbacher 1858: 833, 1874: 374; Reitter 1894a: 56; Rossenhauer 1856: 301; Sahlberg 1903c: 79; Sainte-Claire 1914: 470; Sainte-Claire & Mequignon 1938: 445; Schaufuss 1915: 1229; Schaum 1859: 96, 1862: 101; Schedl 1961b: 186, 1963e: 155, 1964a: 95–97, 1964j: 40, 1967c: 70–75, 1967f: 163, 1968a: 23, 1969g: 285–290, 1971d: 427, 1971f: 146, 1977b: 26, 1978e: 36, 1979i: 290, 1981b: 63; Schilsky 1888: 121, 1909: 187; Schmitz 1898: 157; Seidlitz 1891: 151–152; Sokanovskii 1936: 74; Stark 1927b: 88, 1952: 244; Stein 1868: 114; Stein & Weise 1877: 164; Sturm 1843: 230; Talhouk 1950: 134, 137; Tredl 1907: 13; Tressens 1952: 90; Tschorbadjiev 1928: 138, 1929: 164–165, 179; Umnov 1940: 43; Wachtl 1876a: 458–459; Wichmann 1955a: 102; Winogradov 1926: 266, 275; Wollaston 1857: 98; Zocchi 1959: 103, 105. (**tx**) Acloque 1896; Aube 1862; Balachowsky 1949a: 151, 1963a: 1276; Bedel 1888b: 397, 413; Beffa 1949, 1961; Bertolini 1872, 1899; Calwer 1858; Castelnau 1840; Csiki 1907; Eggers 1914; Eichhoff 1864b: 35, 1866: 277, 1878b: 118–119, 1881a: 45, 171, 1883a: 109, 132; Endrodi 1957b; Erichson 1836: 62; Fauvel 1884b: 315, 1885, 1889; Ferrari 1867: 18, 89, 1967b: 114; Hagedorn 1910a: 61; Hammad 1961; Henschel 1895a: 162; Hill, D. S. 1983: 495; Hopkins 1914: 123–133; Jacquelin du Val & Fairmaire 1868: 106; Kalina 1975; Knotek 1892a: 37; Lacordaire 1866: 380; Lindemann 1877a: 176, 186–187; Lucas 1920: 345; Lucht 1987: 277; Luigioni 1929: 995; Lunardoni & Leonardi 1889: 457; Negru 1966b: 400; Nusslin 1911a: 51, 89, 277, 338, 378; Perris 1877a: 415; Pfeffer 1955a: 148; Portevin 1935: 323; Redtenbacher 1858: 833, 1874: 374–375; Reitter 1894a: 56, 1906: 709, 1913a: 60; Schedl 1934f: 1637, 1953d: 68–69, 1977b: 26, 1981b: 63; Sokanovskii 1936: 73–74; Stark 1952: 244; Wichmann 1916: 22–23; Wollaston 1857: 98, 1865: 249. (**ms**) Lucas 1920: 345.

siculus Ferrari 1867a: 18. Syntypes, sex?; Europe; NHMW, Wien. Synonymy: Ferrari 1867a: 18.
References: (**hb**) Wachtl 1876a: 458. (**ds**) Stein & Weise 1877: 164; Wachtl 1876a: 458. (**tx**) Balachowsky 1949a: 151; Ferrari 1867a: 18.

***tanganyikaensis* Schedl** 1972k: 296. Holotype, sex?; Tanganyika, Usa River, 3900 feet; NHMB, Budapest.
Distribution: Africa (Tanzania).
References: (**tx**) Schedl 1972k: 296.

Genus *Styracoptinus* Wood

STYRACOPTINUS WOOD 1962: 77. Type-species: *Styracopterus murex* Blandford, automatic.
Styracopterus Blandford 1896d: 323. Type-species: *Styracopterus murex* Blandford, monobasic, preoccupied by Traquair 1890: 492.
References: (**tx**) Blandford 1896d: 323; Hagedorn 1910a: 35, 70; Hopkins 1914: 130, 1915c: 226; Lucas 1920: 619; Schedl 1959n: 414–417; Wood, S. L. 1962: 77.
Afrotrypetus Bright 1981a: 113. Type-species: *Afrotrypetus euphorbiae* Bright, original designation. Synonymy: Wood 1983a: 649.
References: (**tx**) Bright 1981a: 113; Wood, S. L. 1983a: 649.
References: (**hb**) Wood, S. L. 1986a: 54. (**ds**) Schedl 1961k: 414; Wood, S. L. 1986a: 54. (**tx**) Schedl 1961k: 414; Wood, S. L. 1962: 77, 1986a: 54.

***cavipennis* (Schedl)** 1969d: 13 (*Styracopterus*). Holotype, sex?; Mozambique; Schedl Collection in NHMW, Wien.
Distribution: Africa (Mozambique).
References: (**ds**) Schedl 1969d: 3. (**tx**) Schedl 1969d: 13–14.

***euphorbiae* (Bright)** 1981a: 114 (*Afrotrypetus*). Holotype ♀; Stellenbosch, South Africa; USNM, Washington.
Figures: Bright 1981a: 115–116 (adult).
Distribution: Africa (South Africa).
Hosts: *Euphorbia dregei*.
References: (**tx**) Bright 1981a: 114–116.

***ferreirai* (Schedl)** 1969d: 12 (*Styracopterus*). Holotype, sex?; Porto Henrique (Maputo); Instuto de Investigacao Cientifica de Mocambique.
Distribution: Africa (Mozambique).
References: (**ds**) Schedl 1969d: 3. (**tx**) Schedl 1969d: 12.

***murex* (Blandford)** 1896d: 324 (*Styracopterus*). Syntypes 3 ♂?; British Bechuanaland; BMNH, London.
Distribution: Africa (Mozambique/ South Africa/ Tanzania/ Zimbabwe).
Hosts: *Acacia* sp., *Spirostachys africana*.
References: (**cn**) Anonymous 1970c: 13. (**ec**) Schedl 1958d: 190. (**hb**) Schedl 1961k: 414–417. (**ds**) Anonymous 1970c: 13; Browne 1980b: 381; Gardner 1957a; Hagedorn 1910d: 28–29; Kleine 1912b: 187, 1914b; Schedl 1961k: 414, 1962h: 57, 1962k: 1066, 1965g: 19, 1969d: 4, 1982: 278. (**tx**) Blandford 1896d: 324; Eggers 1922: 174; Hagedorn 1910a: 70; Hopkins 1914: 130; Lucas 1920: 619; Schedl 1950c: 203, 1957b: 150, 1958d: 190, 1961k: 414–416, 1962k: 1066, 1965g: 19; Wood, S. L. 1962: 77. (**ms**) Lucas 1920: 619.

Genus *Dacryostactus* Schaufuss

DACRYOSTACTUS SCHAUFUSS 1905: 79. Type-species: *Dacryostactus kolbei* Schaufuss, monobasic.
References: (**ay**) Nusslin 1912: 210. (**hb**) Heymons 1920a: 82, 88, 1920b: 97–144; Wood, S. L. 1986a: 55. (**ds**) Wood, S. L. 1986a: 55. (**tx**) Hagedorn 1910a: 35, 69–70, 1910d: 28; Hopkins 1914: 120, 1915c: 226; Schaufuss 1905: 79; Schedl 1961k: 404–413; Wood, S. L. 1986a: 55.

***kolbei* Schaufuss** 1905: 4. Syntypes, sex?; Africa mer. occid. (Wetmansdorp); MNB, Berlin.
Figures: Schedl 1961k: 407 (antenna), 409 (galleries).
Distribution: Africa (Angola/ Namibia).
Hosts: Meliaceae sp.
References: (**ay**) Nusslin 1912: 206. (**ec**) Schedl 1958d: 190. (**hb**) Heymons 1920a: 86–87, 1920b: 97–144; Lengerken 1939: 39–40, 59, 61, 1954: 76; Schedl 1961k: 405. (**ds**) Hagedorn 1910d: 28; Kleine 1912b: 183, 1914b: 317, 1934a: 136; Schedl 1969d: 3. (**tx**) Hagedorn 1910a: 70; Hopkins 1914: 120; Schaufuss 1905: 4, 79; Schedl 1950d: 17, 1958d: 190, 1961k: 405–413, 1979c: 134.

Tribe Polygraphini Chapuis

Polygraphidae
References: Chapuis 1869: 48, 1873: 256.

Polygraphi
References: LeConte 1876: 374; LeConte & Horn 1883: 521.

Polygraphini
References: Lucas 1920: 51; Nobuchi 1985c: 9; Nusslin 1911: 430; Reitter 1913a: 27; Wood, S. L. 1978a: 112, 1982b: 369–391, 1986: 55.

Polygraphina
References: Balachowsky 1949a: 141; Nunberg 1954: 15.

Carphoboridae
References: Nusslin 1912(1911): 430.

Genus *Serrastus* Nunberg

SERRASTUS NUNBERG 1969a: 392. Type-species: *Serrastus ivoriensis* Nunberg = *Chortastus similis* Eggers, monobasic.
References: (**hb**) Wood, S. L. 1986a: 56. (**ds**) Browne 1973c: 26–28; Wood, S. L. 1986a: 56. (**tx**) Browne 1973c: 26–28; Nunberg 1969a: 392; Wood, S. L. 1986a: 56.

***serrifer* (Hagedorn)** 1909a: 739 (*Chortastus*). Holotype, sex?; Kamerun; MNB, Berlin.
Distribution: Africa (Cameroon).
References: (**ds**) Hagedorn 1910d: 24; Kleine 1912b: 181, 1914b: 310. (**tx**) Browne 1973c: 29; Eggers 1923a: 179, 1924: 100; Hagedorn 1909a: 737–739, 1910a: 57; Schedl 1959n: 405, 1977a: 38.

***similis* (Eggers)** 1924: 100 (*Chortastus*). Holotype ♂; Mayumbe, Tshela; MRCB, Tervuren.
Figures: Browne 1973c: 27, Schedl 1959n: 406 (galleries).
Distribution: Africa (Ivory Coast/ Nigeria/ Zaire).
Hosts: *Musanga cercopioides*.
Notes: (1) Schedl 1972q: 261 (to *Serratus*).
References: (**ec**) Schedl 1958d: 187, 1972q: 261. (**hb**) Browne 1963a: 232, 1973c: 28; Roberts 1969b: 123; Schedl 1958d: 187, 192. (**ds**) Browne 1963a: 232, 1973c: 28; Mayne & Donis 1962: 303; Schedl 1962h: 57, 1962k: 1063, 1964f: 617, 1966c: 223, 1967e: 209, 1971g: 190, 1972e: 279, 1977d: 277, 1979b: 415. (**tx**) Browne 1965a: 188, 1973c: 27–28; Eggers 1924: 100; Schedl 1950d: 7, 1959n: 405, 1962k: 1063, 1972q: 261, 1979c: 229.

ivoriensis Nunberg 1969a: 393. Holotype ♂; Bringerville, Ivory Coast; MRCB, Tervuren. Synonymy: Schedl 1972q: 261.
References: (**tx**) Nunberg 1969a: 393; Schedl 1972q: 261.

Genus *Halystus* Schedl

HALYSTUS SCHEDL 1982: 283. Type-species: *Halystus namibiae* Schedl, monobasic.

Phloeographus Wood 1984b: 229. Type-species: *Phloeographus mamibiae* Wood = *Halystus namibiae* Schedl, original designation. Synonymy: Wood 1988b: 188.
References: (**tx**) Wood, S. L. 1984b: 229, 1988b: 188.
References: (**hb**) Wood, S. L. 1986a: 56. (**ds**) Wood, S. L. 1986a: 56. (**tx**) Schedl 1982: 283; Wood, S. L. 1986a: 56, 1988b: 188.

***namibiae* Schedl** 1982: 283. Holotype ♀; Namibia; Schedl Collection in NHMW, Wien.
Distribution: Africa (Namibia).
References: (**tx**) Schedl 1982: 283; Wood, S. L. 1988b: 188.

mamibiae Wood 1984b: 229 (*Phloeographus*). Holotype ♀; SW Africa, Damara, Farm Bethanis 20.25, S-14–24E; NHMW, Wien. Synonymy: Wood 1988b: 188.
References: (**tx**) Wood, S. L. 1984b: 229, 1986a: 56, 1988b: 188.

Genus *Cardroctonus* Schedl

CARDROCTONUS SCHEDL 1965e: 361. Type-species: *Cardroctonus orientalis* Schedl, original designation.
References: (**hb**) Wood, S. L. 1986a: 56. (**ds**) Wood, S. L. 1986a: 56. (**tx**) Schedl 1965e: 361; Wood, S. L. 1986a: 56.

***africanus* (Nunberg)** 1964b: 433 (*Carphoborus*). Holotype, sex?; Ost-Afrika; NHMB, Budapest.
Figures: Nunberg 1964b: 432.
Distribution: Africa (Tanzania).
Notes: (1) Schedl 1965e: 361 (to *Cardroctonus*).
References: (**tx**) Nunberg 1964b: 432–433; Schedl 1965e: 361.

***congonus* Schedl** 1965e: 362. Holotype ♂?; Congo, Mayumbe; Schedl Collection in NHMW, Wien.
Distribution: Africa (Zaire).
References: (**tx**) Schedl 1965e: 362, 1979c: 62.

***orientalis* Schedl** 1965e: 361. Holotype, sex?; Tanganyika, Mpala; Schedl Collection in NHMW, Wien, lost?
Distribution: Africa (Tanzania).
Notes: (1) Specimen labeled as the holotype is missing from its pin.
References: (**tx**) Schedl 1965e: 361, 1979c: 180; Wood, S. L. 1986a: 56.

Genus *Polygraphus* Erichson

POLYGRAPHUS ERICHSON 1836: 57. Type-species: *Hylesinus pubescens* Fabricius = *Dermestes poligraphus* Linnaeus, monobasic.

Lepisomus Kirby 1837: 193. Type-species: *Apate (Lepisomus) rufipennis* Kirby, subsequent designation by Hopkins 1914: 124. Synonymy: Swaine 1918a: 55.
References: (**tx**) Hopkins 1914: 124, 1915c: 226; Kirby 1837: 57, 193; Swaine 1918a: 55.

Spongotarsus Hagedorn 1908: 372. Type-species: *Spongotarsus quadrioculatus* Hagedorn, monobasic. Synonymy: Schedl 1972p: 153.

References: (**tx**) Hagedorn 1908: 372, 1910a: 78, 1910d: 39; Hopkins 1914: 129, 135, 1915c: 226; Schedl 1972p: 153; Wood, S. L. 1986a: 56.

Pseudopolygraphus Seitner 1911: 99, 105. Type-species: *Polygraphus grandiclava* Thomson, subsequent designation by Hopkins 1914: 128. Synonymy: Hopkins 1915c: 222.

References: (**tx**) Endrodi 1957b: 415; Hopkins 1914: 128, 1915c: 222; Seitner 1911: 99–109; Schedl 1955a: 3; Swaine 1918a: 55.

Ozophagus Eggers 1919: 234. Type-species: *Ozophagus camerunus* Eggers, subsequent designation by Wood 1982b: 386. Synonymy: Schedl 1950d: 2.

References: (**tx**) Eggers 1919: 234–235; Schedl 1950d: 2; Wood, S. L. 1982b: 386.

Nipponopolygraphus Nobuchi 1981c: 12. Type-species: *Nipponopolygraphus kaimochii* Nobuchi, original designation. Synonymy: Wood 1992b: 81.

References: (**tx**) Nobuchi 1981c: 12; Wood, S. L. 1992b: 81.

Keys: Schedl 1955a: 5, Murayama 1956: 278, Wood 1982b: 387.

Notes: (3) Beeson 1941: 379–380, 1961: 301, (*Urdugraphus,* nomen nudum, no status, with *U. difficilis* Beeson, nomen nudum = *Polygraphus difficilis* Wood as the only species). Scudder 1893: 158 (*Polygraphus worthini,* a fossil [is not a Scolytidae]).

References: (**ay**) Fuchs 1912: 5–44; Nobuchi 1969a: 54; Nusslin 1911, 1912b, 1912c; Schonherr 1970b. (**bv**) Barr, B. A. 1962: 642; Schonherr 1970b. (**cn**) Balch 1941: 1–4; Barbey 1901: 55; Borodajewskii 1929: 515–521; Butovitsch 1941: 297–360; Escherich 1923: 446–447, 474–475; Inouye & Yamaguchi 1955: 72–94; Judeich & Nitsche 1895: 455–456; Swaine 1913: 87–92, 1924: 1–26. (**ec**) Nickle 1976b. (**hb**) Nusslin 1904: 1–15; Postner 1974: 406; Rohrl 1914: 189–193; Schedl 1958d: 193, 1961k: 358, 1977b: 15, 1981b: 55; Tragardh 1930b: 63, 1930c: 469–480; Wood, S. L. 1982b: 387, 1986a: 56. (**ds**) Beeson 1922: 342–343, 1941: 379–380; Hagedorn 1910d: 37–38; Karaman 1972: 95; Postner 1974: 406; Provancher 1877: 570; Schedl 1961k: 358, 1977b: 15, 1981b: 55; Scheerpeltz & Winkler 1930: 87; Swaine 1909: 140–141; Tredl 1907: 11; Wood, S. L. 1982b: 387, 1986a: 56. (**tx**) Arnett 1960: 1042, 1968: 1042; Balachowsky 1949a: 141–143; Beeson 1941: 379–380; Blandford 1896b: 74; Bright 1978: 202; Bruck 1936a: 38–51, 108–126; Chamberlin 1939: 6, 28, 59, 121–122, 126; Chapuis 1869: 48, 1873: 250; Choo 1983: 43; Choo, Woo, & Nobuchi 1988b; Dodge 1938: 17; Eggers 1940a: 99–108; Eichhoff 1864: 22, 32, 36, 44, 1881a: 37, 122; Erichson 1836: 37; Gardner 1834: 4, 11; Hagedorn 1908: 371, 1909: 137–138, 1910a: 71, 76–77; Hilton 1968: 21–44; Hopkins 1914: 128, 1915c: 195, 222, 226; Kangas 1947: 1–192; Kostin 1973: 250; Krivolutskaya 1958: 124–132; Kurenzov 1941: 72, 137; Lacordaire 1866: 365; LeConte 1868: 169, 1876: 374–376; LeConte & Horn 1883: 521; Murayama 1954: 165–167, 1956: 275–292; Niisima 1909: 132; Nishiguchi 1957: 75–78; Nobuchi 1979b: 2; Pfeffer 1955, 141–145, 1989a: 41; Postner 1974: 406; Reitter 1913a: 54–56; Saalas 1914: 71–81; Schedl 1950d: 2, 1955a: 3–25, 1957d: 1–162, 1961k: 358–391, 1965f: 3–15, 1972p: 153; 1977b: 15–16, 1981b: 55; Schimitschek 1937: 49; Sedlaczek 1912: 305–310; Spessivtsev 1922: 466, 1931: 87; Stebbing 1914; Stolina 1969: 610–627; Swaine 1918a: 39, 55; Tsai & Yin 1965: 323–340; Wood, S. L. 1961a: 44, 1982b: 387, 1986a: 56; Yin & Huang 1981: 558; Yogo 1958: 143–146.

***abietis* Kurenzov** 1941a: 131, 229. Syntypes, sex?; Coast (Primorsky) Region (upper course of the river Suputinka) (Siberia); ISBN, Novosibirsk, USSR.

Figures: Schedl 1955a: 11 (antenna).

Distribution: Asia (Ussuri, Siberia in E USSR).

Hosts: *Abies holophylla.*

Notes: (3) Schedl 1955a: 13 (redescribed).

References: (**hb**) Kurenzov 1948b: 101, 1950d: 202; Stark 1952: 229. (**ds**) Krivolutskaya 1983; Kurenzov 1965, 1967; Murayama 1956a: 276; Stark 1952: 229. (**tx**) Kurenzov 1941a: 131, 229, 1948b: 101; Michalski 1969b: 566; Murayama 1956a: 276, 280; Schedl 1955a: 13; Stark 1952: 229.

***aequalis* Schedl** 1961e: 129. Holotype, sex?; Madagascar, Antaniditra pres Perinet; IRSM, Madagascar.

Distribution: Madagascar.

Hosts: *Ochrocarpos* sp. twigs.

Notes: (3) Schedl 1961e: 129 (named aberration as subsp. *aequalis solidus,* without designation of type material, no status in nomenclature).

References: (hb) Schedl 1977b: 16. (tx) Schedl 1961e: 129, 1977b: 16–17.

***aequatus* Schedl** 1961e: 129. Holotype, sex?; Madagascar, Antaniditra pres Perinet; IRSM, Madagascar.

Distribution: Madagascar.

Hosts: *Ochrocarpos* sp. twigs.

References: (**hb**) Schedl 1977b: 17. (**ds**) Schedl 1977b: 17. (**tx**) Schedl 1961e: 129–130, 1977b: 17.

***afzeliae* Schedl** 1954d: 880. Syntypes ♂♀; Cote d'Ivoire, Languededou; restricted MNHN, Paris by Schedl 1979c: 15.

Distribution: Africa (Ivory Coast/ Zaire).

Hosts: *Afzelia bella, Dialium corbisieri.*

References: (**hb**) Schedl 1961k: 361. (**ds**) Schedl 1961k: 361, 1979b: 415. (**tx**) Schedl 1954d: 870, 880, 1961k: 361, 1979c: 15.

***amoenus* (Schaufuss)** 1891: 10 (*Hylurgus*). Syntypes, sex?; Madagascar; Hamburg Museum, lost.

Distribution: Madagascar.

Hosts: *Leptolaene multiflora, Neodypsis baroni, Ochrocarpos* sp., *Symphonia clusioides.*

Notes: (3) Schedl 1953d: 83 (redescribed male), 1979c: 18 (neotype designation invalid).
References: (**hb**) Anonymous 1892: 164–165; Schedl 1977b: 17. (**ds**) Alluaud 1900: 438–442; Fairmaire 1892b; Hagedorn 1910d: 38; Kleine 1913b: 116, 1914b: 325; Schedl 1970d: 233, 1977b: 17. (**tx**) Fairmaire 1892b; Hagedorn 1910a: 77, 1913b: 254; Murayama 1956: 289; Schaufuss 1891: 10–11, 18; Schedl 1953d: 68, 83–84, 1961e: 128, 1965c: 52, 1970d: 233, 1977b: 17, 1979c: 18.

***angusticollis* Schedl** 1965c: 52. Holotype, sex?; Madagascar Est, dct. Sambava, R. N. XII, Marojejy Ouest, 1600 m; IRSM, Madagascar.
Distribution: Madagascar.
References: (**tx**) Schedl 1965c: 52, 1977b: 19.

***angustus* Tsai & Yin** 1965: 335. Holotype ♀; Muli, Szechwan, China; IZAS, Beijing.
Distribution: Asia (Sichuan in China).
Hosts: *Picea asperata*.
References: (**tx**) Tsai & Yin 1965: 335.

***anogeissi* Wood** 1988b: 194. Holotype ♀; Kirwatti, E. Kanara, Bombay, India; FRI, Dehra Dun.
Distribution: Asia (Burma/ Bengal, Maharashtra in India/ Sri Lanka).
Hosts: *Anogeissus acuminata, Bassia latifolia, Odina wodier*.
Notes: (3) Beeson 1941(1961: 292) (*bassiae*, nomen nudum).
References: (**cn**) Roonwal 1954: 72. (**ds**) Roonwal 1954: 72. (**tx**) Wood, S. L. 1988b: 194.

***apicalis* Schedl** 1957d: 33. Holotype ♂♀; Congo Belge, Kivu, Contrefort Sud du Mt. Kahuzi, 2,200 m; MRCB, Tervuren.
Distribution: Africa (Zaire).
Hosts: *Clitandra* cf *staudii*.
References: (**ds**) Schedl 1961k: 362. (**tx**) Schedl 1957d: 33, 1961k: 362.

***aterrimus* Strohmeyer** 1908b: 69. Syntypes, sex?; Kulu, Himalaya occidentalis: Strohmeyer Collection.
Figures: Stebbing 1914: 522 (adult, galleries).
Distribution: Asia (Himachal Pradesh, Punjab, Uttar Pradesh in India/ Thailand).
Hosts: Pinus griffithii, rare in *P. roxburghii, Cedrus deodara, Abies webbiana*.
Notes: (3) Beeson 1941(1961: 294) (*melanotus*, nomen nudum).
References: (cn) Pierce, W. D. 1917: 52; Stebbing 1903a: 258, 1914: 527. (**ec**) Stebbing 1914: 527. (**hb**) Beaver & Browne 1975: 294; Stebbing 1903a: 258, 1914: 527. (**ds**) Beaver & Browne 1975: 294; Beeson 1961: 292–294; Bhasin, Roonwal, & Singh 1958; Browne 1972b: 19, 1980a: 370; Hagedorn 1910d: 38; Kleine 1913b: 116, 1914b: 271, 276, 1934a: 141; Pierce, W. D. 1917: 52; Stebbing 1903a: 258. (**tx**) Beeson 1922c: 497; Browne 1972: 19; Hagedorn 1910a: 77; Schedl 1967a: 128; Stebbing 1914: 527; Strohmeyer 1908b: 69.
niger Stebbing 1914: 520. Syntypes, sex?; Jaunsar, North-West Himalaya, India; FRI, Dehra Dun. Synonymy: Beeson 1922c: 497.
References: (**cn**) Beeson 1922a; Pierce, W. D. 1917: 75; Stebbing 1914: 520. (**ec**) Beeson 1922c: 497; Chararas 1959c; Stebbing 1914: 520. (**hb**) Beeson 1922c: 497; Stebbing 1914: 520. (**ds**) Beeson 1922a, 1922c: 497; Pierce, W. D. 1917: 75. (**tx**) Stebbing 1914: 520.

***basutoae* Schedl** 1957d: 32. Holotype ♀; Basoutoland; MNHN, Paris.
Distribution: Africa (Basoutoland in South Africa).
References: (**cn**) Anonymous 1970c: 13. (**ds**) Anonymous 1970c: 13; Browne 1970: 540; Schedl 1970h: 180, 1975k: 276. (**tx**) Schedl 1957d: 32, 1961k: 362.

***bicolor* Eggers** 1935c: 302. Holotype, sex?; Congostaat (Lisafa); MRCB, Tervuren.
Distribution: Africa (Ghana/ Nigeria/ Tanzania/ Uganda/ Zaire).
Hosts: *Entandrophragma angolense, Khaya* sp., *Sterculia quinqueloba*.
References: (**hb**) Roberts 1969b: 126. (**ds**) Browne 1984b: 287; Mayne & Donis 1962: 310; Schedl 1959q: 705, 1961k: 363, 1965f: 4. (**tx**) Eggers 1935c: 302; Schedl 1952g: 50, 1959q: 705, 1961k: 362–363, 1965f: 4.
latus Eggers 1935c: 303. Holotype, sex?; Congostaat (Lisafa); MRCB, Tervuren [Eggers cotype in NHMW, Wien]. Synonymy: Schedl 1961k: 363.
References: (**tx**) Eggers 1935c: 303, 1939g: 170, 1939i: 383; Schedl 1961k: 383.

***binotatus* Schedl** 1957d: 41. Holotype ♀; Congo Belge, Yangambi; MRCB, Tervuren.
Distribution: Africa (Zaire).
Hosts: *Carapa procera*.
References: (**ec**) Schedl 1961k: 364. (**hb**) Schedl 1961k: 364. (**ds**) Schedl 1961k: 364. (**tx**) Schedl 1957d: 41, 1961k: 364.

***brunneus* Eggers** 1919: 236. Syntypes 3 ♂♀; Kamerun; 2 ♀ Schreiner Collection in Hamburg Museum, lost, 1 ♂ Eggers syntype in NHMW, Wien.
Distribution: Africa (Cameroon/ Nigeria).
References: (**hb**) Roberts 1969b: 126. (**ds**) Browne 1965a: 188, 1980d: 493; Schedl 1965e: 351, 1967e: 209, 1971g: 191. (**tx**) Eggers 1919: 236–237, 1922b: 167; Schedl 1961k: 364.

***carphoboroides* Eggers** 1919: 237. Holotype ♀?; Kamerun; Eggers Collection, in NHMW, Wien.
Distribution: Africa (Cameroon/ Ivory Coast/ Nigeria/ Zaire).
Hosts: *Afzelia bella*.
References: (**hb**) Roberts 1969b: 126. (**ds**) Cachan 1957: 15; Schedl 1961k: 365, 1964f: 617. (**tx**) Eggers 1919: 237, 1922b: 167, 1932c: 30; Schedl 1950e: 211, 1954d: 870, 1961k: 365, 1965f: 7.

***confusus* Eggers** 1940b: 99. Holotype ♀; Congostaat; Eggers Collection, in NHMW, Wien.
Distribution: Africa (Zaire).
References: (**ds**) Nunberg 1961a: 328. (**tx**) Eggers 1940b: 99; Schedl 1961k: 370.

***congonus* Eggers** 1940b: 100. Holotype ♂; Congostaat; Eggers Collection, in NHMW, Wien.
Figures: Schedl 1961k: 366.
Distribution: Africa (Zaire).
References: (**ec**) Krezal 1959: 611; Smiley & Moser 1984. (**ds**) Schedl 1966c: 223. (**tx**) Eggers 1940b: 100; Schedl 1950d: 2, 6, 1961k: 365–366.

***convexifrons* Wood** 1951b: 32. Holotype ♀; Logan Dry Canyon, Utah [USA]; USNM, Washington.
Figures: Atkinson & Equihua 1988: 99.
Distribution: North America (Alaska/ Alberta, British Columbia, Quebec, Yukon in Canada/ Coahuila in Mexico/ Colorado, New Mexico, South Dakota, Utah in USA).
Hosts: *Picea engelmannii, P. glauca*.
References: (**cn**) Lindgren 1980a: 69. (**ec**) Werner & Holsten 1984. (**hb**) Bright 1976d: 102; Chamberlin 1958: 57–58; Gara & Holsten 1975; Lindgren 1980a: 69; Wood, S. L. 1982b: 370. (**ds**) Atkinson & Equihua 1988: 100; Bright 1976d: 102; Chamberlin 1958: 57–58; Furniss, R. L. & Carolin 1977: 370; Gara & Holsten 1975; Hilton 1968: 34; Keen 1929a: 14; Morgan 1988a; Werner & Holsten 1984; Wood, S. L. 1951a: 127, 1972a: 411, 1982b: 370. (**tx**) Atkinson & Equihua 1988: 99; Bright 1976d: 102; Chamberlin 1958: 57–58; Hilton 1968: 34; Keen 1929a: 14; Wood, S. L. 1951b: 32, 1972a: 411, 1982b: 390.

***coronatus* Eggers** 1919: 237. Holotype ♀; Kamerun; Eggers Collection, in NHMW, Wien.
Distribution: Africa (Cameroon/ French Guinea/ Ghana/ Nigeria).
Hosts: *Albizzia gummifera, Antiaris africana, Khaya grandifolia, Triplochiton scleroxylon*.
References: (**hb**) Roberts 1969b: 126; Thompson, G. H. 1963: 60. (**ds**) Browne 1985b: 291; Schedl 1961k: 366, 1962h: 57, 1962k: 1065, 1965e: 351, 1971g: 191, 1972e: 280; Thompson, G. H. 1963: 60. (**tx**) Eggers 1919: 237, 1922b: 167; Schedl 1954e: 49, 1957d: 10, 1961k: 366.
pygmaeus Eggers 1919: 239. Holotype ♀; Kamerun; Eggers Collection, in NHMW, Wien. Synonymy: Schedl 1954e: 49.
References: (**tx**) Eggers 1919: 239, 1922b: 167; Schedl 1954e: 49, 1955d: 268, 1957d: 10.

***creber* Schedl** 1961e: 128. Holotype, sex?; Madagascar, Betsatraky pres Perinet; IRSM, Madagascar.
Figures: Schedl 1977b: 19 (galleries).
Distribution: Madagascar.
Hosts: *Garcinia verrusosa, Symphonia* cf *urophylla*.
References: (hb) Schedl 1977b: 19. (ds) Schedl 1977b: 19. (**tx**) Schedl 1961e: 128, 1977b: 19.

***difficilis* Wood** 1988b: 194. Holotype ♀; Sitoli, C. Almora; FRI, Dehra Dun.
Distribution: Asia (Himachal Pradesh, Punjab, Uttar Pradesh in India).
Hosts: *Pinus roxburghii*.
Notes: (3) Beeson 1941(1961: 301) (*Urdugraphus difficilis*, nomen nudum).
References: (**tx**) Beeson 1941 (1961: 301); Wood, S. L. 1988b: 194.

***dimorphus* Schedl** 1957d: 39. Holotype ♀; Congo Belge: Hembe-Bitale; MRCB, Tervuren.
Distribution: Africa (Zaire).
Hosts: *Carapa grandiflora, Grewia mildbraedii*.
References: (**ec**) Schedl 1961k: 367. (**hb**) Schedl 1961k: 367. (**ds**) Schedl 1961k: 367. (**tx**) Schedl 1957d: 39, 1961k: 367.

***fulvipennis* Niisima** 1941: 131. Syntypes 2 ♂; Honshu (Yatsugatake-Berg, Prov. Kai), Japan; Nobuchi Collection, Ibaraki.
Figures: Nobuchi 1979b:pl. 3 (adult).
Distribution: Asia (Japan).
Hosts: *Abies veitschii*.
References: (**ds**) Murayama 1954b: 165, 1956a: 276; Nobuchi 1979b: 4, 1985c: 9. (**tx**) Murayama 1954b: 165, 1956a: 276, 279; Niisima 1941: 131; Nobuchi 1979b: 4, pl. 3.

***gracilis* Niisima** 1909: 132, 136. Holotype, sex?; Mihonai, Teshio, Japan; Nobuchi Collection, Ibaraki.
Figures: Schedl 1955a: 23 (antenna).
Distribution: Asia (Japan/ Sakhalin Island and E USSR).
Hosts: *Picea glehni, P. jezoensis, Abies sachalinensis*.
Notes: (3) Schedl 1955a: 23 (original description quoted).
References: (**cn**) Inouye 1955; Inouye & Yamaguchi 1955a: 235. (**ec**) Inouye 1954: 174; Inouye & Yamaguchi 1955a: 235; Inouye et al. 1955: 82; Kabir & Giese 1966a: 891; Tamanuki 1933: 1–54; Yasumatsu & Watanabe 1965: 69. (**hb**) Inouye 1954: 174; Inouye et al. 1955: 82; Krivolutskaya 1956: 830, 1973: 133; Kurenzov 1948b: 112, 1950d: 234; Stark 1952: 221; Strohmeyer 1910a: 223. (**ds**) Kleine 1934a: 141; Kono, H. 1938b: 64, 1938c: 45–46; Kono, H. & Tamanuki 1939: 88, 92; Krivolutskaya 1956: 830, 1973: 133, 1983; Kurenzov 1951b: 17; Murayama 1954b: 200, 1956a: 276; Nobuchi 1979b: 4, 1985c: 9; Stark 1952: 221. (**tx**) Hagedorn 1910a: 78; Krivolutskaya 1956: 830, 1958: 125; Kurenzov 1938a: 133, 1948b: 112; Murayama 1954b: 200, 1956a: 276–280; Niisima 1909: 132, 136, 1941: 130; Nobuchi 1979b: 4, pl. 3; Schedl 1934f: 1636, 1955a: 23; Stark 1952: 221.

***grandiclava* Thomson** 1886: 62. Holotype, sex?; Gallia; not given.
Figures: Pfeffer 1989:pl. 4 (adult), Schedl 1955a: 8 (antenna).
Distribution: Europe (Austria/ Bulgaria/ Czechoslovakia/ Denmark/ France/ Germany/ Hungary/

Norway/ Poland/ Romania/ Sweden/ Switzerland/ W USSR).

Hosts: *Prunus avium*, *P. cerasus*, *P. padus*.

Notes: (3) Schedl 1955a: 8 (redescribed).

References: (**ay**) Escherich 1923b: 481, 513, 549; Fuchs 1912a; Leisewitz 1906: 77; Rohrl 1914c: 189; Scherb 1971; Wichmann 1912a: 9. (**bv**) Barr, B. A. 1969: 642; Grune 1979: 65; Wichmann 1912a: 9–10. (**cn**) Baisch 1954: 302; Barbey 1925: 78, 343; Brandt 1952; Escherich 1923b: 481, 513, 549; Fice 1962: 197–204; Grandi 1951; Heyrovsky 1929: 37–38; Kholodkovskii 1912: 302; Kleine 1932a: 297; Mokrzecki 1925c: 44; Nosek 1951: 106; Nusslin 1913: 259; Pfeffer 1948a: 800; Pierce, W. D. 1917: 75; Rhumbler 1922: 302, 1927: 315; Schimitschek 1937c: 49, 1938b: 114, 119, 1955a: 81, 84, 147, 1955c: 79; Schwerdtfeger 1944a: 174, 1957a: 182; Trappen 1935: 141; Wachtl 1901: 377, 381; Wichmann 1927b: 352. (**ec**) Baisch 1954: 302; Chararas 1959c; Kleine 1908c: 184, 1944: 75; Nosek 1951: 106, 1956: 204, 1959a: 118, 1959b: 87; Nusslin 1927: 315; Pfeffer 1928b; Ruhm 1956b: 3; Rybinski 1897: 61; Schedl 1958d: 189; Schimitschek 1955a: 81, 84, 147; Schwerdtfeger 1944a: 174, 1957a: 182; Wiackowski 1957a: 85. (**hb**) Barbey 1901: 19, 55, 1913, 1925: 78, 343; Charvat 1950; Eggers 1906; Escherich 1923b: 481, 513, 549; Escherich & Ball 1908; Grandi 1951; Gyorfi 1957; Karpinski & Strawinski 1948: 155; Kholodkovskii 1912: 302; Kleine 1932a: 297; Lengerken 1939: 57, 1954: 76; Michalski 1959a: 291; Nosek 1956: 204, 1959a: 118, 1959b: 87; Nunberg 1929c: 119, 1947c: 99, 1960b: 153; Nusslin 1898: 277, 1913: 259, 1927: 315; Pfeffer 1941b: 19; Postner 1974: 407; Rhumbler 1922: 302, 1927: 315; Schedl 1981b: 56; Schimitschek 1955a: 81, 84, 147; Schwerdtfeger 1944a: 174, 1957a: 182; Seitner 1911: 100; Spessivtsev 1913a: 51; Stark 1952: 221; Strohmeyer 1910a: 221; Taschenberg 1901: 311; Wachtl 1901: 277, 381; Wichmann 1927b: 352. (**ds**) Brakman 1966b: 205; Bucking 1932; Buresh & Lazarov 1956; Charvat 1950; Eggers 1904, 1906; Endrodi 1958b; Escherich 1923b: 481, 513, 549, 1932b; Fuchs 1905a; Grune 1979: 65; Hagedorn 1910d: 38; Hansen, K. 1967; Hennig 1954: 261; Heyden, Reitter, & Weise 1906: 710; Horion 1951; Hubenthal 1926: 294; Jamnicky 1960a: 820–831; Karpinski 1932b: 53; Karpinski & Strawinski 1948: 155; Klapperich 1951: 109; Kleine 1912a: 262, 267, 1913a: 34, 1913b: 116, 1932a: 297, 1934a: 141; Kozikowsky 1921: 180; Kozikowsky & Kuntze 1925: 19; Kurir 1947c: 9; Langhoffer 1915c: 157; Leclercq 1971; Lesne 1922: 267; Lomnicki 1913b: 147; Lucht 1987: 276; Muhl 1911: 66; Nunberg 1928b: 88, 103, 1954: 25, 1960b: 153; Nusslin 1898: 277; Pfeffer 1924b: 471, 1928b, 1931b: 75, 1936: 90, 1947e: 2, 1950b: 74, 76, 1989a: 42; Pierce, W. D. 1917: 75; Prossen 1913: 82; Postner 1974: 407; Reitter 1894a: 58, 1894b: 253, 1916: 285; Roubal 1941: 261; Sainte-Claire & Mequignon 1938: 444; Schaufuss 1915: 1228; Schedl 1980a: 12, 1981b: 56; Schilsky 1909: 187; Schimitschek 1938b: 114, 119; Scholz 1929: 258; Stark 1952: 221; Tredl 1907: 11; Wichmann 1927a: 62–63. (**tx**) Balachowsky 1949a: 143–144; Barbey 1901: 19, 55; Charvat 1950; Csiki 1908; Endrodi 1957a: 307, 1957b: 415; Escherich 1923b: 481, 513, 549; Fauvel 1889: 69; Fleischer 1927; Formanek 1907: 25; Fuchs 1912a; Grune 1979: 65; Hagedorn 1910a: 77; Hopkins 1914: 128, 1915c: 222; Karpinski & Strawinski 1948: 155; Koch 1932: 134; Kuhnt 1913: 1052; Lovendal 1898: 83; Lucht 1987: 276; Nunberg 1929c: 119, 1947: 99–108, 1954: 25; Pfeffer 1932b: 16, 1941b: 19, 1947e: 3, 1955a: 142, 1989a: 42, pl. 4; Postner 1974: 407; Quaschik 1953: 35; Reitter 1894a: 58, 1894b: 253, 1913a: 55, 1916: 285; Rhumbler 1922: 302, 1927: 315; Schedl 1934f: 1636, 1939g: 171, 1955a: 8, 1980a: 12, 1981b: 56; Scherb 1971; Schimitschek 1937c: 49, 1955c: 79; Sedlaczek 1912: 310; Sokanovskii 1954: 16; Spessivtsev 1913a: 51, 1922a: 466, 491, 1931: 39; Stark 1952: 221; Stebbing 1908b: 6; Stresemann et al. 1989: 351; Taschenberg 1901: 311; Thomson 1886: 62. (**ms**) Escherich 1932b; Hansen, K. 1967; Michalski 1959a: 291.

cembrae Seitner 1911: 109. Syntypes, sex?; Dachstein; not given. Synonymy: Schedl 1934f: 1636.

References: (**ay**) Wichmann 1912a: 9. (**bv**) Wichmann 1912a: 9–10. (**cn**) Koch 1913: 114. (**ds**) Fuchs 1913. (**tx**) Endrodi 1957b: 415; Fuchs 1913; Koch 1913: 114; Schedl 1934f: 1636, 1955a: 8; Seitner 1911: 109.

***grandis* Nunberg** 1967b: 318. Holotype ♀?; Kivu, Mont Kahuzi, Congo, Km 82; MRCB, Tervuren.

Figures: Nunberg 1967a: 336.

Distribution: Africa (Zaire).

References: (**tx**) Nunberg 1967a: 336, 1967b: 318.

***granulatus* Eggers** 1932c: 29. Holotype, sex?; Congostaat (Haut-Uele, Yebo Moto); MRCB, Tervuren.

Distribution: Africa (Ghana/ Nigeria/ Tanzania/ Uganda/ Zaire).

Hosts: *Carapa grandiflora*, *Entandrophragma* spp., *Khaya* spp.

References: (**hb**) Browne 1963a: 232; Schedl 1961k: 368. (**ds**) Browne 1963a: 232, 1973a: 280, 1980a: 373; Gardner 1957a: 31; Murayama 1954b: 165; Schedl 1959q: 705, 1961k: 368, 1962h: 57, 1962k: 1065, 1964j: 39, 1971f: 148, 1972e: 280, 1977d: 278. (**tx**) Eggers 1932c: 29; Niisima 1941: 125; Roberts 1969b: 127; Schedl 1939g: 366, 1961k: 368, 1972q: 256.

tanzanicus Browne 1970: 549. Holotype ♀; Tanganyika: Moshi; BMNH, London. Synonymy: Schedl 1972q: 256.

References: (**tx**) Browne 1970: 549; Schedl 1972q: 256.

***granulicauda* Schedl** 1939g: 171. Syntypes ♂♀; Nyanza: Ukerewe I.; Conrads Collection, and Schedl Collection in NHMW, Wien.
Distribution: Africa (Ukerewe Island in Tanzania/ Uganda).
Hosts: "Zazana."
Notes: (3) Schedl 1979c: 111 (citation of holotype invalid).
References: (**ds**) Schedl 1961k: 369, 1967e: 209. (**tx**) Schedl 1939g: 171–172, 1961k: 369, 1979c: 111.

***granulifer* Eggers** 1935c: 303. Holotype ♂; Congostaat; Eggers Collection, in NHMW, Wien.
Distribution: Africa (Ghana/ Tanzania/ Uganda/ Zaire).
Hosts: *Carapa grandiflora, Entandrophragma* spp., *Faurea saligna, Khaya* spp., *Turraeanthus africana.*
References: (**ec**) Schedl 1961k: 370. (**hb**) Roberts 1969: 127; Schedl 1961k: 370. (**ds**) Browne 1965: 188, 1973a: 280; Lee 1971: 31; Schedl 1961k: 370, 1962h: 57, 1962k: 1065, 1964j: 39, 1966c: 223, 1967e: 210. (**tx**) Browne 1970: 549; Eggers 1935c: 303–304; Powell, W. 1980: 29; Schedl 1939g: 171, 1961k: 370, 1962k: 1065.

***hoppingi* Swaine** 1925a: 51. Holotype ♀; San Francisco Peak, Arizona [USA]; CNCI, Ottawa.
Distribution: North America (north rim of Grand Canyon, San Francisco Mountains in N Arizona in USA).
Hosts: *Picea engelmannii.*
References: (**cn**) Doane et al. 1936. (**hb**) Chamberlin 1939: 122; Doane et al. 1936. (**ds**) Chamberlin 1939: 122; Furniss, R. L. & Carolin 1977: 370; Hilton 1968: 32; Kleine 1934a: 141; Leng & Mutchler 1933: 51; Wood, S. L. 1982b: 390. (**tx**) Bright 1967b: 679; Chamberlin 1939: 122; Hilton 1968: 32; de Ruette 1970: 112; Swaine 1925a: 51; Wood, S. L. 1951a: 127, 1951b: 32, 1982b: 390.

***horyurensis* Murayama** 1937b: 368. Syntypes, sex?; Horyuri, Prov. Kankyo-sud, Korea; Murayama Collection in USNM, Washington.
Figures: Nobuchi 1979b:pl. 3.
Distribution: Asia (Manchuria in China/ Japan/ Korea/ Taiwan/ Sakhalin Island and E USSR).
Hosts: *Larix dahurica coreana, Abies* spp., *Pinus* sp.
Notes: (3) Schedl 1955a: 14 (original description quoted).
References: (**ds**) Cho 1957; Choo 1983: 43; Choo & Woo 1985: 163; Choo, Woo, & Nobuchi 1988a: 13; Ko 1969: 281; Krivolutskaya 1958: 132, 1983; Murayama 1937a: 2, 1937b: 368, 1940a: 232, 1942a: 55, 1948: 6, 1954b: 165, 1955: 104, 1956a: 276, 281; Nobuchi 1979b: 5, 1985c: 9. (**tx**) Choo 1983: 43; Murayama 1937b: 368, 1940a: 232, 1954b: 165, 1955: 104, 1956a: 276; Niisima 1941: 127; Nobuchi 1979b: 5, pl. 3; Schedl 1955a: 14.

***japonicus* Nunberg** 1956d: 208. Syntypes 1 ♂, 1 ♀; Honshu (Uchimappe-Staatswald bei Aonori); Nobuchi Collection, Ibaraki, automatic.
Figures: Nobuchi 1979b:pl. 3.
Distribution: Asia (Japan).
Hosts: *Abies* sp.
References: (**tx**) Nunberg 1956d: 208 (8 December), 1959c: 168.

granulatus Niisima 1941: 125. Syntypes 1 ♂, 1 ♀; Honshu (Uchimappe-Staatswald bei Aonori); Nobuchi Collection, Ibaraki, preoccupied by Eggers 1932c: 29.
References: (**tx**) Murayama 1956: 282; Niisima 1941: 125; Nunberg 1956: 208, 1959: 158.

uchimappensis Murayama 1956a: 279, 282. Syntypes 1 ♂, 1 ♀; Honshu (Uchimappe-Staatswald bei Aonori); Nobuchi Collection, Ibaraki, automatic, unneeded replacement name.
Notes: (1) Because the only date given on the Murayama 1956a publication is December 1956, it must be assumed that the date was 31 December.
References: (**ds**) Murayama 1956a: 276, 279 (December); Nobuchi 1979b: 12. (**tx**) Murayama 1956a: 276, 279, 282; Nobuchi 1979b: 12, pl. 3, 1985c: 10.

***jezoensis* Niisima** 1909: 135. Syntypes, sex?; Tayoroma and Onupunai in der Prov. Teshio, Tomakomai; Nobuchi Collection, Ibaraki.
Figures: Nobuchi 1979b:pl. 3, Schedl 1955a: 18 (antenna).
Distribution: Asia (Japan/ Korea/ Kamchatka, Sakhalin Island, Siberia in E USSR).
Hosts: *Picea* spp., *Abies nephrolepis.*
Notes: (3) Schedl 1955a: 15 (*rubripes* Eggers, nomen nudum, synonymy), 1955a: 18 (redescribed).
References: (**cn**) Anonymous 1980g; Inouye 1954: 167–180, 1955; Inouye & Yamaguchi 1955a: 235; Kurenzov 1935c: 187, 1956a: 90; Yanagisawa 1952: 105. (**ec**) Inouye & Yamaguchi 1955a: 235; Kamijo 1981; Kurenzov 1934a: 57, 1964: 20; Nishiguchi 1960c: 64–73; Yasamatsu & Watanabe 1965: 69. (**hb**) Krivolutskaya 1956: 830; Kurenzov 1935a: 29, 1948b: 112, 1950d: 203, 1951b: 16; Kurenzov & Kononov 1961: 599; Stark 1952: 224; Strohmeyer 1910a: 223. (**ds**) Anonymous 1980g; Kleine 1913b: 116, 1914b: 256, 1934a: 141; Kono 1938b: 64, 92; Kono & Tamanuki 1939: 88, 92; Krivolutskaya 1956: 830, 1983; Kurenzov 1934a: 57, 1935a: 29, 1935c: 187, 1936a: 111, 1936b: 351, 1938a: 59, 1964: 20, 1965, 1967; Kurenzov & Kononov 1961: 595; Murayama 1956a: 276, 279; Nobuchi 1979b: 6, 1985c: 9; Stark 1952: 224. (**tx**) Eggers 1926b: 135; Hagedorn 1910a: 78; Krivolutskaya 1956: 830, 1958: 125; Kurenzov 1941a: 132, 1948b: 112; Murayama 1954b: 200, 1956a: 276, 279; Niisima 1909: 135, 1910a: 1, 1913a: 3, 1929: 376–381, 1941: 128; Nobuchi 1979b: 6, pl. 3; Schedl 1934f: 1636, 1955a: 18; Stark 1952: 224.

***junnanicus* Sokanovskii** 1959b: 93. Holotype, sex?; Yunnan, China; IZAS, Beijing.
Distribution: Asia (Burma/ Sichuan, Yunnan in China).
Hosts: *Pinus armandii, P. densata, P. khasya, P. yunnanensis, Picea likiangensis*.
Notes: (3) Beeson 1941 (1961: 242) (*burmanicus*, nomen nudum).
References: (**ds**) Kleine 1934a: 141. (**tx**) Beeson 1941 (1961: 242); Sokanovskii 1959b: 93, 95.

***kaimochii* (Nobuchi)** 1981c: 13 (*Nipponopolygraphus*). Holotype ♀?; Shionomisaki, Wakayama; Nobuchi Collection, Ibaraki.
Figures: Nobuchi 1981c: 13.
Distribution: Asia (N Burma/ Japan).
Hosts: *Castanopsis cuspidata, Quercus incana*.
References: (**tx**) Nobuchi 1981c: 13–14.
querci Wood 1988b: 195. Holotype ♀; Mehalkhali [Burma?]; FRI, Dehra Dun. Synonymy: Wood 1992b: 84.
References: (**tx**) Wood, S. L. 1988b: 195, 1992b: 84.

***kasukumbii* Schedl** 1957d: 40. Holotype ♀; Congo Belge: Luki; MRCB, Tervuren.
Distribution: Africa (Zaire).
Hosts: *Anthontha macrophylla, Carapa procera, Cistanthera* sp., *Nesogordonia* sp.
References: (**ec**) Schedl 1961k: 371. (**hb**) Schedl 1961k: 371. (**ds**) Schedl 1961k: 371. (**tx**) Schedl 1957d: 40, 1961k: 371.

***kisoensis* Niisima** 1941: 131. Syntypes, sex?; Honshu (Kiso Kais, Wald Prov., Shinano; Nobuchi Collection, Ibaraki.
Figures: Nobuchi 1966d:pl. 2.
Distribution: Asia (Japan/ Sakhalin Island).
Hosts: *Picea* sp., *Pinus densiflora, P. pumila, Larix leptolepis*.
References: (**cn**) Anonymous 1980g. (**ds**) Anonymous 1980g; Murayama 1948: 2, 1949a: 13, 1954b: 165, 1956a: 276; Nobuchi 1966d: 16, 1979b: 6, 1985c: 9. (**tx**) Murayama 1954b: 165, 1956a: 276, 280; Niisima 1941: 131; Nobuchi 1966d: 16, pl. 2, 1979b: 6.

***kivuensis* Schedl** 1957d: 37. Holotype ♀; Congo Belge: Kivu, Hembe Bitale; MRCB, Tervuren.
Distribution: Africa (Tanzania/ Uganda/ Zaire).
Hosts: *Carapa grandiflora, Faurea saligna, Ficus* sp.
References: (**ec**) Schedl 1961k: 372. (**hb**) Schedl 1961k: 372. (**ds**) Murayama 1951c: 4; Nunberg 1960a: 287; Schedl 1957d: 37, 1961k: 372, 1962k: 1066.

***knochei* Eggers** 1919: 238. Holotype ♀; Kamerun; Eggers Collection, in NHMW, Wien.
Distribution: Africa (Cameroon/ French Guinea).
References: (**tx**) Eggers 1919: 238; Schedl 1961k: 374.

***longifolia* Stebbing** 1902: 255. Holotype ♀; labeled Tons Valley, Tehri Garhwal, Uttar Predesh, India, published as NW Himalayas: Bashahr St.: Taklesh: Jaunsar Div., Tehri-Carhwal; FRI, Dehra Dun.
Figures: Stebbing 1914: 525–526 (all stages, galleries).
Distribution: Asia (Himachal Pradesh, Uttar Pradesh in India).
Hosts: *Pinus roxburghii*.
References: (**cn**) Beeson 1915a: 317–325, 1922c: 497; Huque 1966; Pierce, W. D. 1917: 75; Stebbing 1903a: 225, 1914: 524; Troup 1916: 1–126. (**ec**) Beeson 1922c: 497; Stebbing 1914: 524. (**hb**) Beeson 1915a, 1922c: 497; Champion 1922: 232–246; Gardner 1934: 1–17; Stebbing 1903a: 255, 1909b: 16, 1914: 524; Strohmeyer 1910a: 222. (**ds**) Beeson 1922a: 342–343, 1922c: 497, 1961: 292; Hagedorn 1910d: 38; Kleine 1913b: 116, 1914b: 269, 276, 1934a: 141; Pierce, W. D. 1917: 75; Qadri 1951a: 368, 1951b: 68; Schedl 1969c: 47; Stebbing 1903a: 255. (**tx**) Hagedorn 1910a: 77; Stebbing 1902: 255, 1908b: 10, 1909b: 16, 1911: 85, 1914: 524.
himalayensis Stebbing 1908b: 8. Holotype ♂; labeled Ringali, Chakrata, Uttar Pradesh, published as NW Himalayan Forests, India; FRI, Dehra Dun. Synonymy: Wood 1988b: 189.
References: (**cn**) Beeson 1922a: 342–343; Pierce, W. D. 1917: 75; Stebbing 1914: 522. (**ec**) Beeson 1922c: 497; Chararas 1959c; Stebbing 1914: 522. (**hb**) Beeson 1922c; Stebbing 1914: 522. (**ds**) Beeson 1922a: 342–343, 1922c: 497; Kleine 1913b: 116, 1914b: 276; Pierce, W. D. 1917: 75. (**tx**) Stebbing 1908b: 8, 10, 1914: 522; Wood, S. L. 1988b: 189.

***longipilis* Schedl** 1957d: 35. Holotype ♀; Congo Belge: Hembe-Bitale; MRCB, Tervuren.
Figures: Schedl 1961k: 375 (male, female), 383 (galleries).
Distribution: Africa (Zaire).
Hosts: *Allanblackia floribunda, Garcinia polyantha, Pentadesma lebrunii*.
References: (**ec**) Schedl 1961k: 374. (**hb**) Schedl 1961k: 374. (**ds**) Schedl 1961k: 374. (**tx**) Schedl 1957d: 35, 1961k: 374–376.

***major* Stebbing** 1902: 234. Syntypes ♂♀; labeled Simla, Himachal Pradesh, India, published as NW Himalaya, India; FRI, Dehra Dun.
Figures: Yin & Huang 1981: 560.
Distribution: Asia (Bhutan/ Xizang [Tibet] in China/ Himachal Pradesh, Kashmir, Punjab, Uttar Pradesh in India/ Nepal).
Hosts: *Pinus griffithii*, rare in *Abies fabri, P. garardiana, Picea morinda, Cedrus deodara*.
References: (**cn**) Beeson 1922a; Browne 1968b: 579; Chandry 1966; Chatterjee 1917b: 1–4; Cotes 1893b; Huque 1966; Pierce, W. D. 1917: 52; Stebbing 1903a: 234, 1914: 501. (**ec**) Beaver & Browne 1975: 294; Beeson 1922c: 497; Chararas 1959c;

Stebbing 1914: 501. (**hb**) Beaver & Browne 1975: 294; Beeson 1922c: 497; Browne 1968b: 579; Cotes 1893b; Stebbing 1903a: 234, 1908a: 106, 1910: 32, 1911a: 3, 1914: 501. (**ds**) Beaver & Browne 1975: 294; Beeson 1922a: 342–343, 1922c: 497, 1961: 293; Browne 1968b: 579; Cotes 1893b; Hagedorn 1910d: 38; Kleine 1912b: 183, 1913b: 116, 1914b: 268, 276, 1934a: 141; Pierce, W. D. 1917: 52; Qadri 1951b: 67; Razzauti 1956: 141; Schedl 1973b: 210, 1974a: 85; Stebbing 1903a: 234; Yin & Huang 1981: 560; Zethner 1973. (**tx**) Hagedorn 1910a: 66, 77; Stebbing 1902: 234, 1908b: 6, 1914: 501; Yin & Huang 1981: 560.

***majusculus* Schedl** 1957d: 34. Holotype ♂; Ruanda: Ihembe; MRCB, Tervuren.
Distribution: Africa (Uganda/ Zaire).
Hosts: *Clitandra* cf *staudtii*, *Symphonia globulifera*.
References: (**ec**) Schedl 1961k: 377. (**hb**) Schedl 1961k: 377. (**ds**) Schedl 1961k: 377. (**tx**) Browne 1970: 549; Schedl 1957d: 34, 1961k: 377, 1972p: 153.

symphoniae Browne 1970: 549. Holotype, sex?; Uganda: W. Mengo; BMNH, London. Synonymy: Schedl 1972p: 153.
References: (**tx**) Browne 1970: 549; Schedl 1972p: 153.

***meakanensis* Niisima** 1935: 2. Syntypes, sex?; Mt. Meakan, Hokkaido, Japan; Nobuchi Collection, Ibaraki.
Figures: Nobuchi 1979b:pl. 3.
Distribution: Asia (Japan).
Hosts: *Pinus pumila*.
References: (**ds**) Browne 1966d: 17; Murayama 1948: 2, 1949a: 13, 1956a: 276; Nobuchi 1979b: 7, 1985c: 9. (**tx**) Murayama 1954b: 200, 1956a: 276–281; Niisima 1935: 2, 1941: 126; Nobuchi 1966d: 17, 1979b: 7, pl. 3.

***militaris* (Eggers)** 1919: 235 (*Ozophagus*). Syntypes, sex?; Amani und Daressalaam (Ostafrika); Hagedorn syntypes in Hamburg Museum, lost, Eggers syntypes in NHMW, Wien.
Distribution: Africa (Tanzania/ Zaire).
Notes: (3) Schedl 1979c: 153 (citation of holotype invalid).
References: (**ds**) Nunberg 1960a: 287, 1961a: 329; Schedl 1962k: 1066, 1964e: 68. (**tx**) Eggers 1919: 235, 1922b: 166–167; Schedl 1950d: 2, 1961k: 377, 1962k: 1066, 1979c: 153.

***minutissimus* Schedl** 1972e: 286. Holotype ♀; Ghana, Kumasi, Nhiasu, 330 m; NHMB, Budapest.
Distribution: Africa (Ghana).
References: (tx) Schedl 1972e: 286.

***miser* Blandford** 1894d: 76. Syntypes, sex?; Nikko, Japan; BMNH, London.
Distribution: Asia (Japan/ Korea).
Hosts: *Abies nephrolepis*.
Notes: (3) Schedl 1955a: 24 (original description quoted).
References: (**cn**) Shiraki 1952. (**ds**) Blandford 1894c; Cho 1957; Hagedorn 1910d: 38; Kleine 1913b: 116, 1914b: 256, 1934a: 141; Ko 1969: 282; Murayama 1929b: 2, 1930a: 3, 12, 1937b: 375, 1954b: 166, 1956a: 276; Shiraki 1952. (**tx**) Blandford 1894d: 76; Hagedorn 1910a: 77; Murayama 1930b: 12, 30, 1937b: 375, 1954b: 166, 1956a: 276, 280; Niisima 1941: 130; Schedl 1934f: 1636, 1955a: 24; Stebbing 1908b: 6.

***montanus* Schedl** 1957d: 42. Holotype ♀; Congo Belge: Kivu, Hembe-Bitale; MRCB, Tervuren.
Distribution: Africa (Zaire).
Hosts: "Mukoshi."
References: (**ec**) Schedl 1961k: 378. (**hb**) Schedl 1961k: 378. (**ds**) Schedl 1961k: 378. (**tx**) Schedl 1957d: 42, 1961k: 378.

***musangae* (Schedl)** 1957d: 28 (*Chortastus*). Holotype, sex?; Congo Belge: Yangambi; MRCB, Tervuren.
Figures: Schedl 1957d: 29 (adult).
Distribution: Africa (Zaire).
Hosts: *Musanga cecropioides*.
Notes: (1) Browne 1973c: 17 (to *Polygraphus*).
References: (**ds**) Schedl 1977a: 38. (**tx**) Browne 1973c: 17; Schedl 1957d: 28, 1959n: 403, 1977a: 38, 1979c: 162.

***nanus* Schedl** 1955a: 22. Holotype ♀; Germany: Bavaria: Regensburg; not given in original publication, Schedl Collection in NHMW, Wien (Schedl 1979c: 163).
Figures: Schedl 1955a: 22 (antenna).
Distribution: Europe (Germany).
Notes: (3) A probable synonym of *subopacus* Thomson.
References: (**tx**) Horion 1957: 21; Schedl 1955a: 22.

***natalensis* Eggers** 1919: 238. Syntypes, sex?; Durban in Natal; MNB, Berlin, 4 syntypes in Eggers Collection, in NHMW, Wien.
Distribution: Africa (Angola/ Kenya/ South Africa/ Zaire).
Hosts: *Rhus* sp.
References: (**cn**) Anonymous 1970c: 13. (**ds**) Anonymous 1970c: 13; Beaver & Loyttyniemi 1985a: 66; Ferreira 1965: 1112; Schedl 1959p: 16, 1959q: 705, 1961k: 378, 1962h: 57, 1962k: 1066, 1965h: 111, 1982: 278. (**tx**) Eggers 1919: 238, 1927a: 197; Schedl 1953g: 241, 1955f: 257, 1961k: 378, 1962k: 1066.

***nigrielytris* Niisima** 1913a: 2. Syntypes, sex?; Prov. Teshio (Hokkaido), Japan; Nobuchi Collection, Ibaraki.
Figures: Nakane et al. 1963:pl. 191, Nobuchi 1979b:pl. 3.
Distribution: Asia (Japan/ Kamchatka, Sakhalin Island in E USSR).
Hosts: *Sorbus commixta*.
Notes: (3) Schedl 1955a: 14 (original description quoted).
References: (**hb**) Krivolutskaya 1965a: 231, 1973:

133; Kurenzov & Kononov 1961: 599. (**ds**) Kleine 1934a: 141; Krivolutskaya 1965a: 230, 1973: 133; Kurenzov 1963b: 114, 1965, 1967; Kurenzov & Kononov 1961: 595; Murayama 1954b: 166, 1956a: 276; Nakane et al. 1963: 382; Nobuchi 1979b: 7, 1985c: 9. (**tx**) Krivolutskaya 1958: 129; Murayama 1954b: 166, 1956a: 276; Nakane et al. 1963: 382, pl. 191; Niisima 1913a: 2, 1941: 131; Nobuchi 1979b: 7, pl. 3; Schedl 1934f: 1636, 1955a: 14.

***nobuchii* Choo & Woo** 1989: 57. Holotype ♂; Korea: Mt. Hanla, Jeju province, 1700 m; not given.
Figures: Choo & Woo 1989: 60.
Distribution: Asia (Korea).
Hosts: *Abies koreana*.
References: (**tx**) Choo & Woo 1989: 57.

***oblongus* Blandford** 1894d: 75. Syntypes, sex?; Chiuzenji and Subashiri, Japan; BMNH, London.
Distribution: Asia (Japan).
Hosts: *Abies firma, A. mariesii*.
References: (**cn**) Anonymous 1980g. (**ds**) Anonymous 1980g; Blandford 1894c; Hagedorn 1910d: 38; Kleine 1913b: 116, 1914b: 256, 1934a: 141; Murayama 1949c: 101, 1954b: 166, 1956a: 276. (**tx**) Blandford 1894d: 75; Eggers 1933a: 101; Hagedorn 1904d, 1910a: 77; Murayama 1954b: 166, 1956a: 276–280; Niisima 1910a: 7, 1941: 125; Schedl 1934f: 1636, 1955a: 11; Stebbing 1908b: 6.

***occidentalis* Schedl** 1954d: 879. Syntypes ♂♀; Cote d'Ivoire, Adiopodoume; type restricted to MNHN, Paris specimens by Schedl 1979c: 176.
Distribution: Africa (Ivory Coast).
References: (**ds**) Browne 1980a: 373; Schedl 1966c: 223, 1972e: 280, 1979b: 415. (**tx**) Schedl 1954d: 879, 1961k: 379, 1979c: 176–177.

occidentalis minusculus Schedl 1966c: 236. Holotype ♀; Dimonika, Cote d'Ivoire; MNHN, Paris.
Notes: (3) Either this is a good species or else it is an aberration with no standing in nomenclature, status doubtful.
References: (**tx**) Schedl 1966c: 236.

***orientalis* (Eggers)** 1922b: 166 (*Ozophagus*). Syntypes 2 ♀; Kirumba, Deutsch-Ostafrika; 1 in Methner Collection, 1 Eggers syntype, in NHMW, Wien.
Distribution: Africa (Tanzania/ Zaire).
Notes: (3) Schedl 1979c: 181 (citation of holotype invalid).
References: (**ds**) Schedl 1961k: 379, 1972k: 295. (**tx**) Eggers 1922b: 166–167; Schedl 1950d: 2, 1961k: 379, 1979c: 181.

***parvulus* Murayama** 1956a: 279, 283. Holotype ♀; West Park, Fukuoka City, Japan; Murayama Collection in USNM, Washington.
Figures: Nakane et al. 1963:pl. 191, Nobuchi 1979b:pl. 3.
Distribution: Asia (Japan).
Hosts: *Prunus* sp.
References: (**cn**) Anonymous 1980g. (**ds**) Anonymous 1980g; Murayama 1956a: 276; Nakane et al. 1963: 382; Nobuchi 1979b: 8, 1985c: 9. (**tx**) Murayama 1956a: 276–279, 283; Nakane et al. 1963: 382, pl. 191; Nobuchi 1979b: 8, pl. 3.

***perlaetus* Schedl** 1953d: 84. Lectotype ♂; Madagascar, Mt. d'Ambre; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 189.
Distribution: Madagascar.
References: (**tx**) Murayama 1956: 290; Schedl 1953d: 84, 1977b: 21, 1979c: 189.

***pini* Stebbing** 1914: 522. Syntypes ♂♀; labeled Chogaum Dist., Bashar, Uttar Pradesh, India, published as NW Himalayas, India; FRI, Dehra Dun, automatic.
Figures: Stebbing 1914: 524–525 (galleries).
Distribution: Asia (Himachal Pradesh, Kashmir, Punjab, Uttar Pradesh in India).
Hosts: *Abies webbiana, Cedrus deodara, Picea morinda, Pinus excelsa*.
References: (**cn**) Beeson 1922a; Browne 1968b: 580; Huque 1966; Pierce, W. D. 1917: 69; Stebbing 1914: 522. (**ec**) Beeson 1922c: 497; Chararas 1959c; Stebbing 1914: 522. (**hb**) Beeson 1922c; Browne 1968b: 580; Stebbing 1914: 522. (**ds**) Beeson 1922a: 342–343, 1922c: 497, 1961: 294; Browne 1968b: 580; Pierce, W. D. 1917: 69; Qadri 1951a: 368, 1951c: 238; Schedl 1969c: 48, 1973b: 210, 1974a: 86; Zethner 1973. (**tx**) Eggers 1929e: 55; Stebbing 1914: 522.

minor Stebbing 1903a: 234. Syntypes, sex?; labeled Chogaum Dist., Bashar, Uttar Pradesh, India, published as NW Himalayas, India; FRI, Dehra Dun, preoccupied by Lindemann 1875: 242.
References: (**cn**) Stebbing 1903a: 239. (**ec**) Hughes & Jackson 1958: 76; Vitzthum 1923: 145; Woodring & Moser 1970. (**hb**) Stebbing 1903a: 239, 1908a: 109, 1911a: 6; Strohmeyer 1910a: 222. (**ds**) Hagedorn 1910d: 38; Kleine 1914b: 269, 1934a: 141; Murayama 1956: 280; Razzauti 1956: 141; Stebbing 1903a: 239. (**tx**) Eggers 1929e; Hagedorn 1910a: 66, 77; Stebbing 1903a: 234, 255, 1908b: 8, 1914, 1928: 55.

***poligraphus* (Linnaeus)** 1758: 355 (*Dermestes*). Syntypes, sex?; Europa; presumably Upsala [Sweden].
Figures: Bevan 1987: 115 (adult), Grune 1979: 64, Nobuchi 1979b:pl. 3, Schedl 1955a: 16 (antenna).
Distribution: Africa (introduced in South Africa), Asia (Gansu, Neimeng, Qinhai, Shanxi in China/ Japan/ Sakhalin Island, Siberia in E USSR), Europe (Austria/ Bulgaria/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Hungary/ Italy/ Luxemburg/ Norway/ Poland/ Romania/ Sweden/ Switzerland/ W USSR/ Yugoslavia).

Hosts: *Picea* spp., less common in *Abies* spp., *Larix siberica, Pinus* spp.

Notes: (1) The frequently used spelling, *polygraphus,* is an unjustified, subsequent emendation with no status in nomenclature. (3) Schedl 1955a: 15 (redescribed), 1955a: 18 (*sapporoensis* Eggers, nomen nudum, synonymy). Stephens 1829a: 144 (*Tomicus affinis,* nomen nudum).

References: (**ay**) Escherich 1923b: 449, 481, 573; Feytaud 1950a; Francke-Grosmann 1959; Fuchs 1912a; Hadorn 1933; Hansen, T. E. 1986: 103; Leisewitz 1906: 78; Lekander 1959b: 7, 1959d: 91; Milani 1895: 92; Nunberg 1928a: 140; Nusslin 1911a: 59, 89, 129, 155, 255, 278; Rohrl 1914c: 189; Vogel 1986, 1988; Wichmann 1912a: 9–10. (**bv**) Annila 1975: 11; Annila & Petaisto 1978; Barr, B. A. 1969: 643; Birgersson et al. 1984: 105; Butovitsch 1971; Grune 1979: 65; Kohnle, Francke, & Bakke 1985; Kohnle & Vite 1984b; Leuze 1981; Novak, V. 1962b; Prell 1931: 367; Rozhkov 1970: 139; Schurig, Leyrer, & Kohnle 1985; Schnaider 1955: 233; Schneider-Orelli 1947e: 94; Vite 1980; Wichmann 1912a: 9, 1967; Winter, K. 1980. (**cn**) Anonymous 1948k: 7, 1978w; Austara et al. 1983; Baisch 1954: 301; Barbey 1906a, 1922b, 1924a, 1925: 78; Bejer-Petersen 1978; Bevan 1964b, 1966; Borcea 1924: 221–260; Browne 1968b: 580; Chararas 1961b: 80, 1961c: 92; Chorbadzheivo 1929; Chrystal 1949b: 3–11; Eckstein 1926: 578; Eidmann 1985b; Escherich 1917: 97–115, 1923b: 449, 481, 573, 1930a, 1932a, 1936; Esterberg 1959; F. F. 1900; Fankhauser 1900; Feytaud 1950a; Fice 1961: 173–204; Francke-Grosmann 1954a; Gabler 1955; Galoux 1948b, 1948d, 1948e; Georgescu et al. 1957: 357, 459; Gmelin 1787a; Gradojevic 1933: 789–790, 1940; Grandi 1951; Gyrofi 1950: 384–400, 1959; Hagedorn 1903a; Hanson, H. S. 1940a, 1951: 83–91; Hartig 1861: 330, 1877: 196; Hasek 1955, 1961: 5; Henry 1906; Hess 1898: 369; Hess & Beck 1914: 267, 1927: 322; Hrubek 1973; Jacentkovsky 1933: 271; Jahn 1952a: 98; Jazentkovsky 1922: 7–9; Joly 1976; Joseph 1878 ; Judeich & Nitsche 1895: 447, 518; Juutinen 1960: 24; Kalandra 1944, 1948a, 1948c: 33–38; Kangas 1939, 1949: 168–174; Kataev 1968: 125; Keller 1903b: 49; Kholodkovskii 1912: 302; Kisielowski 1978; Kleiber 1930: 183; Kleiser 1859: 98; Koch 1913: 101; Kontkanen 1932: 61; Kovacevic 1924: 21–22, 1952: 69; Kozikowsky 1929: 253; Krol 1980a; Kruel 1950: 7; Kudler, Pivetz, & Jancarik 1956: 100; Kuhn 1949b: 64; Kurenzov 1950a: 15; Lanz 1975; Lekander 1954b: 11, 1955b: 17; Lekander, M. 1951: 51; Lozovoi 1950c: 308; Maksymov 1950: 554; Marcu 1926c: 62; Martinek 1953a: 372; Mokrzecki 1925c: 44; Mostauskis 1923: 219–240; Mostovsky 1923: 287–288; Muller 1912: 184; Nestertschuk 1930: 176; Nordlinger 1870b: 261; Nosek 1951: 106, 1952b: 98; Novak, V. 1959b: 73; Novak, V., Hrozinka, & Stary 1976: 33; Nusslin 1912a: 293, 1913: 206; Ohnesorge 1955: 279; Pfeffer 1940c: 273, 1947c: 204, 1948c: 800, 1950c: 2; Pierce, W. D. 1917: 69; Popovic 1931: 57; Rakhov 1961: 207–213, 1962; Ratzeburg 1871c: 81; Rhumbler 1922: 302, 1927: 315; Ruhm 1958: 287; Ryschka 1925: 197–202; Ryvkin 1951: 80–81; Saalas 1949: 341, 368; Schedl 1938b: 332; Schimitschek 1932c: 250, 1937c: 49, 1947g: 191, 1949b: 172, 1952a: 208, 1955a: 57, 60, 1955c: 79, 1961a: 154; Schmidt 1881: 44; Schneeberg 1925: 495; Schneider-Orelli 1948a: 77, 1948b: 72; Schneider-Orelli & Kuhn 1948: 518; Schwappach et al. 1929: 186; Schwerdtfeger 1944a: 179, 1950b: 62, 1957a: 185; Sedlaczek 1921: 338; Severin 1902a: 81; Shirskaya 1961: 165; Shishov 1928: 373–375; Sierpinski 1958: 89; Sinreich 1961: 166; Spaic 1956: 88; Strohmeyer 1950: 21; Thalenhorst 1953: 16; Thaler 1898: 390; Titova 1966; Tomic 1957: 207–210; Tragardh 1917: 28, 1927c: 77; Troitskii 1968: 40–43; Tubeuf 1933: 257–357; Vajda 1949: 271; Vite 1984b; Wachtl 1901: 377, 381; Wardle 1929: 322; Weber, H. 1926: 578; Wilke 1931: 641; Wolff & Krausse 1922: 86; Zivojinovic 1950: 299–310; Zolk 1935: 614–640, 1937: 147–172; Zwolfer 1949: 399. (**ec**) Annila 1975: 11,1977; Annila & Petaisto 1978; Baisch 1954: 301; Balazy 1962, 1963a: 69–80, 1964, 1965a, 1968; Balazy & Michalski 1960, 1964a, 1964b; Barbey 1906a, 1927; Belanowskii 1930; Borodin 1967b; Brammanis 1938; Buhl 1989; Bushing 1965: 465; Butovitsch 1971; Chararas 1957c, 1957d, 1958b, 1959a, 1959c, 1959d, 1959e, 1960a: 30; Fleischer 1911; Francke-Grosmann 1931, 1952a, 1959; Fuchs 1914b, 1930, 1937, 1938; Gabler 1947b; Galoux 1947b: 12, 1947c, 1947d; Glauss 1954a: 423; Grossmann 1931a; Gyorfi 1941b, 1952b, 1962: 215; Hellrigl & Schwenke 1985: 48; Heqvist 1955: 95, 1956, 1967: 70; Hirschmann & Wisniewski 1982, 1983; Hubault 1923a; Jamnicky 1957b: 26; Joly 1949a: 7; Kangas 1939, 1946c: 21; Karpinski 1932a: 95; Kielczewski 1976, 1978; Kielczewski & Balazy 1966; Kielczewski, Bodon, & Balazy 1967: 161–163; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1980a, 1980b, 1983; Kleine 1908c: 184, 1909a: 46, 77, 1944: 69; Kobulajiv & Kalandra 1954: 30; Komarek et al. 1931: 1–256; Kraemer 1950b: 380, 1953: 463–512; Krol 1980a; Kuhn 1949a: 279; Kuriv 1947: 1–12; Loos 1893: 174, 1894: 472; Lundberg 1984; Majewski & Wisniewski 1978a: 10; Marsh 1979: 295; Meyer 1918: 178; Michalski 1962b; Michalski & Ratajczak 1989; Nosek 1951: 106, 1952b: 98; Novak, V. 1962b; Nunberg 1930: 201; Nuorteva 1956a: 17, 1957b: 53, 1968a, 1970, 1971; Nusslin 1927: 300; Okolow 1963; Palmen 1946: 194; Pfeffer 1923a: 331, 1932a: 15, 1943b: 179, 1947c: 204, 1950c: 2, 1957a: 196, 1959: 3; Poinar 1975: 167; Redikortzev 1947: 249; Reisch 1972; Rondani 1873: 149; Roubal 1934a: 86; Ruhm 1956b: 3; Rupertsberger 1893a: 215;

Ruschka 1925: 199; Saalas 1917a: 18, 1928: 649, 1930: 118, 1949: 341, 368, 1951: 13; Schimitschek 1930a: 326, 1931b: 487, 1932c: 250, 1952a: 208, 1953b: 531, 1955a: 57, 60, 1964e, 1967; Schneider-Orelli 1947c: 94; Schvester 1950: 50; Schwerdtfeger 1944a: 179, 1950b: 62, 1957a: 185; Sedlaczek 1908: 53, 1935a: 153; Sitowski 1930: 4; Slander 1958: 151; Speyer 1937: 87; Stolina 1959: 216; Sundfor 1979; Szczepanski 1960a: 409; Tenkacova & Mituch 1987; Thalenhorst 1958: 34; Thompson, W. R. 1943: 92; Titova 1966; Tragardh 1925a: 171; Tsankov & Rosnev 1978; Tvermyr 1967: 483; Vietinghoft 1924: 331; Vitzthum 1923: 98; Wettstein 1951: 53, 56; Wichmann 1953b: 59, 1954d: 437, 1955a: 105, 1967; Wilke 1931: 641; Winter, K. 1980; Wisniewski 1979b; Zethner-Moller & Rudinsky 1967: 575–582; Zinovjev 1958: 382; Zumr 1985b. (**hb**) Altum 1881c: 280, 1889c; Annila 1977; Annila & Petaisto 1978; Anonymous 1921g: 56, 1948k: 7; Apfelbeck 1916b: 429–439, 1917; Balazy 1968; Barbey 1901: 19, 54, 1922b, 1924a, 1925: 78; Bargmann 1906; Beffa 1961; Bejer-Petersen 1978; Berg 1827; Boas 1923: 337; Bonnemaison 1953; Borcea 1924; Borodajewsky 1928, 1929b, 1930: 805–811; Browne 1968b: 580; Chararas 1961b: 80; Charvat 1950; Chorbadzhievo 1929; Eckstein 1889, 1897, 1926: 578, 1939b; Eichhoff 1881a: 37, 122, 1882a; Eidmann 1962: 161; Escherich 1923b: 449, 481, 573; Feytaud 1950a; Fuchs 1904a, 1907: 52; Gabler 1955; Gornostaev 1916: 310; Grandi 1951; Gyorfi 1957; Hacker 1885; Hadorn 1933; Hagedorn 1903a; Hansen, T. E. 1976, 1986: 103; Hartig 1861: 330, 1877: 196; Hennings 1908c: 218; Henry 1906; Henschel 1876a: 42, 242, 1885b, 1895a: 141; Hess 1898: 369; Hess & Beck 1914: 267, 1927: 322; Holmgren 1867: 126; Joly 1949a: 7, 1976; Judeich & Nitsche 1895: 447, 518; Kangas 1949c: 168–174; Karpinski 1933b: 24; Karpinski & Strawinski 1948: 155; Kholodkovskii 1889: 269, 1912: 302; Kisielowski 1978; Knotek 1894a: 553; Komarek 1925a: 102; Kraemer 1950b: 380, 1953: 463; Krivolutskaya 1956: 831, 1973: 133; Kurenzov & Kononov 1961: 599; Lekander 1954b: 11, 1959a: 83, 1959b: 7; Lengerken 1939: 57, 1954: 76; Loos 1894: 472, 1913: 406; Louzil 1961: 41; Lunardoni & Leonardi 1889: 430; Maksymov 1950: 554; Michalski 1959a: 291; Nordlinger 1855: 185, 1856: 38, 1869: 334, 1870b: 261; Novak, V., Hrozinka, & Stary 1976: 33; Nunberg 1947c: 99; Nuorteva 1968a, 1970; Nusslin 1898: 277, 1906b: 14, 1913: 206, 1927: 300; Ohnesorge 1955: 279; Orest 1927: 59; Pfeffer 1941c: 5; Postner 1974: 406; Prell 1931: 367; Ratzeburg 1837: 163, 182, 1839: 196, 222, 1871c: 81; Rhumbler 1922: 302, 1927: 315; Rimski-Korsakov et al. 1949: 267; Rozhkov 1970: 139; Rupertsberger 1879: 231, 1880: 227; Saalas 1913a: 68, 81, 1949: 341, 368, 1951: 13; Schedl 1981b: 56; Schimitschek 1930a: 326, 1939c: 272, 1955a: 57, 60; Schmidt 1881: 44; Schnaider & Sierpinski 1955: 60; Schneider-Orelli 1947b: 157; Schwappach et al. 1929: 186; Schwerdtfeger 1944a: 179, 1957a: 185, 1981: 190; Sedlaczek 1921: 338, 1935a: 135, 1981: 190; Seitner 1911: 99; Severin 1902a: 81; Shishov 1928a: 673; Slander 1958: 151; Spessivtsev 1913a: 50, 1923: 200, 1938: 160; Speyer 1937: 87; Stark 1926a: 334, 1927a: 15, 1952: 224; Strohmeyer 1910a: 222; Thalenhorst 1958: 34; Tragardh 1914: 83, 1927c: 77, 1929a: 314, 1930c: 474, 1939b: 149, 188; Tschorbadjiev 1929: 164; Wachtl 1876: 454, 1901: 377, 381; Weber, H. 1926: 578; Winter, K. 1980; Wolff & Krausse 1922: 86; Zinovjev 1958: 382. (**ds**) Allen, A. 1947; Anonymous 1978w; Audras & Schaefer 1957; Bakke & Kvamme 1977; Balazy & Michalski 1960; Barbey 1922b; Barthe 1896; Bau 1888; Bejer-Petersen & Jorum 1977: 20; Berg 1827; Bistrom & Vaisanen 1988: 42; Boas 1923: 337; Borcea 1924; Borchert 1951; Brakman 1966b: 205; Brancsik 1906; Browne 1968b: 580; Buresh & Lazarov 1956; Butovitsch & Heqvist 1947; Charvat 1950; Chorbadzhievo 1929; Chrystal 1937; Debatisse 1945; Dejean 1821, 1825, 1837; Duftschmidt 1825; Eder 1934; Eggers 1904; Escherich 1923b: 449, 481, 573, 1930a; Esterberg 1928, 1959; Fleischer et al. 1923; Frey 1937; Fricken 1889: 281; Fuchs 1904a, 1905a, 1907: 52; Gabler 1949b; Gaubil 1849: 127; Goeze 1777: 130; Gornostaev 1917; Gradojevic 1933; Grouzelle 1905; Grune 1979: 65; Gyllenhal 1827: 620; Gyorfi 1941b; Hagedorn 1904e, 1910d: 38; Hansen, V. 1939, 1951: 83–91, 1956, 1964: 460; Heinemann 1908a; Hennig 1954: 261; Henschel 1895a: 141; Herger 1985a: 79; Heyden 1879: 140; Heyden, Reitter, & Weise 1891: 669, 1906: 710; Holdhaus & Deubel 1910: 145, 160; Holmgren 1867: 126; Horion 1951; Hubault 1923b; Ihssen 1939: 336; Jacentkovsky 1933: 271, 1939: 77; Janovsky & Tegshzhargal 1985: 408; Jazentkovsky 1912: 287; Joly 1976; Judeich & Nitsche 1895: 447, 518; Kaltenbach 1874: 156; Kangas 1948b: 128, 1949c; Karpinski 1925: 216, 1926: 82, 1931: 23, 1932a: 95, 1932b: 52, 1933b: 24, 1948b: 229; Karpinski & Strawinski 1948: 155; Keler 1922b: 210, 1925b: 271; Kersten 1933: 73; Kiefer et al. 1942: 528; Klapperich 1951: 109; Klefbeck & Sjoberg 1960: 230; Kleine 1912a: 128, 262, 264, 267, 1913a: 34, 1913b: 116, 1934a: 141; Kloft & Hinks 1945: 218; Knotek 1892a: 39, 1894a: 553; Koltze 1901: 152; Kontkanen 1932: 61; Kozikowsky 1921: 180; Kozikowsky & Kuntze 1925: 19; Krivolutskaya 1956: 831, 1965: 230, 1973: 133, 1983; Kurenzov 1951b: 16, 1965, 1967; Kurenzov & Kononov 1961: 595; Kurir 1947c: 7; Lacordaire 1866: 366; Langhoffer 1915c: 157; Leclerq 1971; Lekander 1955b: 17, 1959: 1–127; Lesne 1922: 267; Lindberg & Saris 1952: 59; Loos 1913: 406, 1919: 283–288; Lucht 1987: 276; Lunardoni & Leonardi 1889: 430; Lundberg 1974: 92, 1981: 151; Lundblad 1950c: 115; Marcu 1926c: 62; Mequignon 1936: 48;

Michalski 1957: 163; Negru 1966b: 400, 1968a: 455; Nobuchi 1979b: 8, 1985c: 9; Nunberg 1927a: 213, 1928b: 88, 103, 1954: 25; Nuorteva 1971: 67; Nusslin 1898: 277; Orest 1926c: 62; Palm 1946: 120, 1948a: 76, 90; Palmen 1946: 194; Pfeffer 1924b: 471, 1931b: 73, 1935: 159, 1947e: 2, 1948c: 64, 1950b: 73, 1957: 196–207, 1959: 555–560, 1989a: 42; Pierce, W. D. 1917: 69; Pittioni 1943: 174; Platonoff 1943: 141; Poppius 1900: 108; Postner 1974: 406; Prossen 1913: 82; Ratzeburg 1837: 163, 182, 1839: 196, 222; Redtenbacher 1874: 372; Reitter 1894a: 58, 1894b: 253, 1916: 286; Rimski-Korsakov et al. 1949: 267; Roubal 1935a: 37, 1935b: 72, 1941: 261; Rozhkov 1970: 139; Saalas 1913a: 68, 81, 1917a: 18, 1930: 118, 1931: 68; Sahlberg 1900: 105; Sainte-Claire & Mequignon 1938: 444; Schaufuss 1915: 1227; Schedl 1961k: 380, 1980a: 12, 1981b: 56; Schilsky 1909: 187; Schwerdtfeger 1981: 190; Sharp & Fowler 1893: 34; Sick 1939: 110; Snow 1907: 188; Stark 1926a: 334, 1926b: 103, 1926j: 125, 1931a: 24, 1931d: 545, 1952: 224; Stein & Weise 1877: 164; Stephens 1829a: 144, 1830: 355; Strand 1946: 598; Sturm 1826: 102, 1843: 229; Thomson 1865: 357; Tragardh 1914: 83, 1917: 1–28, 1935: 1–268, 1939b: 149, 188; Tredl 1907: 11; Tschorbadjiev 1929: 164; Wachtl 1876a: 454; Westhoff 1882: 237; Wichmann 1927a: 62, 1955a: 105; Wilke 1931: 641; Winter, T. G. 1983: 22; Wiren 1945: 43; Yanovskii 1977a; Yanovskii & Dmitrienko 1983; Yanovskii & Tegshzhargal 1984: 408; Zinovjev 1955: 187; Zivojinovic 1960. (**tx**) Altman 1844; Baer 1911; Balachowsky 1949a: 145; Barbey 1901: 19, 54; Bechstein 1818: 75, 214; Bechstein et al. 1805: 100; Beffa 1961; Boas 1923: 337; Charvat 1950; Csiki 1908; Dejean 1821, 1825; Duftschmidt 1825; Eggers 1914: 41, 1923b: 136, 1929e: 43, 1935: 301; Eichhoff 1881a: 37, 122, 1883a: 102, 124; Endrodi 1957b; Escherich 1923b: 449, 481, 573; Fabricius 1776, 1787: 37, 1792: 365, 1801: 387; Fankhauser 1912a; Fauvel 1887, 1889: 69; Fleischer 1927; Formanek 1907: 25; Fricken 1889: 281; Fuchs 1912a; Gabler 1949b, 1955; Gemminger & Harold 1872: 2677; Gmelin 1790: 1601; Goeze 1777: 130; Grune 1979: 64, 65; Gyllenhal 1813: 349, 1827: 620; Hagedorn 1910a: 77; Hansen, V. 1956, 1964: 460; Henry 1892: 14–15; Henschel 1876a: 42, 242, 1895a: 41; Herbst 1793: 108; Hopkins 1915c: 222; Joly 1976; Judeich & Nitsche 1895: 447, 518; Kalina 1970: 129; Karpinski & Strawinski 1948: 155; Knotek 1892a: 39; Koch 1913: 101, 1928: 99, 1932: 132; Krivolutskaya 1956: 831, 1958: 127; Kurenzov 1941a: 134; Lacordaire 1866: 366; Lekander 1959b: 7; Linnaeus 1758: 355, 1767: 143; Louzil 1961: 108; Lucas 1920: 522; Lucht 1987: 276; Lunardoni & Leonardi 1889: 430; Marsham 1802: 52; Negru 1966b: 276; Nobuchi 1979b: 8, pl. 3; Nordlinger 1848: 251, 1856: 38; Novak, V., Hrozinka, & Stary 1976: 33; Nunberg 1928a: 140, 1930: 200–208, 1954: 25; Nusslin 1911a: 59, 89, 129, 155, 255, 278; Pfeffer 1932b: 16, 1941c: 5, 1947e: 2, 1955a: 144, 1989a: 42, pl. 4; Pomerantzev 1907b: 491; Portevin 1935: 322; Postner 1974: 406; Quaschik 1953: 35; Ratzeburg 1837: 163, 182, 1839: 196, 222; Redtenbacher 1874: 372; Reitter 1894a: 58, 1894b: 253, 1913a: 55–56, 1916: 286; Rey 1892b: 30; Rhumbler 1922: 302, 1927: 315; Rupertsberger 1879: 231, 1880: 227; Saalas 1913a: 68, 81, 1916: 91–95, 1949: 341, 368; Sahlberg 1836: 142; Schedl 1934f: 1636, 1952f: 87, 1955a: 15, 1957b: 150, 1961k: 380, 1962p: 202, 1980a: 12, 1981b: 56; Scherb 1971; Schimitschek 1937c: 49, 1955c: 79; Sedlaczek 1912: 306, 1921: 334–339; Sokanovskii 1928: 667–668, 1960: 677; Spessivtsev 1913a: 50, 1919: 246–250, 1922a: 467, 491, 1923: 200–214, 1925a: 167, 1925b: 14, 1929: 678–682; Stark 1925: 78–81, 1927: 15–19, 1931: 339–343, 1952: 224; Stebbing 1908b: 6; Stephens 1829a: 144, 1829b: 12, 1830: 355; Strand 1960: 171; Stresemann et al. 1989: 351; Thomson 1868: 357. (**ms**) Bevan 1964b; Chararas 1959d; Hartig 1834: 218; Heinemann 1908a; Kozikowsky 1929: 253; Lekander 1959a: 83; Lucas 1920: 522; Michalski 1959a: 291; Schaum 1854: 148; Schedl 1938b: 332; Schurig, Leyer, & Kohnle 1985; Sedlaczek 1902a: 126; Sundfor 1979.

pubescens Fabricius 1792: 368 (*Bostrichus*). Holotype, sex?; Germaniae; UZMC, Copenhagen, 2 syntypes, 1 has been eliminated by transfer, the other automatically became the holotype. Synonymy: Ratzeburg 1837: 182, Balachowsky 1949a: 155.

References: (**ay**) Heeger 1866; Imhoff 1856: 228; Sedlaczek 1902b: 244. (**cn**) Bouvier & Lesne 1922: 826–830; F. F. 1900: 16; Fleischer 1877a; Hansen, T. E. 1976; Hanson, H. S. 1951; Herlein 1878; Merker-Kohlfurt 1896: 84; Thaler 1903: 400. (**ec**) Belanowskii 1930; Elliot & Morley 1907; Fleischer 1877a; Perris 1856a: 244; Rondani 1873: 158; Roubal 1946: 145; Stark 1925b: 80. (**hb**) Bach 1864; Bargmann 1906; Eichhoff 1882c: 705; Fleischer 1877a; Heeger 1866: 533–537; Judeich 1876c: 96, 1876d: 255; Perris 1856a: 244; Taschenberg 1880: 203; Thum 1885: 24. (**ds**) Acloque 1896; Ammann & Knabl 1913, 1923; Andersch 1851; Barthe 1896; Beck 1817; Blanchere & Robert 1889; Brancsik 1871; Calwer 1884, 1893; Chapuis 1869; Chapuis & Candeze 1853; Duftschmidt 1825; Ericson & Sandin 1893; Favre 1890; Fowler 1891; Gozis 1875: 80; Gredler 1866: 372, 1875: 115; Grill 1895: 309; Henry 1907: 188–196; Heyden 1876: 295; Heyden, Reitter, & Weise 1883: 181; Kaltenbach 1874: 686; Kestercanek 1881a: 12; Kraatz 1869: 59; Lacordaire 1866: 366; Lentz 1857: 138; Lesne 1923: 480–481; Lindemann 1884b: 264; Lokaj 1868: 63; Lomnicki 1913b: 147; Matthews & Fowler 1883: 42; Pacher 1865: 151;

Perris 1876a: 254, 1877a: 414; Rapp 1934: 722; Redtenbacher 1858: 829; Reitter 1869b: 153; Rye 1871a: 82, 1871b: 197; Schaschl 1854: 133; Schaum 1859: 95, 1862: 100; Schilsky 1909: 187; Schiodte 1873: 101; Seidl 1876: 4; Seidlitz 1872: 392, 1891a: 561, 1891b: 606; Siebke 1875: 283; Sparre-Schneider 1889: 60; Stein 1868: 113; Stein & Weise 1877: 164; Stephens 1939: 206; Stierlin 1898: 433; Stierlin & Gautard 1871: 292, 1906: 205; Thomson 1859: 146, 1865: 356, 1868: 219; Winter, T. G. 1983: 22. (**tx**) Acloque 1896; Bach 1854, 1864; Balachowsky 1949: 155; Bechstein 1818: 75, 216; Bechstein et al. 1805: 103; Bertolini 1872; Brancsik 1871; Calwer 1858; Castelnau 1840; Chapuis 1869: 48, 1973: 256; Chapuis & Candeze 1853; Doebner 1860; Duftschmidt 1825; Eggers 1929e: 43; Eichhoff 1864b: 33, 1883a: 102; Erichson 1836: 58; Escherich & Escherich 1897; Fabricius 1792: 368, 1801: 394; Fairmaire 1864:fig. 155; Ferrant 1911; Fleischer 1905; Hopkins 1915c: 222; Houlbert 1922a:pl. 1; Illiger 1907: 321; Jablonsky 1785: 121; Jacquelin du Val & Fairmaire 1868: 100; Kuhnt 1913: 1052; Lacordaire 1866: 366; Letzner 1891: 373; Leunis 1886: 178; Lovendal 1889b: 38, 1898: 83; Redtenbacher 1849a: 362, 1849b: 27, 1868: 829; Reitter 1894: 253; Rey 1892b: 30; Schedl 1934f: 1636, 1955a: 15–16; Sedlaczek 1912: 307; Seidlitz 1872: 293, 1891a: 561, 1891b: 606; Spessivtsev 1913: 50, 1922a: 467; Stephens 1939: 206; Stierlin 1898: 433; Taschenberg 1880: 203; Thomson 1859: 46, 1865: 356, 1868: 219, 1871: 394, 1886: 11, 61; Westwood 1840: 39. (**ms**) Gotz 1877.

punctifrons Thomson 1886: 11. Syntypes, sex?; Sweden; not given. Synonymy: Schedl 1955a: 15.

Notes: (3) Schedl 1955a: 15 (*sapporoensis* Eggers, nomen nudum, synonymy). Sokanovskii 1960: 675 (named aberration as var. *bicolor*, no status). Krivolutskaya 1956: 826 (cites var. *krivolutskianus* as a synonym, no status, description not found).

References: (**ay**) Lekander 1959b: 9. (**bv**) Annila 1975: 8; Grune 1979: 67. (**cn**) Barbey 1925: 78; Eidmann 1965c; Esterberg 1959; Juutinen 1960: 23; Mathiesen-Kaarik 1953: 11; Nestertschuk 1930: 176; Palm 1946: 122; Saalas 1949: 341, 370; Titova 1966; Wilke 1931: 669. (**ec**) Annila 1975: 11, 1977; Balazy & Michalski 1964b; Eidmann 1965c; Heqvist 1963: 152; Karpinski 1932a: 103; Kosarievskaya & Mamajev 1962: 450; Lundberg 1984; Mathiesen-Kaarik 1953: 11; Nuorteva 1956a: 17, 1959d: 203, 1968a, 1970, 1971: 69; Ogibin 1973b: 421; Pfeffer 1960: 345; Saalas 1917a: 18, 1928: 652, 1930: 119, 1949: 341, 1951: 16; Sokanovskii 1936: 92; Szczepanski 1960a: 408; Thompson, W. R. 1943: 92; Titova 1966; Wilke 1931: 669; Zinovjev 1957: 331, 1958: 382. (**hb**) Annila 1977; Barbey 1925: 78; Karpinski 1933b: 25; Karpinski & Strawinski 1948: 155; Krivolutskaya 1956: 830; Kurenzov 1948b: 112, 1950d: 234; Lekander 1959b: 9; Lindberg 1963: 243; Nunberg 1947c: 99; Nuorteva 1968a, 1970; Ogibin 1973b: 421; Pfeffer 1989a: 42; Saalas 1913a: 68, 81, 1949: 341, 370, 1951: 16; Spessivtsev 1923: 200, 1928a: 232; Stark 1952: 226; Tragardh 1939b: 190; Zinovjev 1957: 331, 1958: 382. (**ds**) Butovitsch & Heqvist 1947; Ericson & Sandin 1893; Esterberg 1959; Florov 1949: 77; Grill 1895: 309; Grune 1979: 67; Hagedorn 1910d: 38; Hansen 1939; Heyden, Reitter, & Weise 1891: 669; Jacentkovsky 1939: 77; Janovsky & Tegshzhargal 1985: 408; Karpinski 1932a: 103, 1932b: 52–56, 1933b: 25, 1948b: 229; Karpinski & Strawinski 1948: 155; Klefbeck & Sjoberg 1960: 230; Kleine 1913b: 116, 1934a: 141; Krivolutskaya 1956: 830; Kurenzov 1951b: 16; Lundberg 1977, 1979: 31; Murayama 1956a: 276; Nunberg 1954: 25; Nuorteva 1971: 67; Pfeffer 1960: 345, 1989a: 42; Saalas 1913a: 68, 81, 1917a: 18, 1930: 119, 1931: 68; Sahlberg 1900: 105; Schaufuss 1915: 1228; Schilksy 1909: 187; Sokanovskii 1936: 74, 1960; Stark 1931a: 24, 1931d: 545, 1952: 226; Strand 1946: 598; Tragardh 1939b: 190; Wilke 1931: 669; Yanovskii 1989: 64; Yanovskii & Tegshzhargal 1984: 408; Zinovjev 1955: 187, 1958, 1959. (**tx**) Eggers 1914: 42, 188, 1922c: 16; Fauvel 1889; Grune 1979: 67; Hagedorn 1910a: 77; Hopkins 1914: 128; Karpinski & Strawinski 1948: 155; Krivolutskaya 1956: 830, 1958: 126; Kurenzov 1941a: 133–134, 1948b: 112; Lekander 1959b: 9; Murayama 1956a: 276–279; Nunberg 1954: 25; Pfeffer 1955a: 144, 1989a: 42, pl. 4; Reitter 1913: 55; Saalas 1913a: 68, 81, 1916: 91–95, 110–116, 1949: 341, 370; Schedl 1934f: 1636, 1955a: 16; Sokanovskii 1936: 73–74, 1960: 675; Spessivtsev 1922: 467, 491, 1923: 200–214, 1925a: 167, 1925b: 14, 1931: 41; Stark 1952: 226; Thomson 1886: 11.

griseus Eggers 1923b: 136. Syntypes, sex?; Hammarselo (Smaland), Schweden; Eggers Collection, in NHMW, Wien. Synonymy: Schedl 1955a: 16.

Notes: (1) Schedl 1979c: 113 (citation of holotype invalid).

References: (**ay**) Lekander 1959b: 20. (**ec**) Heqvist 1963: 152; Pfeffer 1960: 345. (**hb**) Lekander 1959b: 20; Stark 1952: 226. (**ds**) Klefbeck & Sjoberg 1960: 230; Pfeffer 1960: 345; Stark 1952: 226; Strand 1960: 171. (**tx**) Eggers 1923b: 136; Lekander 1959b: 20; Schedl 1934f: 1636, 1955a: 11, 16, 1979c: 113; Sokanovskii 1954: 226; Stark 1952: 226.

***potens* Schedl** 1965c: 53. Holotype, sex?; Madagascar, Ankarampotsy; MNHN, Paris.

Distribution: Madagascar.

References: (**tx**) Schedl 1965c: 53, 1977b: 21.

***primus* Wichmann** 1915b: 217. Syntypes 2 ♂, 1 ♀; Kamerun; MNB, Berlin.
Distribution: Africa (Cameroon/ Tanzania/ Zaire).
References: (**ds**) Schedl 1961k: 380–381, 1964e: 68, 1964f: 617, 1964j: 39, 1967e: 210, 1975h: 350. (**tx**) Eggers 1920: 239, 1922b: 167; Schedl 1952i: 10, 1961k: 380–381; Wichmann 1915b: 217.

camerunus Eggers 1919: 235 (*Ozophagus*). Lectotype ♂; Kamerun; USNM, Washington, designated by Anderson & Anderson 1971: 8. Synonymy: Schedl 1961k: 380.
References: (**tx**) Anderson, W. H. & Anderson 1971: 8; Eggers 1919: 235, 1922b: 167; Schedl 1950d: 2, 1961k: 380.

opacicollis Eggers 1940b: 100. Holotype, sex?; Congostaat (Dioba); Eggers Collection, in NHMW, Wien. Synonymy: Schedl 1961k: 381.
References: (**tx**) Eggers 1940b: 100; Schedl 1961k: 381.

***proximus* Blandford** 1894d: 75. Syntypes 2, sex?; Sapporo, Japan; BMNH, London.
Figures: Nakane et al. 1963:pl. 191, Nobuchi 1966d:pl. 2, 1979b:pl. 3, Schedl 1955a: 11 (antenna), Tsai & Li 1959: 85.
Distribution: Asia (Heilongjiang in China/ Japan/ Korea/ Sakhalin Island, Siberia in E USSR).
Hosts: *Abies* spp., *Picea jezoensis, P. koraiensis, Pinus* spp., *Larix dahurica, Abies sachalinensis, A. nephrolepis*.
Notes: (3) Kurenzov 1948a: 50 (named form *nigricans*, no status). Schedl 1955a: 11 (redescribed species; cites *ussuriensis*, nomen nudum), Schedl 1979c: 262 (citation of holotype invalid).
References: (**ay**) Sasakawa & Yoshiyasu 1983. (**bv**) Koizumi 1969, 1977; Nuorteva 1956c: 67; Yamaguchi 1963; Yamaguchi et al. 1963. (**cn**) Anonymous 1980g; Inouye 1954: 167–180, 1955, 1963: 160–164; Inouye & Yamaguchi 1955a: 235, 1959: 27; Koizumi 1969, 1977; Konig 1954: 147; Kurenzov 1935c: 187, 1956a: 90; Mamaev 1972; Shiraki 1952; Tamanuki 1940a: 262; Yanagisawa 1952: 105; Zhang et al. 1958: 27. (**ec**) Banne, Mikata, & Kodama 1983: 445; Inouye 1954: 169; Inouye & Yamaguchi 1955a: 235, 1955b; Inouye et al. 1955: 84; Kabir 1981; Kamijo 1981; Kokueva 1900: 569; Kurenzov 1934a: 53, 1964: 20; Yamaguchi 1963: 53–73; Yamaguchi et al. 1963; Yasamatsu & Watanabe 1965: 70. (**hb**) Inouye 1954: 169; Inouye et al. 1953, 1954, 1955: 84; Koizumi 1955: 49; Krivolutskaya 1956: 837, 1973: 133; Kurenzov 1935a: 19, 1948a: 50, 1948b: 101, 1950d: 203; Nuorteva 1956c: 67; Stark 1952: 227; Strohmeyer 1910a: 223; Yamaguchi 1963; Yamaguchi et al. 1963. (**ds**) Anonymous 1980g; Blandford 1894c; Cho 1957; Choo 1983: 44; Choo & Woo 1985: 163; Hagedorn 1910d: 39; Inouye & Koizumi 1953: 107, 1954: 129; Kleine 1913b: 116, 1914b: 256, 1934a: 141; Ko 1969: 282; Koizumi 1955: 52; Kono, H. 1938b: 64, 1938c: 45–46; Kono, H. & Tamanuki 1939: 88, 90; Krivolutskaya 1956: 837, 1958: 127, 1965a: 230, 1973: 133; Krivolutskaya & Kupyanskaya 1970; Krivosheina & Mamaev 1986: 97; Ku 1964; Kurenzov 1934a: 53, 1935a: 19, 1935c: 187, 1936a: 111, 1936b: 351, 1938a: 59, 1951b: 16, 1964: 20; Mandl 1931: 25; Murayama 1929b: 2, 1930a: 1, 1930b: 12, 1936b: 116, 1937b: 369, 375, 1948, 1949a: 13, 1950b: 1292, 1951c: 4, 1954b: 166, 1956a: 276–287; Nakane et al. 1963: 382; Nobuchi 1966d: 17, 1979b: 9, 1985c: 9; Shiraki 1952; Stark 1952: 227. (**tx**) Blandford 1894d: 75; Choo 1983: 44; Eggers 1927d: 121, 1933a: 99; Hagedorn 1904d, 1910a: 77; Krivolutskaya 1956: 837, 1958: 127; Kurenzov 1941a: 134, 1948a: 50, 1948b: 101; Murayama 1930b: 12–17, 1934: 298, 1937b: 369, 375, 1950b: 1292, 1954b: 166, 1956a: 276; Nakane et al. 1963: 382, pl. 191; Niisima 1909: 134, 1910a: 1, 1941: 123; Nobuchi 1966d: 17, pl. 2, 1979b: 9; Schedl 1934f: 1636, 1955a: 11, 1979c: 262; Stark 1952: 227; Stebbing 1908b: 6; Tsai & Li 1959: 85. (**ms**) Mastumura 1931.

laticollis Eggers 1926b: 135. Holotype ♂; Nopporo; Eggers Collection, in NHMW, Wien. Synonymy: Murayama 1956: 287.
References: (**tx**) Eggers 1926b: 135; Murayama 1956: 287; Niisima 1941: 123–124; Schedl 1934f: 1636, 1955a: 11; Sokanovskii 1960: 675

magnus Murayama 1956a: 279, 282. Holotype ♀; Nishimata, Aki County, Kochi pref., Japan; Murayama Collection in USNM, Washington. Synonymy: Wood 1992b: 84.
References: (**ds**) Murayama 1956a: 276, 279, 282; Nobuchi 1979b: 7, 1985c: 9. (**tx**) Murayama 1956a: 276, 279, 282; Nobuchi 1979b: 7; Wood, S. L. 1992b: 84.

***pseudobrunneus* Schedl** 1971e: 7. Holotype ♀; Kamerun; Schedl Collection in NHMW, Wien.
Distribution: Africa (Cameroon).
References: (**tx**) Schedl 1971e: 7.

***quadrioculatus* (Hagedorn)** 1908: 373 (*Spongotarsus*). Holotype, sex?; Sumatra; Hamburg Museum, lost.
Distribution: Indonesia (Sumatra).
References: (**ds**) Hagedorn 1910d: 39; Kleine 1913b: 117, 1914b: 285. (**tx**) Hagedorn 1908: 373, 1910a: 78; Hopkins 1914: 129.

***ruandae* Schedl** 1957d: 34. Holotype ♀; Ruanda: Ihembe; MRCB, Tervuren.
Figures: Schedl 1961k: 381 (adult).
Distribution: Africa (Zaire).
Hosts: *Chrysophyllum africanum, Clitandra* cf *staudtii*.
References: (**ec**) Schedl 1961k: 381. (**hb**) Schedl 1961k: 381. (**ds**) Schedl 1961k: 381, 1979b: 415. (**tx**) Schedl 1957d: 34, 1961k: 381.

***rudis* Eggers** 1933a: 99. Syntypes, sex?; Nitou Tatsienlu, Szechuan, China; Eggers Collection, in NHMW, Wien.

Figures: Schedl 1955a: 19 (antenna).

Notes: (3) Schedl 1955a: 19 (redescribed).

References: (**ds**) Murayama 1937b: 369; Yin & Huang 1981: 560. (**tx**) Eggers 1933a: 99; Murayama 1937b: 369; Schedl 1955a: 19; Yin & Huang 1981: 560.

rudis likiangensis Tsai & Yin 1965: 334. Holotype ♂; Likiang, Yunnan, China; IZAS, Beijing.

Distribution: Asia (Yunnan in China).

Hosts: *Larix potanini, Picea likiangensis, Pinus armandi*.

References: (**tx**) Tsai & Yin 1965: 328–329, 334.

rudis retiventriculus Tsai & Yin 1965: 334. Holotype ♂; Kangding, Szechwan, China; IZAS, Beijing.

Distribution: Asia (Sichuan in China).

Hosts: *Picea asperata*.

Notes: (1) If subspecies are justified, then this one must automatically take the name *rudis rudis*.

References: (**tx**) Tsai & Yin 1965: 328–329, 334.

***rufipennis* (Kirby)** 1837: 193 (*Apate*). Syntypes, sex?; Boreal America, Lat. 65; BMNH, London.

Figures: Bright 1976d: 202, 209, Clarke & Carew 1983c, Kusch 1967: 10, Swaine 1918a:pl. 21 (male).

Distribution: North America (Alaska/ all provinces in Canada/ Arizona, Colorado, District of Columbia, Idaho, Maine, Massachusetts, Michigan, Minnesota, Montana, New Hampshire, New Mexico, New York, North Carolina, North Dakota, Oregon, Pennsylvania, South Dakota, Tennessee, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming in USA). Apparently introduced into South Africa (Schedl 1961k: 380).

Hosts: *Picea engelmannii, P. glauca, P. pungens, P. rubra, P.* spp., *Abies fraseri, Larix laricina, Pinus strobus*.

References: (**ay**) Hatch 1926; Hopkins 1894g; Thomas, J. B. 1957: 4, 1967; Thomas, J. B. & Krywienczyk 1966. (**bv**) Furniss, M. M., Baker, & Hostetler 1976: 1300; Gardner 1957a; Hosking & Knight 1975; Raske, A. K. & Bowers 1983; Rudinsky, Oester, & Ryker 1978. (**cn**) Anonymous 1970c: 13; Baker, W. L. 1972: 264; Balch 1941; Becker, Abbott, & Rick 1956: 664; Beckwith 1972; Bongberg 1957; Browne 1968b: 580; Chamberlin 1924; Chenier & Philogene 1989a; Clarke & Carew 1983a, 1983c, 1984b, 1985: 19, 1986: 20, 1987, 1988: 32; Connola et al. 1956; Craighead 1924: 41; Doane et al. 1936; Drooz 1985: 352; Eidmann & Klingstrom 1976: 238; Fall & Cockerell 1907: 217; Felt 1906: 386, 1924: 269, 1926: 247–248, 269, 1930a: 247, 269; Felt & Rankin 1932: 406; Fitch 1858; Gahan 1927: 1–39; Graham 1922b; Herrick 1935: 138; Hewitt 1914: 501–518, 1917: 13; Hopkins 1893c, 1894c, 1894d, 1894g: 280, 1897c: 42, 1901b: 33, 1904a: 25; Hough 1878: 163; Johnson 1897: 72–73; Keen 1952c: 166; Kondo & Moody 1978: 64, 73; Kondo & Taylor 1985: 32; Lindgren 1980a: 69; Lindquist, O. H. & Syme 1981: 91; Magasi 1987: 59; Massey & Wygant 1954: 21; Merkel & Kowal 1956: 7; Moody, B. H. 1988: 63; Mumford 1960: 38; Packard 1890: 721; Pierson 1923: 26, 1927: 80; Rodary 1959: 852; Rose, A. H. & Lindquist 1977: 119, 1980: 59; Ruppel 1967: 81; Schooley & Pardy 1981; Schuder 1969: 76; Schwarz 1938b: 144, 1938c: 288; Singh & Clarke 1982b: 2; Smith, G. J. & Melvin 1974a, 1974b; Sterner & Davidson 1983: 14; Swaine 1910d: 42, 1913: 41–43, 89, 1918a: 55, 1918b: 860, 1924d: 9, 1929: 145–146, 1933: 29; Swaine & Craighead 1924: 1–27; Swaine et al. 1924: 18; Syme & Nystrom 1988: 86; Thomas, J. B. 1958: 394; Titus 1987: 15; Tripp, Stevenson, & Baranyay 1967: 100; Walker 1912: 61; Watson 1928: 613–631. (**ec**) Ashmead 1893b; Ashraf & Berryman 1969: 13; Beanlands 1967; Beckwith 1972b; Blackman 1919: 49; Blackman & Stage 1918: 42; Bugabee 1956; Burks 1979: 798; DeLeon 1934a; Felt 1906: 386; Furniss, R. L. & Carolin 1977: 370; Gardiner 1957a; Graham 1922b; Grissell 1979: 765; Heqvist 1957b: 44; Hilton 1968: 29; Hirschmann 1978c; Hopkins 1891b: 257, 1897c: 42, 1901b: 33; Knight 1961: 212; Langor 1985; Marsh 1979: 158; Massey & Wygant 1954: 21; Matthews 1970; Morley 1939: 244; Pierce 1908: 386; Price 1966; Reid 1955: 312, 1957b: 6; Rodary 1959: 852; Ross, D. A. 1968; Ruschka 1925: 197; Stewart 1965: 926; Swaine 1921: 345, 1924d: 9, 1925c: 264; Thomas, J. B. 1958: 394; Thompson, W. R. 1943: 92; Thompson, W. R. & Simmonds 1964: 34, 1965: 73; Tomalak, Welch, & Galloway 1989a, 1989b; Werner & Holsten 1984. (**hb**) Anderson, R. F. 1960: 241; Baker, W. L. 1972: 264; Beal & Massey 1945; Beckwith 1972b; Beckwith, Wolff, & Zasada 1977; Blackman 1919a; Blackman & Stage 1918; Boutin 1926, 1927; Bright 1976d: 103; Browne 1968b: 580; Chamberlin 1939: 122–123, 1958: 56–58; Chittenden 1890; DeLeon et al. 1934; Dillon & Dillon 1961: 806; Doane et al. 1936; Drake 1921; Eidmann & Klingstrom 1976: 238; Felt 1906: 386, 1926: 247–248, 269, 1930a: 247, 269; Felt & Rankin 1932: 406; Fitch 1858; Furniss, M. M. et al. 1979: 1357; Furniss, R. L. & Carolin 1977: 370; Gara & Holsten 1975; Gobeil 1936b, 1936c; Herrick 1935: 138; Hilton 1968: 29; Hopkins 1892: 257, 1893a: 141, 1893b: 212, 1893c: 129, 1894g, 1901b: 33, 1904a: 25; Keen 1952c: 166; Knight 1961: 213; Lindgren 1980a: 69; Massey & Wygant 1954: 21; Morley 1939: 244; Mott 1954: 1; Packard 1890: 721–722; Pierce 1907: 293; Pierson 1923: 26, 1927: 80, 121; Raske, A. K. & Bowers 1983; Reid 1955: 312–319; Rose, A. H. & Lindquist 1977:

120, 1980: 59, 1980d; Rudinsky, Oester, & Ryker 1978; Schwarz 1889d: 176; Simpson 1929b: 146–151; Strohmeyer 1910a: 222; Swaine 1918a: 551, 1924d: 9, 1929: 145; Swaine et al. 1924:pl. 21; Watson 1928: 618; Wolcott & Montgomery 1933: 165; Wood, S. L. 1982b: 387; Yang 1989c. (**ds**) Anderson, R. F. 1960: 241; Anonymous 1926c: 515, 1970c: 13; Ashworth 1977, 1980; Ashworth & Brophy 1972: 2984; Ashworth, Clayton, & Bickley 1972: 183; Ashworth & Cvancara 1983; Ashworth et al. 1981; Austara et al. 1983; Bain 1974: 15; Beal & Massey 1945: 73–74; Beanlands 1967; Beaulne 1956; Beckwith 1972a; Bedard 1938a; Blatchley & Leng 1916: 661; Bongberg 1957; Bright 1971a: 125, 1976d: 103; Brown 1932: 209, 1934; Browne 1968b: 580; Chamberlin 1925, 1939: 122–123, 1958: 56–58; Chittenden 1890; Cockerell et al. 1907; Currie 1905; Deyrup 1968b: 4; Dodge 1938; Drake 1921: 201; Drooz 1985: 352; Eidmann 1935; Elias 1982a, 1982b, 1982d, 1983, 1985: 39; Elias, Short, & Clark 1986; Evans, D. 1983: 35; Evans, D., Lowe, & Hunt 1978; Felt 1926: 247–248, 269, 1930a: 247, 269; Felt & Rankin 1932: 406; Furniss, M. M. & Furniss 1972; Furniss, R. L. & Carolin 1977: 370; Gara & Holsten 1975; Gardiner, F. 1879: 211–213; Gast et al. 1989: 385; Gautreau 1974: 6; Hagedorn 1910d: 39; Hamilton 1894a: 35; Henshaw 1885: 149; Hilton 1968: 29; Hoffmann 1956: 91; Hopkins 1893a: 141, 145–146; Houghton 1905; Keen 1929a: 14, 1952c: 166; Kleine 1913b: 116, 1914b: 385, 1934a: 141; Kusch 1967; Lacordaire 1866: 363; Leng 1920: 338; Leonard 1928: 515; Lindquist, O. H. & Syme 1981: 91; MacGillvray, A. & Houghton 1902; McComb et al. 1953: 3; Melsheimer 1853: 88; Merkel & Kowal 1956: 7; Miller, R. F. & Morgan 1982; Miller, R. F., Morgan, & Hicock 1985: 501; Morgan, A. V. & Morgan 1979, 1980: 1110; Morgan, Anne, Morgan, & Elias 1985; Mumford 1960: 38; Nunberg 1961b: 609; Patterson & Hatch 1945: 149; Price 1966: 239; Proctor 1946: 206; Provancher 1877: 571; Ross, D. A. 1968; Ruppel 1967: 81; Schuder 1969: 76; Schwert & Morgan 1980; Schwert et al. 1985; Smith, G. J. & Melvin 1974a, 1974b; Still, Tidsbury, & Melvin 1974a, 1974b; Susut & Melvin 1974; Swaine 1909: 141, 1913: 89, 1919b: 7; Syme & Nystrom 1988: 86; Van Dyke 1924: 25; Werner & Holsten 1984; Wickham 1896a: 309; Williams, N. E. et al. 1981; Winter, T. G. 1983: 22; Wolcott & Montgomery 1933: 165; Wood, S. L. 1951a: 127, 1972a: 411, 1982b: 387. (**tx**) Beal & Massey 1945: 73–74; Beckwith 1972a, 1972b; Benoit 1985: 206; Blatchley & Leng 1916: 661; Bright 1976d: 103, 202, 209; Bruck 1936a: 110; Chamberlin 1939: 122–123, 1958: 56–58; Clarke & Carew 1983c; Dillon & Dillon 1961: 801, 805; Dodge 1938: 15, 24; Evans, D. 1983: 35; Gemminger & Harold 1872: 2674; Hagedorn 1910a: 78; Hilton 1968: 29; Hopkins 1914: 124, 1915c: 222; Keen 1929a: 14; Kirby 1837: 193; Kusch 1967: 10; Lacordaire 1866: 363; LeConte 1857: 22, 1868: 168–169, 1873: 336, 1876: 376, 1878c: 472; LeConte & Horn 1883: 522; Lindquist, O. H. & Syme 1981: 91; Mannerheim 1853: 237; Pardy 1974, 1977; Provancher 1877: 570–571; Rose, A. H. & Lindquist 1980: 59; Schedl 1957b: 150, 1961k: 380, 1962p: 202, 1967a: 120; Schwarz 1889b: 149, 1889d: 176; Swaine 1918a: 55–56, 1919b: 7 part E, 1925a: 51; Syme & Nystrom 1988: 86; Thomas, J. B. 1957: 4, 1967; Thomas, J. B. & Krywienczyk 1966; Titus, Meikle, & Harrison 1985: 108; Wood, S. L. 1966: 29, 1972a: 411, 1982b: 387. (**ms**) Beanlands 1966; Chamberlin 1931; Chenier & Philogene 1989a; Swaine 1925c: 264.

nigriceps Kirby 1837: 194 (*Apate*). Holotype ♂; Boreal America, Lat. 65; BMNH, London. Synonymy: LeConte 1868: 169.

References: (**hb**) Wolcott & Montgomery 1933: 165. (**ds**) Blatchley & Leng 1916: 662; Lacordaire 1866: 363; Leng 1920: 338; Melsheimer 1853: 88; Swaine 1909: 141; Wolcott & Montgomery 1933: 165. (**tx**) Blatchley & Leng 1916: 662; Hopkins 1915c: 222; Kirby 1837: 194; Lacordaire 1866: 363; LeConte 1868: 168, 1873: 336, 1876: 376; Swaine 1909: 141.

brevicornis Kirby 1837: 194 (*Apate*). Holotype ♀; Boreal America, Lat. 65; BMNH, London. Synonymy: LeConte 1868: 169.

References: (**ds**) Blatchley & Leng 1916: 662; Hagedorn 1910d: 38; Henshaw 1885: 149; Kleine 1913b: 116; Lacordaire 1866: 363; Leng 1920: 338; Melsheimer 1853: 88; Swaine 1909: 141. (**tx**) Blatchley & Leng 1916: 662; Gemminger & Harold 1872: 2674; Hagedorn 1910a: 77; Hopkins 1915c: 222; Kirby 1837: 194; Lacordaire 1866: 363; LeConte 1868: 177, 1873: 336, 1876: 376; Swaine 1909: 141, 1918a: 56.

saginatus Mannerheim 1853: 237. Holotype ♀; Kenai Peninsula, Alaska; MZU, Helsinki. Synonymy: LeConte 1868: 169.

References: (**ds**) Lacordaire 1866: 366; Leng 1920: 338; Swaine 1909: 141. (**tx**) Lacordaire 1866: 366; LeConte 1857: 22, 1868: 168, 1876: 376; Mannerheim 1853: 237; Swaine 1909: 141, 1918a: 55; Wood, S. L. 1969c: 116.

***rufus* (Eggers)** 1936e: 83 (*Spongotarsus*). Holotype ♀?; Java, Batoerraden; ZMA, Amsterdam [1 Eggers cotype, in NHMW, Wien].

Distribution: Indonesia (Java).

References: (**tx**) Eggers 1936e: 83–84.

***sachalinensis* Eggers** 1926b: 135. Syntypes, sex?; Aihama auf Sachalin und Sapporo, Japan; 2 Eggers syntypes, in NHMW, Wien.

Distribution: Asia (Heilongjiang in China/ Japan/ Sakhalin Island, Ussuri in E USSR).

Hosts: *Pinus koraiensis*, *Picea obovata*, *P. jezoensis*, *P. koraiensis*, *Larix gmelinii*.

Notes: (1) Schedl 1955a: 21 (= *subopacus* Thomson),

1979c: 218 (citation of holotype invalid), Tsai & Yin 1965: 2 (a good species).

References: (**cn**) Kurenzov 1935c: 187. (**ec**) Kurenzov 1934a: 54. (**hb**) Krivolutskaya 1956: 831, 1973: 133; Kurenzov 1935a: 19, 29, 1950d: 234; Kurenzov & Kononov 1961: 599; Qui & Huo 1958: 267; Stark 1952: 222. (**ds**) Arnoldi et al. 1955: 679; Kono, H. & Tamanuki 1939: 88, 92; Krivolutskaya 1956: 831, 1965a: 229, 1973: 133, 1983; Kurenzov 1934a: 54, 1935a: 19, 29, 1935c: 187, 1936a: 111, 1936b: 351, 1938a: 61, 1941: 135–137, 1951b: 16, 1965, 1967; Kurenzov & Kononov 1961: 595, 599; Murayama 1954b: 200, 1956a: 276; Stark 1952: 222. (**tx**) Eggers 1926b: 135; Krivolutskaya 1956: 831, 1958: 127; Kurenzov 1941a: 135; Murayama 1956a: 276; Nissima 1941: 130; Schedl 1934f: 1636, 1955a: 21, 1979c: 218; Stark 1952: 222; Tsai & Yin 1965: 2.

sachalinensis frontalis Kurenzov 1941a: 136. Holotype, sex?; Ussuri; Kurenzov Collection. Synonymy: Schedl 1955a: 21 (= *subopacus* Thomson).

References: (**tx**) Kurenzov 1941a: 136; Schedl 1955a: 21.

***scalptor* Schedl** 1965c: 54. Holotype ♀; Madagascar, Montagne d'Ambre, Grand Plateau; Schedl Collection in NHMW, Wien.

Distribution: Madagascar.

Notes: (1) Schedl labeled the female holotype as a male.

References: (**tx**) Schedl 1965c: 53–54, 1977b: 21.

***seriatus* Reitter** 1913a: 56. Syntypes, sex?; Ostsibirien: Sajan bei Ussinsk, USSR; NHMB, Budapest.

Distribution: Asia (E USSR).

Hosts: *Pinus sylvestris, Larix sibirica*.

References: (**hb**) Stark 1952: 229. (**ds**) Pfeffer 1935: 158; Stark 1931d: 545, 1952: 229. (**tx**) Eggers 1914: 41, 1922c: 12–18, 1927d: 121; Reitter 1913a: 56; Schedl 1934f: 1636; Sokanovskii 1954: 16; Stark 1952: 229.

***setosus* Schedl** 1979j: 128. Holotype ♀; India; FRI, specimen on loan to Schedl (in NHMW, Wien).

Distribution: Asia (Himachal Pradesh, Punjab, Uttar Pradesh in India).

Hosts: *Pinus griffithii, P. roxburghii*.

Notes: (3) Beeson 1941(1961: 294) (*setosus*, nomen nudum).

References: (**ds**) Beeson 1961: 294; Kleine 1934a: 141. (**tx**) Schedl 1979j: 128.

***shariensis* Niisima** 1941: 127. Syntypes, sex?; Hokkaido (Shari Prov. Kitami); Nobuchi Collection, Ibaraki.

Figures: Nobuchi 1979b:pl. 3 (adult).

Distribution: Asia (Japan).

Hosts: *Prunus ssiori*.

References: (**ds**) Murayama 1956a: 276; Nobuchi 1979b: 10, 1985c: 10. (**tx**) Murayama 1954b: 200, 1956a: 276, 281; Niisima 1941: 127; Nobuchi 1979b: 10, pl. 3.

***sinensis* Eggers** 1933a: 100. Syntypes, sex?; China: Szechuan, Tatsienlu Kiulung; 2 Eggers syntypes, in NHMW, Wien.

Figures: Li & Zhou 1980: 191 (adult, galleries), Schedl 1955a: 10 (antenna).

Distribution: Asia (Shanxi, Sichuan in China).

Hosts: *Pinus armandi, P. tabulaeformis*.

Notes: (3) Schedl 1955a: 10 (redescribed), 1979c: 230 (citation of holotype invalid).

References: (**ec**) Li & Zhou 1980: 71. (**hb**) Li & Zhou 1980: 71; Yang 1989c. (**ds**) Murayama 1937b: 369. (**tx**) Eggers 1933a: 100; Murayama 1937b: 369; Schedl 1955a: 9–10, 1979c: 230.

***squameus* Yin & Huang** 1981: 558. Holotype, sex?; China; IZAS, Beijing.

Distribution: Asia (Qinhai, Sichuan, Xizang [Tibet] in China).

Hosts: *Picea asperata, Pinus armandii, P. densata, P. griffithii*.

References: (**ds**) Yin & Huang 1981: 558. (**tx**) Yin & Huang 1981: 558–559.

***squamosus* (Schedl)** 1975c: 384 (*Blastophagus*). Holotype, sex?; Dorjula, Bhutan; NHMBS, Basel.

Figures: Yin & Huang 1981: 559.

Distribution: Asia (Bhutan).

Notes: (1) Wood 1986c: 288 (to *Polygraphus*).

References: (**tx**) Schedl 1975c: 384–385, 1979c: 236; Wood, S. L. 1986c: 288.

***squamulatus* Niisima** 1941: 129. Syntypes, sex?; Sachalin (Chinnai), Hokkaido (Prov. Teshio); Nobuchi Collection, Ibaraki.

Figures: Nobuchi 1979b:pl. 3 (adult).

Distribution: Asia (Japan/ Sakhalin Island in E USSR).

Hosts: *Picea jezoensis*.

References: (**ds**) Krivolutskaya 1958: 132; Murayama 1956a: 276; Nobuchi 1979b: 11, 1985c: 10. (**tx**) Kurenzov 1967; Murayama 1956a: 276–279; Niisima 1941: 129; Nobuchi 1979b: 11, pl. 3.

***ssiori* Niisima** 1909: 132. Holotype, sex?; Tomakomai, Prov. Iburi, Sapporo, Japan; Nobuchi Collection, Ibaraki.

Figures: Nobuchi 1979b:pl. 3, Schedl 1955a: 7 (antenna).

Distribution: Asia (Japan/ Sakhalin Island in E USSR).

Hosts: *Prunus* spp.

Notes: (3) Schedl 1955a: 6 (redescribed).

References: (**hb**) Krivolutskaya 1965: 232, 1973: 134; Strohmeyer 1910a: 222. (**ds**) Kleine 1913b: 116, 1914b: 256, 1934a: 141; Krivolutskaya 1965: 231, 1973: 134; Murayama 1949c: 101, 1954b: 166, 1956a: 276; Nobuchi 1979b: 11, 1985c: 10. (**tx**) Hagedorn 1910a: 78; Murayama 1956a: 276; Niisima 1909: 132, 1910a: 3, 7, 1941: 128; Nobuchi 1979b: 11, pl. 3, 1985c: 10; Schedl 1934f: 1636, 1954b: 166, 1955a: 6.

***subopacus* Thomson** 1871: 393. Syntypes, sex?; Sweden; not given.

Figures: Chararas 1962c: 297, Nobuchi 1979b:pl. 3, Pfeffer 1989:pl. 4, Schedl 1955a: 21 (antenna), Postner 1974: 406 (adult).

Distribution: Asia (Heilongjiang in China/ Japan/ Korea/ Kamchatka, Sakhalin Island, Siberia in E USSR), Europe (Austria/ Czechoslovakia/ Finland/ France/ Hungary/ Norway/ Poland/ Sweden/ Switzerland/ W USSR).

Hosts: *Pinus* spp., *Picea* spp., *Abies siberica*.

Notes: (3) Reitter 1911: 47–55 (cites aberration *xaverti*, no status, synonymy in Schedl 1955a: 21). Schedl 1955a: 20 (redescribed). See also *nanus* Schedl.

References: (**ay**) Escherich 1923b: 481; Feytaud 1950: Fuchs 1912a; Lekander 1959b: 9; Scherb 1971; Wichmann 1912a: 9. (**bv**) Barr, B. A. 1969: 643; Grune 1979: 67; Nuorteva 1956c: 92; Wichmann 1912a: 9–10. (**cn**) Baisch 1954: 302; Barbey 1925: 78; Bouvier & Lesne 1922; Escherich 1917: 97–115, 1923b: 481; Esterberg 1959; Feytaud 1950a; Fuchs 1911b; Juutinen 1960: 23; Kangas 1939; Kholodkovskii 1912: 302; Koch 1913: 114; Kontkaven 1932: 61; Kovacevic 1924: 21–22; Kurenzov 1935c: 188; Lekander 1954b: 11; Lekander, M. 1951: 51; Muller 1912: 184; Nestertschuk 1930: 176; Nusslin 1913: 259; Pfeffer 1948a: 800; Pierce, W. D. 1917: 70; Rhumbler 1922: 302, 1927: 315; Saalas 1949: 341, 369; Schimitschek 1937c: 49, 1955c: 79; Schwerdtfeger 1944a: 179, 1957a: 185; Shiraki 1952; Shirskaya 1961: 165; Titova 1966; Trappen 1935: 142; Wilke 1931: 670. (**ec**) Baisch 1954: 302; Heqvist 1963: 152; Kangas 1939, 1946b: 21; Karpinski 1932a: 95; Kleine 1908c: 184, 1909a: 46, 76, 1944: 69; Kurenzov 1934a: 56; Lundberg 1984; Michalski & Ratajczak 1989; Nuorteva 1956a: 16, 1957b: 68, 1971; Nusslin 1927: 300; Pfeffer 1932a: 15, 1943b: 179, 1957a: 196; Ruhm 1956b: 3; Saalas 1917a: 18, 1928: 649, 1930: 119, 1937: 153, 1949: 341, 369, 1951: 13; Schwerdtfeger 1944a: 179, 1957a: 185; Titova 1966; Wiackowski 1957a: 80; Wichmann 1954d: 438; Wilke 1931: 670; Zinovjev 1957: 330, 1958: 382. (**hb**) Barbey 1925: 78; Budkov 1897; Charvat 1950; Escherich 1923b: 481; Feytaud 1950a; Fuchs 1911b; Gornostaev 1916: 310; Gyorfi 1957; Henschel 1895a: 142; Karpinski 1926: 81–83, 1933b: 25; Karpinski & Strawinski 1948: 155; Kholodkovskii 1912: 302; Krivolutskaya 1956: 831, 1960: 77; Kurenzov 1935a: 20, 1948b: 104, 1950d: 204; Kurenzov & Kononov 1961: 599; Lekander 1954b: 11, 1959b: 9; Lengerken 1939: 57, 1954: 76; Lindberg 1963: 243; Nunberg 1947c: 99; Nuorteva 1956c: 92; Nusslin 1904: 8, 1905a: 88, 1913: 259, 1927: 300; Pfeffer 1941c: 5; Postner 1974: 407; Rhumbler 1922: 302, 1927: 315; Saalas 1913a: 68, 81, 1949: 341, 369, 1951: 13; Schedl 1981b: 56; Schwerdtfeger 1944a: 179, 1957a: 185, 1981: 191; Seitner 1911: 99; Spessivtsev 1923: 200; Stark 1952: 223; Tragardh 1939b: 190; Zinovjev 1957: 330, 1958: 382. (**ds**) Bakke & Kvamme 1977; Belousov 1916, 1917: 334–337; Bistrom & Vaisanen 1988: 42; Borchert 1951; Budkov 1897; Butovitsch & Heqvist 1947; Calwer 1893; Charvat 1950; Cho 1957; Choo 1983: 45; Choo & Woo 1985: 163; Csiki 1941; Endrodi 1958b: 415; Ericson & Sandin 1893; Escherich 1923b: 481, 1932b; Esterberg 1959; Florov 1949: 80; Fuchs 1905a; Gornostaev 1917; Grill 1895: 309; Grune 1979: 67; Hagedorn 1910d: 39; Hansen, V. 1939; Henschel 1895a: 142; Heyden, Reitter, & Weise 1883: 181, 1891: 669, 1906: 710; Horion 1951, 1957: 21; Hubenthal 1913; Kaisila 1952: 18; Karpinski 1931: 23, 82, 1932a: 95, 1932b: 53, 1933b: 25, 1948b: 229; Karpinski & Strawinski 1948: 155; Klefbeck & Sjoberg 1960: 230; Kleine 1912a: 267, 1913a: 34, 1913b: 116, 1934a: 141; Ko 1969: 282; Kontkanen 1932: 61; Krivolutskaya 1956: 831, 1958: 124, 1960: 77, 1983; Kurenzov 1934a: 56, 1935a: 20, 1935c: 188, 1936b: 351, 1938a: 64, 1951b: 16, 1963b: 114, 1965, 1967; Kurenzov & Kononov 1961: 595, 599; Lesne 1922: 267; Lindberg & Saris 1952: 59; Lucht 1987: 276; Lundberg 1956a: 183, 1974: 92, 1979: 31; Martinek 1953: 366–374; Munster 1928: 288; Murayama 1929b: 2, 1929d: 6, 1930a: 1, 1930b: 12, 1937b: 375, 1956a: 276, 1957a: 36; Nobuchi 1966d: 17, 1979b: 12, 1985c: 10; Nunberg 1954: 25; Nuorteva 1971: 67; Palm 1946: 122, 1948a: 76, 90; Pfeffer 1924b: 472, 1930b: 120, 1931b: 75, 1947e: 3, 1948c: 64, 1950b: 74, 1989a: 42; Pierce, W. D. 1917: 70; Pittioni 1943: 176; Platonoff 1942: 63; Postner 1974: 407; Prossen 1913: 82; Reitter 1894a: 58, 1916: 286; Roubal 1941: 262; Saalas 1913a: 68, 81, 1917a: 18, 1930: 119, 1931: 68; Sahlberg 1900: 105; Sainte-Claire & Mequignon 1938: 444; Schaufuss 1915: 1228; Schedl 1980a: 12, 1981b: 56; Schilsky 1909: 187; Schnaider 1936: 366; Schwerdtfeger 1981: 191; Shiraki 1952; Sinovjev 1955: 189; Sokanovskii 1960; Stark 1931a: 24, 1931d: 544, 1952: 223; Strand 1946, 1960: 171; Tragardh 1939b: 190; Tredl 1907: 11; Wegelius 1960; Wichmann 1927a: 62; Wilke 1931: 670; Yanovskii 1977a; Yanovskii & Tegshzhargal 1985: 408; Zinovjev 1955: 187. (**tx**) Baisch 1954: 302; Balachowsky 1949a: 147; Chararas 1962c: 297; Charvat 1950; Choo 1983: 45; Eggers 1914: 41, 188; Eichhoff 1883a: 102, 124; Endrodi 1957a: 307, 1957b: 415; Escherich 1923b: 481; Fuchs 1912a; Grune 1979: 66, 67; Hagedorn 1910a: 78; Henschel 1895a: 142; Karpinski & Strawinski 1948: 155; Koch 1913: 114, 1928: 99, 1932: 134; Krivolutskaya 1956: 831, 1958: 129; Kuhnt 1913: 1052; Kurenzov 1941a: 136, 1948b: 104; Lekander 1959b: 9; Lucht 1987: 67; Murayama 1930b: 12, 30, 1937b: 375, 1954b: 200, 1956a: 276, 1958: 280; Niisima 1941: 128; Nobuchi 1966d: 17, pl. 2, 1979b: 12, pl. 3; Nunberg 1954: 25; Pfeffer 1932b: 16, 1941c: 5, 1947e: 3, 1955a: 143, 1989a: 42, pl. 4; Postner 1974: 407; Quaschik 1953: 35; Reitter

1894a: 58, 1911: 55, 1913a: 56, 1916: 286; Rhumbler 1922: 302, 1927: 315; Saalas 1913a: 68, 81, 1916: 91–95, 1919a: 1–415, 1949: 341, 369; Schedl 1934f: 1636, 1955a: 20–21, 1980a: 12, 1981b: 56; Scherb 1971; Schimitschek 1937c: 49, 1955c: 79; Sokanovskii 1960: 676; Spessivtsev 1922a: 466, 491, 1923: 200–214, 1925a: 167, 1925b: 14, 1929: 678–682, 1931: 39; Stark 1952: 223; Stresemann et al. 1989: 351; Thomson 1871: 393, 1886: 11. (**ms**) Escherich 1932b; Schimitschek 1930b: 407.

subopacus minor Lindemann 1875: 242. Syntypes, sex?; Europe; not given. Synonymy: Stark 1952: 222.

References: (**tx**) Lindemann 1875: 242; Stark 1952: 222.

***subsulcatus* Schedl** 1957d: 38. Holotype ♀; Congo Belge: Yangambi; MRCB, Tervuren.

Distribution: Africa (Zaire).

Hosts: *Garcinia punctata*.

References: (**ec**) Schedl 1961k: 382. (**hb**) Schedl 1961k: 382. (**ds**) Schedl 1961k: 382–383, 1967e: 210. (**tx**) Schedl 1957d: 38, 1961k: 382–383.

***sulcatus* Schedl** 1952i: 10. Holotype, sex?; Congo Belge: Yangambi; MRCB, Tervuren.

Distribution: Africa (Zaire).

Hosts: *Garcinia polyantha*.

References: (**ec**) Schedl 1961k: 385. (**hb**) Schedl 1961k: 384. (**ds**) Mayne & Donis 1962: 310; Schedl 1961k: 384, 1964f: 617. (**tx**) Schedl 1952i: 10, 1957d: 38, 1961k: 384.

***sumatranus* Schedl** 1961c: 72. Syntypes ♂; Sumatra: Takengon; RNH, Leiden, and Schedl Collection in NHMW, Wien.

Distribution: Indonesia (Sumatra).

Hosts: *Pinus merkusii*.

References: (**tx**) Schedl 1961c: 72.

***szemaoensis* Tsai & Yin** 1965: 335. Holotype ♂; Szemao, Yunnan, China; IZAS, Beijing.

Distribution: Asia (Burma/ Sichuan, Yunnan in China).

Hosts: *Pinus densata, P. khasya, P. yunnanensis, P.* spp., *Picea asperata*.

References: (**tx**) Tsai & Yin 1965: 335.

***taiwanensis* Schedl** 1967a: 128. Holotype ♀; Koshun, Taiwan to Tokyo interception; PPST, Tokyo.

Distribution: Asia (Taiwan).

Hosts: *Picea morrisonicola*.

References: (**ds**) Nobuchi 1967: 19. (**tx**) Schedl 1967a: 128–129.

***tenuipennis* Schedl** 1957d: 43. Holotype ♀; Congo Belge: Kivu, Hembe-Bitale; MRCB, Tervuren.

Distribution: Africa (Zaire).

Hosts: *Alchornea hirtella, Pentadesma lebrunii*.

References: (**hb**) Schedl 1961k: 386. (**ds**) Schedl 1961k: 386. (**tx**) Schedl 1957d: 43, 1961k: 385–386.

***tenuis* Schedl** 1952i: 10. Holotype ♀; Congo Belge: Yangambi; MRCB, Tervuren.

Figures: Schedl 1961k: 387, 391 (galleries).

Distribution: Africa (Zaire).

Hosts: *Garcinia* spp., *Congopharyngia durissima, Fagara macrophylla*.

Notes: (3) Schedl 1957d: 41 (described male).

References: (**ay**) Van Ryn-Tournel 1972. (**ec**) Schedl 1958d: 190–191, 1961k: 386. (**hb**) Schedl 1961k: 386. (**ds**) Mayne & Donis 1962: 310; Schedl 1961k: 386, 1972k: 295, 1975h: 350. (**tx**) Schedl 1952i: 10, 1957d: 41, 1961k: 386–390.

***thitsi* Wood** 1992b: 86. Holotype, sex?; Burma: Namma Reserve, Hsipaw River, Mandalay; BMNH, London.

Distribution: Asia (Burma).

Hosts: *Melanorrhoea usitata*.

Notes: (1) Beeson 1941: 387, 1961: 298 used *thitsi*, nomen nudum. Browne 1970: 550 described and designated a lectotype for Beeson's name without validating it.

References: (**ds**) Beeson 1941: 387, 1961: 298. (**tx**) Browne 1970: 550; Wood, S. L. 1992b: 86.

***trenchi* Stebbing** 1905: 6. Syntypes 3 ♀; labeled Shinghar Forest, published as Chilgoza Forests, Suliman Range north of Zhob, Beluchistan; FRI, Dehra Dun.

Figures: Stebbing 1915:pl. K opposite p. 511, fig. 1.

Distribution: Asia (Punjab in India/ Pakistan).

Hosts: *Pinus gerardiana*.

References: (**cn**) Beeson 1918: 114–124; Browne 1968b: 581; Pierce, W. D. 1917: 75; Stebbing 1914: 510. (**ec**) Beeson 1922c; Stebbing 1914: 510. (**hb**) Beeson 1922c: 497; Browne 1968b: 581; Stebbing 1908a: 106, 1909b: 18, 1911a: 7, 1914: 510; Strohmeyer 1910a: 222. (**ds**) Beeson 1922c, 1961: 294; Browne 1968b: 581; Kleine 1913b: 116, 1914b: 276, 1934a: 141; Pierce, W. D. 1917: 75. (**tx**) Hagedorn 1910a: 78; Stebbing 1905: 6, 1908b: 9–10, 1909b: 18, 1914: 510.

***tropicus* Eggers** 1932c: 29. Holotype ♂; Congostaat (Albertville); MRCB, Tervuren.

Distribution: Africa (Ghana/ Ivory Coast/ Ukerewe Island in Tanzania/ Zaire).

Hosts: *Sorindeia lemairei*.

References: (**ec**) Schedl 1961k: 390. (**hb**) Roberts 1969b: 127; Schedl 1961k: 390. (**ds**) Browne 1965: 188; Schedl 1961k: 390, 1962k: 1066, 1964j: 39, 1967e: 210, 1971g: 191, 1979b: 415. (**tx**) Eggers 1932c: 29; Schedl 1939g: 170, 1939i: 383, 1961k: 390.

***ugandae* Schedl** 1965f: 7. Holotype ♀; Uganda, Mpanga; BMNH, London.

Distribution: Africa (Uganda).

References: (**tx**) Schedl 1965f: 7.

***verrucifrons* Tsai & Yin** 1965: 335. Holotype ♂; Likiang, Yunnan, China, 3000–3100 m; IZAS, Beijing.

Distribution: Asia (Sichuan, Yunnan in China).

Hosts: *Pinus armandii, P. densata, P. yunnanensis, P.* spp.
References: (**ds**) Yin & Huang 1981: 561. (**tx**) Tsai & Yin 1965: 331, 335; Yin & Huang 1981: 561.

***vexator* (Browne)** 1970: 551 (*Spongotarsus*). Holotype, sex?; Burma: Mamma Reserve, Hsipaw Reserve, Mandalay; BMNH, London.
Distribution: Asia (Burma).
Hosts: *Melanorrhoea usitata*.
References: (**ds**) Browne 1970: 551, 1981b: 598. (**tx**) Browne 1970: 551.

***vietnamensis* Schedl** 1965a: 340. Holotype, sex?; rov. Ha-Tinh, Vietnam, 150 m; NHMB, Budapest.
Distribution: Asia (Vietnam).
References: (**tx**) Schedl 1965a: 340.

***zambianus* Beaver** in Beaver & Loyttyniemi 1985a: 66. Holotype, sex?; Zambia, Kitwe Chati; BMNH, London.
Distribution: Africa (Zambia).
Hosts: *Brahystegia utilis, Julbernardia paniculata*.
References: (**hb**) Loyttyniemi, Beaver, & Loyttyniemi 1984. (**tx**) Beaver & Loyttyniemi 1985a: 66.

***zhungdianensis* Tsai & Yin** 1965: 334. Holotype ♂; Zhungdian, Yunnan, China; IZAS, Beijing.
Figures: Yin & Huang 1981: 559.
Distribution: Asia (Sichuan, Xizang [Tibet], Yunnan in China).
Hosts: *Abies fabri, Larix potanini, Picea asperata, Pinus armandii, P. griffithii*.
References: (**ds**) Yin & Huang 1981: 559. (**tx**) Tsai & Yin 1965: 327, 334; Yin & Huang 1981: 559.

Genus *Carphoborus* Eichhoff

CARPHOBORUS EICHHOFF 1864b: 27. Type-species: *Hylesinus minimus* Fabricius, monobasic.
Estenoborus Reitter 1913a: 58. Type-species: *Hylesinus perrisi* Chapuis, monobasic. Synonymy: Wood 1982b: 371.
References: (**tx**) Balachowsky 1949a: 149; Davatchi 1958: 76; Reitter 1913a: 58; Wood, S. L. 1954b: 502–526, 1982b: 371–386, 1986: 56.
Keys: Balachowsky 1949a: 143, Pfeffer 1941e: 169 for Europe, Wood 1954b: 507, 1982b: 372 for North America, Bright 1976d: 96 for Canada.
References: (**ay**) Fuchs 1912; Nobuchi 1969a: 54; Nusslin 1911, 1912. (**cn**) Judeich & Nitsche 1895: 445–446. (**hb**) Beeson 1941: 371; Bright & Stark 1973: 56; Escherich 1923: 470–481; Furniss, R. L. & Carolin 1977: 345; Nunberg 1928: 137–173; Postner 1974: 403; Schedl 1981b: 54; Tragardh 1930: 469–480, 1931: 58–63; Wood, S. L. 1982b: 54, 1986a: 56. (**ds**) Bright & Stark 1973: 56; Hagedorn 1910d: 24; Postner 1974: 403; Schedl 1934f: 1636, 1981b: 54; Scheerpeltz & Winkler 1930: 256; Wood, S. L. 1982b: 371, 1986a: 56. (**tx**) Arnett 1960: 1042; Balachowsky 1949a: 141, 145; Beal & Massey 1945: 58, 74; Beeson 1922: 342–343; Blackman 1922b: 48–49, 1950: 314; Bright 1976d: 96; Bright & Stark 1973: 56; Bruck 1933: 103–104, 1936a: 111–112; Chamberlin 1939: 126–128; Chapuis 1869: 40, 1873: 248; Dodge 1938: 17, 24; Eichhoff 1864b: 27, 1868e: 150, 1881a: 129; Formanek 1907: 15, 24; Hagedorn 1909: 138, 1910a: 35, 62–63; Heyden, Reitter, & Weise 1906: 709; Hopkins 1914: 117, 134, 1915c: 195, 203, 226; Karaman 1971: 93; Keen 1938: 31, 1953: 37–38; Kostin 1973: 250; Kurenzov 1941: 71; LeConte 1868: 168, 172, 1876: 383; LeConte & Horn 1883: 523; Pfeffer 1941e: 169–170, 1955a: 11, 16–21, 52–64, 140, 145, 1985a: 470, 1989a: 43; Postner 1974: 403; Reitter 1894a: 47, 56, 58, 1913a: 54–58; Roonwal 1971: 305; Schedl 1946c: 32, 1959n: 408, 1981b: 54; Schimitschek 1937: 44–45; Spessivtsev 1922a: 466, 1925a: 167; Swaine 1909: 87, 1918a: 39, 56–57, 1931: 87; Tennenbaum 1915: 137; Wood, S. L. 1954b: 502–526, 1982b: 371–386, 1986a: 56.

***andersoni* Swaine** 1919b: 6E. Holotype ♀; Sandstone Rapids, Coppermine River, Northwest Territories, Canada; CNCI, Ottawa.
Figures: Bright 1976d: 98 (declivity), Wood 1954b: 519.
Distribution: North America (Alaska/ N Alberta, Northwest Territories, Yukon in Canada).
Hosts: *Picea glauca*.
Notes: (3) Wood 1954b: 518 (redescribed), 1982b: 382 (fossil remains from Ontario, Minnesota, New York).
References: (**cn**) Doane et al. 1936. (**ec**) Swaine 1925c: 264; Werner & Holsten 1984. (**hb**) Bright 1976d: 99; Chamberlin 1939: 130; Doane et al. 1936; Wood, S. L. 1954b: 518, 1982b: 380. (**ds**) Ashworth 1977, 1980; Ashworth & Cvancara 1983; Ashworth et al. 1981; Chamberlin 1939: 130; Kleine 1934a: 134; Leng & Mutchler 1927: 51; Miller, R. F. & Morgan 1982; Morgan, A. V. & Morgan 1980: 1110; Pilny, Morgan, & Morgan 1987; Schwert & Morgan 1980; Swaine 1919b: 6; Werner & Holsten 1984; Wood, S. L. 1982b: 380. (**tx**) Bright 1967b: 673, 1976d: 98; Bruck 1933b: 104, 106, 1936a: 112, 115–116; Chamberlin 1939: 130; de Ruette 1970: 98; Swaine 1919b: 6E; Wood, S. L. 1954b: 518–519, 1982b: 380.

***bicornis* Wood** 1986c: 269. Holotype ♀; Fayette, Alabama [USA]; Wood Collection.
Figures: Atkinson 1989b: 334 (frons)
Distribution: North America (Alabama, District of Columbia, Florida, Pennsylvania, South Carolina in USA).
Hosts: *Pinus clausa, P. virginiana*.
References: (**ds**) Atkinson 1989b: 334. (**tx**) Atkinson 1989b: 334; Wood, S. L. 1986c: 269.

***bifurcus* Eichhoff** 1868c: 147. Syntypes, sex?; Am. bor. [USA]; Hamburg Museum, lost.
Figures: Atkinson 1989b: 334 (frons), Blackman 1922b:pl. 5, fig. 27 (adult), Wood 1954b: 503.
Distribution: North America (District of Columbia, Florida, Georgia, Maryland, Mississippi,

Missouri, New York, North Carolina, Oklahoma, Pennsylvania, Tennessee, Virginia, West Virginia in USA).

Hosts: *Pinus echinata, P. elliottii, P. taeda, P. virginiana, P.* spp.

Notes: (3) Wood 1954b: 525 (redescribed).

References: (**bv**) Atkinson, Foltz, & Connor 1988. (**cn**) Blackman 1950; Doane et al. 1936; Packard 1890: 725–726, 1891: 179; Smith, J. B. 1900: 364; Swaine 1918a: 57. (**ec**) Hines, J. W. & Heikkenen 1977. (**hb**) Atkinson, Foltz, & Connor 1988; Baker, W. L. 1972: 239; Blackman 1922b: 49–50, 1950; Chamberlin 1939: 128; Chittenden 1890; Deyrup & Atkinson 1987a: 64; Doane et al. 1936; Packard 1890: 725; Pierce 1907: 294; Schwarz 1888a: 80; Swaine 1918a: 57; Wood, S. L. 1982b: 385. (**ds**) Anonymous 1926c: 515; Atkinson 1989b: 334, 1991: 156; Blackman 1922b: 49–50, 1950; Blatchley & Leng 1916: 660; Chamberlin 1939: 128; Chittenden 1890; Deyrup 1981b: 4; Deyrup & Atkinson 1987a: 64; Drooz 1985: 352; Hagedorn 1910d: 24; Henshaw 1885: 149; Kleine 1912b: 181, 1934a: 134; Leng 1920: 338; Leonard 1928: 515; Schwarz 1888a: 80; Smith, J. B. 1900: 364, 1910: 404; Swaine 1909: 87, 1919b: 6; Ulke 1902: 56. (**tx**) Atkinson 1989b: 334; Beal & Massey 1945: 75; Blackman 1922b: 49–50; Blatchley & Leng 1916: 660; Bruck 1933b: 103, 106, 1936a: 116; Chamberlin 1939: 128; Chapuis 1869: 97, 1873: 249; Eichhoff 1868c: 147; Gemminger & Harold 1872: 2673; Hagedorn 1910a: 63; Hopkins 1909a: 3; LeConte 1868: 172, 1876: 383; Schedl 1979c: 40; Swaine 1909: 87, 1918a: 57, 1919b: 6, 1924a: 235; Wood, S. L. 1954b: 503, 509, 525, 1982b: 385; Zimmermann 1868: 148.

bicristatus Chapuis 1869: 41. Syntypes, sex?; type labeled Carolina, published as America boreale, Etas du Sud et du Milieu; IRSNB, Brussels. Synonymy: Wood 1954b: 525.

References: (**cn**) Doane et al. 1936; Packard 1890: 726; Swaine 1918a: 57. (**hb**) Beal & Massey 1945: 74–75; Blackman 1922b: 49, 1950; Chamberlin 1939: 128; Doane et al. 1936; Packard 1890: 726; Pierce 1907: 294; Swaine 1918a: 57. (**ds**) Anonymous 1926c: 515; Beal & Massey 1945: 74–75; Blackman 1922b: 49, 1950; Chamberlin 1925, 1939: 128; Hagedorn 1910d: 24; Henshaw 1885: 149; Kleine 1912b: 181, 1914b: 390, 1934a: 134; Leng 1920: 338; Leonard 1928: 515; Smith, J. B. 1900: 364, 1910: 404; Swaine 1909: 87, 1919b: 6. (**tx**) Beal & Massey 1945: 74–75; Blackman 1922b: 49; Bruck 1933b: 103, 1936a: 116; Chamberlin 1939: 128; Chapuis 1869: 41, 1873: 249; Gemminger & Harold 1872: 2673; Hagedorn 1910a: 63; LeConte 1876: 383–384; Swaine 1909: 87, 1918a: 57, 1919b: 6; Wood, S. L. 1954b: 525.

***blaisdelli* Swaine** 1924a: 234. Holotype ♂; Camp Baldy, San Bernardino Co., California [USA]; CNCI, Ottawa.

Figures: Wood 1954: 511 (declivity).

Distribution: North America (S California in USA).

Hosts: *Pseudotsuga macrocarpa*.

Notes: (3) Wood 1954b: 509 (redescribed).

References: (**cn**) Doane et al. 1936. (**hb**) Bright & Stark 1973: 57; Chamberlin 1939: 131; Doane et al. 1936; Wood, S. L. 1954b: 509, 1982b: 374. (**ds**) Bright & Stark 1973: 57; Chamberlin 1939: 131; Kleine 1934a: 134; Leng & Mutchler 1927: 51; Wood, S. L. 1982b: 374. (**tx**) Bright 1976b: 673; Bruck 1933b: 103, 105, 1936a: 116–117; Chamberlin 1939: 131; de Ruette 1970: 98; Swaine 1924a: 234–235; Wood, S. L. 1954b: 507, 509, 512, 1982b: 374.

cressatyi Bruck 1936b: 36. Holotype ♂; Arroyo Seco, Los Angeles Co., California [USA]; CAS, San Francisco. Synonymy: Wood 1954b: 509.

References: (**hb**) Chamberlin 1939: 129; Wood, S. L. 1954b: 509. (**ds**) Blackwelder 1939; Chamberlin 1939: 129. (**tx**) Bruck 1936a: 111–114, 1936b: 36–37; Chamberlin 1939: 129; Wood, S. L. 1954b: 509.

***bonnairei* Brisout** 1884:LII. Syntypes, sex?; Batna, Algeria; not given.

Distribution: Africa (Algeria/ Morocco/ Tunisia), Asia (Syria/ Turkey).

Hosts: *Pinus halepensis, P. maritimae*.

References: (**cn**) Grandi 1951. (**hb**) Grandi 1951; Karpinski 1933b: 26; Peyerimhoff 1919: 251. (**ds**) Hagedorn 1910d: 24; Karpinski 1931: 25, 1933b: 25; Kleine 1912b: 181; Kocher 1953: 133; Kleine 1914a: 16; Normand 1937: 268; Peyerimhoff 1919: 251, 1933b: 367; Pfeffer 1947d: 128, 1984: 277; Reitter 1894a: 57. (**tx**) Balachowsky 1949a: 148; Brisout 1884:LII; Hagedorn 1910a: 62; Pfeffer 1941e: 170, 176, 1955a: 146, 1985a: 473; Reitter 1894a: 57, 1913a: 58; Schedl 1934f: 1636.

henscheli Reitter 1887b: 192. Syntypes, sex?; Smyrna; NHMB, Budapest. Synonymy: Pfeffer 1941e: 176.

Notes: (3) Wichmann 1915a: 105 (redescribed).

References: (**ay**) Pfeffer 1985a: 471. (**ec**) Halperin & Holzschuh 1984: 23. (**hb**) Fuchs 1904a; Halperin & Holzschuh 1984: 23; Henschel 1895a: 144. (**ds**) Fuchs 1904a; Hagedorn 1910d: 24; Halperin & Holzschuh 1984: 23; Henschel 1895a: 144; Heyden, Reitter, & Weise 1906: 709; Kleine 1912b: 181; Pfeffer 1985a: 471; Reitter 1894a: 57. (**tx**) Balachowsky 1949a: 148; Cieslar 1894; Fleischer 1927; Hagedorn 1910a: 62; Henschel 1894a: 144; Pfeffer 1941e: 170, 176–177, 1985a: 471; Reitter 1887b: 192, 1894a: 57, 1913a: 57; Schedl 1934f: 1637, 1979c: 116; Wichmann 1915a: 105–106.

***boswelliae* (Stebbing)** 1903a: 261 (*Cryphalus*). Holotype ♀; Bhamburda reserve near Poona in the Bombay Presidency; FRI, Dehra Dun.
Figures: Stebbing 1914: 537 (all stages).
Distribution: Asia (Maharashtra in India).
Hosts: *Boswellia serrata*.
Notes: (3) This name was used erroneously for *latus* from 1915 to 1988.
References: (**cn**) Pierce, W. D. 1917: 69; Roonwal, Chatterjee, & Thapa 1960: 1, 1961a: 4; Stebbing 1903a: 261, 1914: 537. (**ec**) Stebbing 1914: 537. (**hb**) Roonwal 1971b; Stebbing 1903a: 261, 1908a: 110, 1914: 537. (**ds**) Beeson 1961: 285; Bhasin, Roonwal, & Singh 1958; Hagedorn 1910d: 41; Kleine 1913b: 118, 1914b: 269, 1934a: 134; Pierce, W. D. 1917: 69; Roonwal 1971b; Roonwal, Chatterjee, & Thapa 1960: 1, 1961a: 4; Schedl 1969c: 48; Stebbing 1903a: 261. (**tx**) Beeson 1922: 495; Hagedorn 1910a: 85; Roonwal 1971b: 306; Stebbing 1903a: 261, 1914: 537.

***brevisetosus* Wood** 1954b: 514. Holotype ♀; Saratoga, Wyoming [USA]; USNM, Washington.
Distribution: North America (Utah, SW Wyoming in USA).
Hosts: *Picea pungens*.
References: (**hb**) Wood, S. L. 1954b: 514, 1982b: 379. (**ds**) Wood, S. L. 1960b: 59, 1982b: 379. (**tx**) de Ruette 1970: 98; Wood, S. L. 1954b: 514, 1960b: 59, 1982b: 379.

***carri* Swaine** 1917: 16. Holotype ♂; Edmonton, Alberta, Canada; CNCI, Ottawa.
Figures: Bright 1976d: 98, 201, 208, Kusch 1967: 10, Wood 1954b: 519.
Distribution: North America (Alaska/ Alberta, Manitoba, New Brunswick, Northwest Territories, Yukon in Canada/ Montana, South Dakota, Wyoming in USA).
Hosts: *Picea engelmannii, P. glauca, P. rubens*.
Notes: (3) Wood 1954b: 524 (redescription).
References: (**cn**) Doane et al. 1936; Swaine 1918a: 57. (**ec**) Werner & Holsten 1984. (**hb**) Bright 1976d: 100; Chamberlin 1939: 131; Doane et al. 1936; Furniss, M. M. & Johnson 1987: 375; Swaine 1918a: 57; Wood, S. L. 1982b: 385. (**ds**) Ashworth 1980; Ashworth & Cvancara 1983; Ashworth et al. 1981; Bright 1976d: 100; Chamberlin 1923, 1939: 131; Elias 1985: 39; Evans, D., Lowe, & Hunt 1978; Furniss, M. M. & Johnson 1987: 375; Furniss, R. L. & Carolin 1977: 345; Gast et al. 1989: 385; Hopping 1922; Keen 1929a: 15; Kleine 1934a: 134; Kusch 1967; Leng 1920: 338; Miller, Fitzgerald, & Buhay 1987; Miller, R. F. & Morgan 1982; Miller, R. F., Morgan, & Hicock 1985: 500; Morgan, A. V. & Morgan 1980; Schwert & Morgan 1980; Werner & Holsten 1984; Wood, S. L. 1982b: 385. (**tx**) Bright 1967b: 673, 1976d: 98, 100, 201, 208; Bruck 1933b: 103, 105; Chamberlin 1939: 131; Dodge 1938: 24; Hoebeke 1978; Keen 1929a: 15; Kusch 1967: 10; de Ruette 1970: 98; Schedl 1979c: 54; Swaine 1917: 16, 1918a: 57, 1924a: 235; Titus, Meikle, & Harrison 1985: 39; Wood, S. L. 1954b: 509, 519, 524, 1982b: 385.

***cholodkovskyi* Spessivtsev** 1916: 64. Syntypes ♂ ♀; State Forest Biklan, left bank of the Kama, Government Ufa, East Russia; not given.
Figures: Grune 1979: 62, Pfeffer 1985a: 471, Stark 1952: 232–233 (adult, galleries).
Distribution: Asia (E USSR), Europe (Finland/ Norway/ Poland/ Sweden/ NW USSR).
Hosts: *Pinus sylvestris, Larix dahurica*.
Notes: (3) Karpinski 1933b: 28 (named var. *borealis*, no status).
References: (**bv**) Grune 1979: 63; Tragardh 1930b: 101. (**cn**) Anonymous 1929c: 645; Esterberg 1959; Kontkanen 1932: 61; Lonshehakov & Lure 1960; Nestertschuk 1930: 176. (**ec**) Galoux 1947c; Karpinski 1932a: 95; Kostin 1964: 107; Pfeffer 1960: 345; Rafes 1962; Tragardh 1925a: 170, 1927a: 210. (**hb**) Anonymous 1929c: 645; Kangas 1949c; Karpinski 1933b: 25; Karpinski & Strawinski 1948: 155; Petrenko 1966; Postner 1974: 405; Rafes 1962; Spessivtsev 1923: 211, 1925d: 105, 1928a: 222; Tragardh 1923: 401–424, 1925: 169–174, 1930b: 101, 1930c: 476, 1931: 58. (**ds**) Arnoldi et al. 1955: 680; Butovitsch & Heqvist 1947; Esterberg 1959; Florov 1949: 82; Grune 1979: 63; Hansen, V. 1939; Hellen 1947; Kangas 1948b: 128, 1949c; Karpinski 1931c: 18, 23, 1932a: 95, 1933b: 25; Karpinski & Strawinski 1948: 155; Klefbeck & Sjoberg 1960: 230; Kontkanen 1932: 61; Krivolutskaya 1983; Kurenzov 1967; Mandl 1931: 25; Nunberg 1954: 26; Nuorteva 1971: 71; Pfeffer 1960: 345; Postner 1974: 405; Rudnev 1958: 372; Sokanovskii 1960; Stark 1928: 377–378, 1931a: 25, 1931d: 546, 1952: 232; Strand 1946: 598; Yanovskii 1977a; Yanovskii & Tegshzhargal 1983, 1985: 407; Zinovjev 1955: 187. (**tx**) Eggers 1922c; Grune 1979: 62–63; Karpinski & Strawinski 1948: 155; Klefbeck & Sjoberg 1960: 230; Nunberg 1954: 26; Pfeffer 1941e: 169, 173, 1955a: 146, 1985a: 471; Postner 1974: 405; Schedl 1934f: 1637; Sokanovskii 1960: 676; Spessivtsev 1916: 64–65, 1922a: 467, 491, 1923: 211–213, 1925a: 168, 1925b: 36, 1925d: 105, 1928: 228–235, 1931: 42–43; Stark 1952: 232.

***convexifrons* Wood** 1954b: 516. Holotype ♀; Chiricahua National Monument, Arizona [USA]; USNM, Washington.
Figures: Atkinson & Equihua 1988: 89, Wood 1954b: 511.
Distribution: North America (Baja California Norte, Chihuahua, Coahuila, Durango in Mexico/ Arizona, New Mexico in USA).
Hosts: *Pinus edulis, P. cembroides, P. leiophylla*.
References: (**hb**) Wood, S. L. 1954b: 516. (**ds**) Atkinson & Equihua 1988: 86. (**tx**) Atkinson &

Equihua 1988: 89; Wood, S. L. 1954b: 508, 511, 516, 1982b: 379.

***costatus* Wichmann** 1915a: 106. Syntypes ♀; Jamsar Forest, N.W. Himalayas, 5000 feet; not given.
Distribution: Asia (Himachal Pradesh, Kashmir, Uttar Pradesh in India).
Hosts: *Pinus gregii, P. griffithii, P. ponderosa, P. roxburghii*.
References: (**ec**) Beeson 1922c: 494. (**hb**) Beeson 1922c: 494; Roonwal 1971b. (**ds**) Beeson 1922c: 494, 1961: 285; Kleine 1934a: 134; Roonwal 1969c: 48; Schedl 1969c: 48. (**tx**) Roonwal 1971b; Schedl 1979c: 67; Wichmann 1915a: 106.

***declivis* Wood** 1954b: 522. Holotype ♀; Lake Tenaya, Yosemite National Park, California [USA]; USNM, Washington.
Figures: Wood 1954b: 511.
Distribution: North America (California in USA).
Hosts: *Pinus aristata, P. contorta*.
References: (**hb**) Bright & Stark 1973: 59; Wood, S. L. 1954b: 522. (**ds**) Bright & Stark 1973: 59; Wood, S. L. 1982b: 383. (**tx**) de Ruette 1970: 98; Wood, S. L. 1954b: 508, 511, 522, 1982b: 383.

***dunni* Swaine** 1924a: 235. Holotype ♀; Nictor Lake, New Brunswick, Canada; CNCI, Ottawa.
Figures: Wood 1954b: 519.
Distribution: North America (New Brunswick in Canada/ Michigan in USA).
Hosts: *Larix laricina*, rare or accidental in *Picea rubens*.
Notes: (3) Wood 1954b: 518 (redescribed).
References: (**cn**) Doane et al. 1936. (**hb**) Bright 1976d: 99; Chamberlin 1939: 132; Doane et al. 1936; Wood, S. L. 1954b: 518. (**ds**) Beaulne 1956; Bright 1976d: 99; Chamberlin 1939: 132; Kirkendall 1982; Kleine 1934a: 134; Leng & Mutchler 1927: 51; Wood, S. L. 1982b: 382. (**tx**) Bright 1967b: 673, 1967d: 99; Bruck 1933b: 104; Chamberlin 1939: 132; de Ruette 1970: 98; Swaine 1924a: 234–235; Titus, Meikle, & Harrison 1985: 39; Wood, S. L. 1954b: 518–519, 1982b: 382.

***frontalis* Wood** 1954b: 515. Holotype ♀; Ventura County, California [USA]; USNM, Washington.
Distribution: North America (S California, S Nevada in USA).
Hosts: *Pinus monophylla*.
References: (**hb**) Bright & Stark 1973: 59; Wood, S. L. 1954b: 515, 1982b: 375. (**ds**) Bright & Stark 1973: 59; Wood, S. L. 1982b: 375. (**tx**) de Ruette 1970: 98; Wood, S. L. 1954b: 508, 512, 515, 1982b: 375.

***intermedius* Wood** 1954b: 523. Holotype ♂; New Castle, Colorado [USA]; USNM, Washington.
Figures: Bright 1976d: 98 (declivity), Wood 1954b: 511.
Distribution: North America (Alaska/ N California, Colorado, Montana, Oregon, Washington in USA).
Hosts: *Picea engelmannii, Pinus contorta*.
References: (**cn**) Lindgren 1980a: 61. (**ec**) Matthews 1970; Werner & Holsten 1984. (**hb**) Bright 1976d: 100; Bright & Stark 1973: 59; Chamberlin 1958: 62; Lindgren 1980a: 61; Wood, S. L. 1954b: 523. (**ds**) Bright 1964: 170, 1976d: 100; Bright & Stark 1973: 59; Chamberlin 1958: 62; Werner & Holsten 1984; Wood, S. L. 1972a: 410, 1982b: 384. (**tx**) Bright 1964: 170, 1976d: 98; Chamberlin 1958: 62; de Ruette 1970: 98; Wood, S. L. 1954b: 508, 511, 523, 1972a: 410, 1982b: 384.

***jurinskii* Eggers** 1910e: 36. Holotype, sex?; Irkutsk (Sibirien); T. O. Jurinski Collection in Jakutsk.
Distribution: Asia (E USSR).
Hosts: *Pinus sylvestris, Abies siberica*.
References: (**ay**) Karpinski 1933b: 26. (**hb**) Stark 1952: 235. (**ds**) Florov 1949: 84; Karpinski 1931: 25, 1933b: 26; Kleine 1914b: 247; Pfeffer 1935: 157; Stark 1931d: 546, 1952: 235; Yanovskii & Tegshzhargal 1985: 407. (**tx**) Eggers 1910e: 36; Hagedorn 1910a: 62; Pfeffer 1941e: 170, 174, 1955a: 146, 1985a: 471; Reitter 1913: 57; Schedl 1934f: 1637; Stark 1952: 235.

***latus* Wood** 1988b: 192. Holotype ♀; Bachar, Balaghet, C.P., India; FRI, Dehra Dun.
Distribution: Asia (Madhaya Pradesh in India).
Hosts: *Boswellia serrata*.
Notes: (3) Beeson 1941 (1961: 285) (*latus*, nomen nudum). Most references to *boswelliae* prior to 1988 are to this species.
References: (**ds**) Beeson 1922: 495, 1961: 285; Bhasin, Roonwal, & Singh 1958. (**tx**) Roonwal 1971: 314; Schedl 1979c: 137; Wood, S. L. 1988b: 192.

***marani* Pfeffer** 1941e: 177. Syntypes, sex?; Attica (Kaessariani prope Athenas, Hagios Thedores), Morea (Diakophto), Greece; Prage Museum.
Distribution: Europe (Greece).
Hosts: *Pinus halepensis*.
References: (**bv**) Grune 1979: 63. (**ds**) Grune 1979: 63; Pfeffer 1947d: 128; Postner 1974: 405. (**tx**) Grune 1979: 63; Pfeffer 1941e: 170, 177, 1985a: 473; Postner 1974: 405; Schedl 1979c: 148.

***mexicanus* Bright** 1972b: 1491. Holotype ♀; 14 km E El Palmito, Durango, Mexico; CNCI, Ottawa.
Distribution: North America (Durango in Mexico).
Hosts: *Pinus lumholtzii*.
References: (**ds**) Wood, S. L. 1982b: 377. (**tx**) Bright 1972b: 1491; McNamara 1977: 194; Wood, S. L. 1982b: 377.

***minimus* (Fabricius)** 1801: 395 (*Hylesinus*). Syntypes 4, sex?; Saxoniae; UZMC, Copenhagen.
Figures: Grune 1979: 62, Pfeffer 1985a: 473, 1989: pl. 6, Stark 1952: 236 (adult), Postner 1974: 404 (adult).
Distribution: Africa (Algeria/ Egypt/ Libya/ Morocco/ Tunisia), Asia (Israel/ SW Siberia/ Turkey), Europe (Albania/ Austria/ Bulgaria/ Czechoslovakia/ Finland/ France/ Germany/ Greece/

Hungary/ Italy/ Netherlands/ Poland/ Romania/ Spain/ Sweden/ Switzerland/ Caucasus in W USSR/ Yugoslavia).

Hosts: *Pinus* spp., *Cedrus libanotica*.

Notes: (1) Eichhoff 1864b: 27 (to *Carphoborus*). (3) Schedl 1979c: 123 (*ater* Eggers, nomen nudum, synonymy).

References: (**ay**) Chararas 1971b; Chararas & Koutroumpas 1977; Courtois et al. 1965; Escherich 1923b: 481, 547; Feytaud 1950a; Lekander 1959b: 60; Nunberg 1928a: 140; Nusslin 1911a: 51, 59, 109, 255, 278. (**bv**) Chararas 1966b: 2492–2495, 1971b; Chararas, Desveaux, & Kogane-Charles 1978a; Grune 1979: 63; Mendel, Madar, & Golan 1985; Rutledge, Chararas, & Ducauze 1988. (**cn**) Anonymous 1979p; Barbey 1925: 247; Chararas 1972; Chorbadzhievo 1929; Eckstein 1926: 579; Escherich 1923b: 481, 547; Esterberg 1959; Feytaud 1950a; Grandi 1951; Gyorfi 1946: 193; Hess & Beck 1927: 347; Joly 1976; Judeich & Nitsche 1895: 447, 505; Koch 1913: 125; Lohrenz 1907: 42; Maksimovic & Milanovic 1964, 1966; Nusslin 1883: 152, 1913: 223; Pfeffer 1933: 43; Rhumbler 1927: 320; Schimitschek 1935b: 147, 1937b: 9, 1937c: 49, 1950: 46, 1955a: 41, 1955a: 73, 1955c: 79; Schwerdtfeger 1944a: 177, 1950b: 50, 1957a: 183; Slander 1948: 10; Wachtl 1883b: 319, 1901: 381; Weber, H. 1926: 579; Wichmann 1927b: 353; Wohlmann 1936: 41; Wolff 1920: 235; Wolff & Krausse 1922: 87. (**ec**) Chararas 1959a; Chararas, Desveaux, & Kogane-Charles 1978a; Elliot & Morley 1907; Gaulle 1906: 237; Gyorfi 1941a: 87, 1962: 213; Haeselbarth 1967; Heqvist 1967: 70; Kleine 1908c: 183, 1909a: 45, 77, 1944: 73; Kobulajiv & Kalandra 1954: 30; Kostenko 1929; Mendel 1986c: 115, 1986d: 130; Nosek 1959a: 118; Nunberg 1930: 202; Nuorteva 1957b: 52; Nusslin 1927: 320; Pfeffer 1928b: 3, 1933: 43, 1960: 346; Rafes 1962; Rondani 1873: 147; Ruhm 1956b: 3; Ruskov 1928: 57–64; Schimitschek 1936a: 558, 1950: 46, 1955a: 41, 73; Schwerdtfeger 1944a: 47, 1950b: 50, 1957a: 183; Sedlaczek 1935a: 163; Thompson, W. R. 1943: 27; Tragardh 1927a: 198. (**hb**) Altum 1875, 1881c: 274, 1890b; Bach 1864; Barbey 1901: 20, 57, 1925: 247; Bargmann 1906; Beffa 1961; Budge 1949; Chararas 1966b, 1972; Charvat 1950; Chorbadzhievo 1929; Dombrowsky 1887; Eckstein 1889, 1897, 1926: 579; Eichhoff 1881a: 38, 129, 1882a: 241; Escherich 1923b: 481, 547; Everts 1903: 749; Feytaud 1950a; Grandi 1951; Gyorfi 1957; Henschel 1876a: 92, 240, 242, 1895a: 144; Hess & Beck 1927: 339; Joly 1976; Judeich & Nitsche 1895: 447, 505; Karpinski 1933b: 26; Karpinski & Strawinski 1948: 155; Knotek 1894a: 553, 1898b: 333; Lekander 1959b: 60; Lengerken 1939: 59, 1954: 76; Lezhava 1959: 630; Lohrenz 1907: 42; Lunardoni & Leonardi 1889: 432; Mendel, Morgan, & Golan 1985; Nosek 1959a: 118; Nusslin 1898: 278, 1913: 223, 1927: 320; Pfeffer 1941b: 3; Postner 1974: 404; Rafes 1962; Ratzeburg 1837: 178, 1839: 218; Rhumbler 1927: 320; Rimski-Korsakov et al. 1949: 288; Rupertsberger 1880: 226; Schedl 1981b: 55; Schimitschek 1955a: 41, 73; Schwerdtfeger 1944a: 177, 1957a: 183, 1981: 189; Sedlaczek 1935a: 163; Spessivtsev 1913a: 61; Stark 1926a: 334, 1952: 235; Tschorbadjiev 1929: 164; Wachtl 1901: 381; Weber 1926: 579; Wichmann 1927b: 353; Wolff 1920: 235; Wolff & Krausse 1922: 87. (**ds**) Acloque 1896; Anonymous 1979p; Arnoldi et al. 1955: 681; Audras & Schaefer 1957; Barthe 1896; Bistrom & Vaisanen 1988: 42; Borchert 1951; Brakman 1966b: 205; Calwer 1884, 1893; Chapuis 1869: 40, 1873: 248; Charvat 1950; Chorbadzhievo 1929; Dejean 1821, 1825, 1837; Eggers 1904; Endrodi 1958b; Escherich 1923b: 481, 547, 1932b; Esterberg 1959; Everts 1922: 639; Favre 1890; Forster 1849: 440; Fowler 1891; Gaubil 1849: 127; Gozis 1875: 79; Grune 1979: 63; Hagedorn 1910d: 24; Halperin 1963: 83; Hellen 1947; Hennig 1954: 263; Henschel 1879a, 1895a: 144; Heyden 1876: 298; Heyden, Reitter, & Weise 1883: 181, 1891: 668, 1906: 710; Horion 1951; Jacentkovsky 1912: 287; Joly 1976; Judeich & Nitsche 1895: 447, 505; Kaltenbach 1874: 686; Karpinski 1931: 25, 1933b: 26; Karpinski & Strawinski 1948: 155; Kersten 1933: 77; Kestercanek 1881a: 12; Klefbeck & Sjoberg 1960: 230; Kleine 1909b: 217–220, 1912a: 263, 267, 1912b: 181, 1913a: 34, 1934a: 134; Knotek 1892a: 33, 1894a: 553, 1898b: 333; Kolubajiv 1934: 63; Kostenko 1929; Kozikowsky 1921: 180; Kraatz 1869: 59; Krogerus 1944: 32; Kurir 1947c: 6; Lacordaire 1866: 361; Lezhava 1959: 630; Lomnicki 1913b: 147; Lucht 1987: 276; Lunardoni & Leonardi 1889: 432; Nunberg 1928b: 88, 103, 1954: 26; Nusslin 1898: 278; Perris 1876a: 256, 1877a: 416; Peyerimhoff 1933b: 373; Pfeffer 1928b: 3, 1931b: 74, 1933: 3–54, 1935: 159, 1947d: 126–127, 1947e: 17, 1960: 346, 1984: 277, 1989a: 43; Pittioni 1943: 174; Pomerantzev 1907a: 177, 192, 1907b: 491; Postner 1974: 404; Rapp 1934: 722; Ratzeburg 1837: 178, 1839: 218; Redtenbacher 1858: 827, 1874: 369; Reitter 1869b: 153, 1894a: 57, 1916: 286; Rimski-Korsakov et al. 1949: 288; Roubal 1935b: 72, 1941: 262; Ruskov 1928c: 61; Sainte-Claire & Mequignon 1938: 445; Schaufuss 1915: 1229; Schaum 1859: 95, 1862: 100; Schedl 1959h: 100, 1961b: 184, 1967c: 70, 1969g: 289, 1971d: 428, 1980a: 13, 1981b: 55; Scheerpeltz & Winkler 1930: 53; Schilsky 1909: 187; Schneider & Leder 1977: 54; Schwerdtfeger 1981: 189; Seidlitz 1891a: 560; Stark 1926a: 334, 1926b: 103, 1926j: 125, 1927b: 88, 1952: 235; Stein 1868: 113; Stein & Weise 1877: 163; Stierlin 1898: 433; Trappen 1935: 142; Tredl 1907: 11; Tschorbadjiev 1929: 164; Westhoff 1882: 237; Wichmann 1927a: 63–64. (**tx**) Acloque 1896; Bach 1854, 1864; Balachowsky 1949a: 148; Barbey 1901: 20, 57; Beffa 1961; Chapuis 1869: 40, 1873: 248; Charvat 1950; Csiki

1907; Dejean 1821, 1825; Doebner 1860; Dombrowsky 1887; Eggers 1929c: 43, 49; Eichhoff 1864b: 27, 1881a: 38, 129, 1883a: 103, 125; Endrodi 1957a: 307, 1957b; Erichson 1836: 53; Escherich 1923b: 481, 547; Everts 1903: 749, 1922: 639; Fabricius 1798: 158, 1801: 395; Fauvel 1889; Ferrant 1911; Ferrari 1867: 6; Fleischer 1927; Formanek 1907: 24; Gemminger & Harold 1872: 2673; Grune 1979: 62–63; Hagedorn 1910a: 62; Henschel 1876a: 42, 240, 242, 1895a: 144; Hopkins 1909a: 3, 1914: 117; Houlbert 1922a: 4–16, pl. 1; Jacquelin du Val & Fairmaire 1868: 109; Joly 1976; Judeich & Nitsche 1895: 447, 505; Kalina 1975; Karpinski & Strawinski 1948: 155; Keler 1928: 31; Knotek 1892a: 33; Koch 1913: 125, 1932: 122; Kuhnt 1913: 1051; Lacordaire 1866: 361; Lekander 1959b: 60; Letzner 1891: 373; Leunis 1886: 179; Lindemann 1879: 54; Lucas 1920: 165; Lucht 1987: 276; Lunardoni & Leonardi 1889: 432; Nunberg 1928a: 140, 1954: 26; Nusslin 1911a: 51, 59, 109, 255, 278; Perris 1877a: 416; Pfeffer 1932b: 16, 1941b: 3, 1941e: 170, 174, 1947e: 17, 1955a: 147, 1985a: 473, 1989a: 42, pl. 6; Portevin 1935: 322; Postner 1974: 404; Quaschik 1953: 35; Ratzeburg 1837: 178, 1839: 218; Redtenbacher 1849a: 793, 852, 1849b: 27, 1858: 827, 1874: 369; Reitter 1887b: 192, 1894a: 57, 1913a: 57, 1916: 286; Rey 1887: 232; Rhumbler 1927: 320; Rupertsberger 1880: 226; Schedl 1934f: 1637, 1980a: 13, 1981b: 55; Schimitschek 1937c: 49, 1955c: 79; Seidlitz 1891a: 560; Semenov 1902: 273; Spessivtsev 1913a: 61, 1916: 65–67, 1922a: 467, 490, 1931: 44–45; Stark 1952: 235; Stierlin 1898: 433; Stresemann et al. 1989: 351; Wichmann 1915: 105–106, 1955a: 105; Wood, S. L. 1954b: 506. (**ms**) Escherich 1932b; Lucas 1920: 165.

squamulatus Redtenbacher 1858: 369 (*Hylesinus*). Syntypes, sex?; Europe; not given. Synonymy: Letzner 1891: 373, Hagedorn 1910d: 24.

References: (**ds**) Hagedorn 1910d: 24; Redtenbacher 1874: 370; Schilsky 1909: 187; Stein & Weise 1877: 163. (**tx**) Balachowsky 1949a: 148; Hagedorn 1910d: 24; Letzner 1891: 373; Redtenbacher 1858: 369, 1874: 370; Schedl 1934f: 1637.

balgensis Murayama 1943b: 99. Lectotype ♂; District of Balga, Manchoukuo, China; USNM, Washington, designated by Wood 1992: 82. Synonymy: Wood 1992b: 82.

References: (**tx**) Murayama 1943b: 99; Wood, S. L. 1992b: 82.

***perplexus* Wood** 1960b: 59. Holotype ♀; 16 km E Kamas, Utah [USA]; Wood Collection.

Distribution: North America (Utah in USA).

Hosts: Pinus ponderosa.

References: (**tx**) Wood, S. L. 1960b: 59–60, 1982b: 384.

***perrisi* (Chapuis)** 1869: 31 (*Hylesinus*). Syntypes, sex?; Corse; IRSNB, Brussels.

Figures: Balachowsky 1949a: 146, Grune 1979: 60, Pfeffer 1985a: 471, Stark 1952: 321 (female).

Distribution: Africa (Algeria/ Tunisia), Asia (Uttar Pradesh in India/ Iran/ Syria), Europe (Bulgaria/ Corsica/ France/ Greece/ Hungary/ Italy/ Romania/ Sardinia/ Sicily/ Spain/ Caucasus in W USSR/ Yugoslavia).

Hosts: *Cercis siliquastrum*, *Pistacia* spp., *Olea europea*.

References: (**bv**) Grune 1979: 61. (**cn**) Chorbadzhievo 1929; Gentry, J. W. 1965: 134; Grechkin 1956: 1483; Scheider 1958: 69. (**ec**) Graham 1969: 878; Halperin & Holzschuh 1984: 23; Kleine 1908c: 183, 1909a: 46, 78, 1944: 74; Mendel 1986c: 115; Novak, P. 1952: 413; Rafes 1962. (**hb**) Adeli 1972: 13; Balachowsky 1963a: 1278; Chorbadzhievo 1929; Davatchi 1958; Eichhoff 1881a: 39, 143; Greckin 1956: 1483; Halperin & Holzschuh 1984: 23; Knotek 1897: 136, 150, 1898b: 326, 1899b: 4, 1901: 567, 1907: 281; Kostin 1960: 131; Masutti 1964; Nusslin 1898: 274; Peyerimhoff 1915: 60, 1919: 259; Postner 1974: 405; Rafes 1962; Roonwal 1971b; Schneider 1958: 69; Spessivtsev 1922b: 77; Stark 1952: 231; Tschorbadjiev 1929: 164. (**ds**) Adeli 1972: 13; Balachowsky 1963a: 1278; Barthe 1896; Beeson 1961: 287; Buresh & Lazarov 1956; Calwer 1893; Chorbadzhievo 1929; Davatchi 1958: 75–76; Gentry, J. W. 1965: 134; Georghiou 1977: 73; Grune 1979: 60–61; Hagedorn 1910d: 24; Halperin & Holzschuh 1984: 23; Heyden, Reitter, & Weise 1883: 181, 1891: 668, 1906: 710; Kleine 1908c: 181–183, 1912b: 181, 1913a: 245, 307, 1914a: 16, 1934a: 134, 1934b: 623, 629; Knotek 1897: 136, 150–151, 1898b: 326, 1899b: 4, 285, 1901: 567, 1907: 280–282; Kobakhidze 1957: 178; Langhoffer 1915c: 157; Makhnovskii 1959: 67; Negru 1965: 117; Negru & Rosca 1967: 141; Normand 1937: 268; Novak, P. 1952: 413; Nusslin 1898: 274, 284; Perris 1877a: 415; Peyerimhoff 1915: 60, 1919: 251–252; Pfeffer 1936: 90; Pjatnitskii 1930a: 164; Postner 1974: 405; Ragusa 1924: 115; Reitter 1894a: 58; Roonwal 1971b; Sainte-Claire 1914: 470; Sainte-Claire & Mequignon 1938: 445; Schaufuss 1915: 1229; Schedl 1961b: 186, 1964a: 95, 1967c: 70, 1969c: 48, 1969g: 289, 1971d: 430; Stark 1927b: 88, 1952: 231; Stein & Weise 1877: 164; Tennenbaum 1915: 135; Tredl 1907: 11; Tschorbadjiev 1929: 164. (**tx**) Balachowsky 1949a: 149–150, 1963a: 1278; Bedel 1887:cxci; Chapuis 1869: 31, 1873: 239; Csiki 1907; Eichhoff 1881a: 39, 143; Fauvel 1889; Gemminger & Harold 1872: 2675; Grune 1979: 60–61; Hagedorn 1910a: 62; Iablokoff-Khnzorian 1961: 157; Kalina 1975; Perris 1877a: 415; Pfeffer 1941e: 169, 172, 1955a: 145–146, 1985a: 471; Portevin 1935: 322; Postner 1974: 405; Reitter 1894a: 58, 1913a: 58; Roonwal 1971b; Schedl 1934f: 1637, 1959n: 409–410,

1962p: 202; Sokanovskii 1954: 16; Spessivtsev 1922: 77; Stark 1952: 231.

abachidsei Stark 1952: 232. Syntypes, sex?; Georgia, USSR; IZL, Leningrad. Synonymy: Sokanovskii 1954: 16.

References: (**hb**) Stark 1952: 232. (**ds**) Stark 1952: 232. (**tx**) Iablokoff-Khnzorian 1961: 157; Michalski 1969b: 566; Sokanovskii 1954: 16; Stark 1952: 232.

kushkensis Sokanovskii 1954: 16. Holotype ♂; Turkmenia: Kushk, USSR; Sokanovskii Collection. Synonymy: Makhnovskii 1959: 67.

References: (**cn**) Greckin 1956: 1483; Znamenskii 1960: 59–62. (**hb**) Greckin 1956: 1483; Makhinovskii 1959: 67; Znamenskii 1960. (**ds**) Kadyrov 1988: 43, 1989. (**tx**) Makhinovskii 1959: 67; Michalski 1969b: 566; Pfeffer 1955a: 146, 1985a: 471; Schedl 1962p: 202; Sokanovskii 1954: 16, 1958: 39.

***piceae* Wood** 1974a: 11. Holotype ♂; Dixie Pass, Malheur National Forest, Oregon [USA]; Wood Collection.

Distribution: North America (Oregon in USA).

Hosts: *Picea engelmannii*.

References: (**hb**) Wood, S. L. 1982b: 384. (**ds**) Wood, S. L. 1982b: 384. (**tx**) Wood, S. L. 1974a: 11, 1982b: 384.

***pini* Eichhoff** 1881a: 131. Syntypes, sex?; Sudfrankreich; Hamburg Museum, lost.

Figures: Grune 1979: 60, Pfeffer 1985a: 471.

Distribution: Africa (Algeria/ Tunisia), Asia (Cyprus/ Turkey), Europe (Corsica/ France/ Greece/ Hungary/ Italy/ Sardinia/ Yugoslavia).

Hosts: *Pinus halepensis*.

References: (**ay**) Chararas 1971b; Pfeffer 1985a: 471. (**bv**) Chararas 1971b; Grune 1979: 61. (**cn**) Chararas 1976c; Wachtl 1901: 381. (**ec**) Kleine 1908c: 183; Novak, P. 1952: 413. (**hb**) Eichhoff 1881a: 38, 131; Henschel 1895a: 144; Karpinski 1933b: 26; Knotek 1897: 150, 1898b: 3, 325, 1901: 566; Lunardoni & Leonardi 1889: 432; Peyerimhoff 1919: 251; Postner 1974: 405; Wachtl 1901: 381. (**ds**) Arnoldi et al. 1955: 680; Barthe 1896; Eggers 1912f; Fowler 1891; Georghiou 1977: 73; Grune 1979: 61; Hagedorn 1910d: 24; Henschel 1895a: 144; Heyden, Reitter, & Weise 1883: 181, 1891: 668, 1906: 710; Karpinski 1931: 25, 1933b: 26; Kleine 1912b: 181, 1913a: 307, 1914a: 16, 1934a: 134; Knotek 1898b: 3, 325, 1901: 566; Langhoffer 1915c: 157; Lunardoni & Leonardi 1889: 432; Novak, P. 1952: 413, 1964; Peyerimhoff 1919: 251; Pfeffer 1984: 277, 1985a: 471; Pittioni 1943: 176; Postner 1974: 405; Reitter 1894a: 57; Sainte-Claire 1914: 470; Sainte-Claire & Mequignon 1938: 445; Schaufuss 1915: 1229; Schedl 1964a: 95, 1967c: 70, 1971d: 427; Tredl 1907: 11. (**tx**) Balachowsky 1949a: 148; Csiki 1907; Eggers 1912f: 29; Eichhoff 1881a: 38, 131, 1883a: 103, 125; Grune 1979: 60–61; Hagedorn 1910a: 62; Henschel 1895a: 44; Lunardoni & Leonardi 1889: 432; Peyerimhoff 1931: 274; Pfeffer 1941e: 170, 178, 1955a: 146, 1985a: 471; Portevin 1935: 322; Postner 1974: 405; Reitter 1894a: 57, 1913a: 57; Schedl 1934f: 1637, 1979c: 195; Semenov 1902: 273.

attritus Peyerimhoff 1931: 274. Syntypes ♀; Hyeres, Algeria, not given. Synonymy: Balachowsky 1949a: 148.

References: (**cn**) Acatay 1943a: 64; Schimitschek 1944: 167. (**hb**) Acatay 1943a: 64; Schimitschek 1944: 167. (**ds**) Arnoldi et al. 1955: 680; Normand 1937: 268; Peyerimhoff 1933b: 367; Pfeffer 1947d: 126; Sainte-Claire & Mequignon 1938: 445. (**tx**) Balachowsky 1949a: 148; Peyerimhoff 1931: 274–275; Pfeffer 1941e: 170, 178; Schedl 1934f: 1636.

***pinicolens* Wood** 1954b: 512. Holotype ♀; Logan Dry Canyon, Utah [USA]; USNM, Washington.

Figures: Bright 1964: 168, Bright & Stark 1973: 155, Wood 1954b: 503, 511.

Distribution: North America (Arizona, California, Colorado, S Idaho, Nevada, New Mexico, Oregon, Utah, Wyoming in USA).

Hosts: Pinus *cembroides, P. edulis, P. engelmannii, P. flexilis, P. lambertiana, P. leiophylla, P. monophylla, P. ponderosa, P.* spp.

References: (**cn**) Hopkins 1904a: 18. (**hb**) Bright & Stark 1973: 58; Chamberlin 1958: 62; Gast et al. 1989: 383; Hopkins 1904a: 18; Wood, S. L. 1954b: 512, 1982b: 377. (**ds**) Bright & Stark 1973: 58; Chamberlin 1958: 62; Furniss, R. L. & Carolin 1977: 345; Gast et al. 1989: 383; Wood, S. L. 1951a: 127, 1972a: 410, 1982b: 377. (**tx**) Bright 1964: 165; Bright & Stark 1973: 155; Chamberlin 1958: 62; Hoebeke 1978; Wood, S. L. 1954b: 508, 511–512, 1972a: 410, 1977c: 384, 1982b: 377.

tuberculatus Bright 1964: 165. Holotype ♀; Crooked Creek, Mono Co., California [USA]; CAS, San Francisco. Synonymy: Wood 1977c: 384.

References: (**hb**) Bright & Stark 1973: 59. (**ds**) Bright & Stark 1973: 59. (**tx**) Bright 1964: 165, 168; Wood, S. L. 1977c: 384.

***ponderosae* Swaine** 1924a: 236. Holotype ♀; Midday Valley, Merritt, British Columbia [Canada]; CNCI, Ottawa.

Figures: Bright 1976d: 98, 196, Wood 1954b: 519.

Distribution: North America (British Columbia in Canada/ N California, Idaho, Montana, Utah in USA).

Hosts: *Pinus contorta, P. ponderosae*.

Notes: (3) Wood 1954b: 521 (redescribed).

References: (**cn**) Doane et al. 1936; Lindgren 1980a: 61. (**hb**) Bright 1976: 100; Bright & Stark 1973: 59; Chamberlin 1939: 131, 1958: 63; Doane et al. 1936; Lindgren 1980a: 61; Wood, S. L. 1954b: 521, 1982b: 382. (**ds**) Baine 1974: 15; Bright 1976d: 100; Bright & Stark 1973: 59; Chamberlin

1939: 131, 1958: 63; Gast et al. 1989: 385; Keen 1929a: 15; Kleine 1934a: 134; Leng & Mutchler 1927: 51; Wood, S. L. 1951a: 127, 1972a: 410, 1982b: 382. (**tx**) Bright 1967b: 673, 1976d: 98, 100, 196; Bruck 1933b: 104–106, 1936a: 112, 118; Chamberlin 1939: 131, 1958: 63; Keen 1929a: 15; de Ruette 1970: 99; Swaine 1924a: 236; Wood, S. L. 1951a: 127, 1951b: 31, 1954b: 503, 518, 521, 1960b: 59, 1972a: 410, 1982b: 382.

***pseudotsugae* Wood** 1954b: 522. Holotype ♂; Prescott National Forest, Arizona [USA]; USNM, Washington.
Figures: Wood 1954b: 511.
Distribution: North America (N Arizona in USA).
Hosts: *Pseudotsuga menziesii*.
References: (**hb**) Wood, S. L. 1954b: 522. (**ds**) Wood, S. L. 1982b: 383. (**tx**) Wood, S. L. 1954b: 508, 511, 522, 1982b: 383.

***radiatae* Swaine** 1918a: 56–57. Holotype ♀; Carmel, California [USA]; CNCI, Ottawa.
Figures: Wood 1954b: 519.
Distribution: North America (Carmel area in California in USA).
Hosts: *Pinus radiata*.
References: (**cn**) Doane et al. 1936; Keen 1929: 57; Swaine 1918a: 56, 57. (**hb**) Bright & Stark 1973: 60; Chamberlin 1939: 129; Doane et al. 1936; Keen 1929: 57; Swaine 1918a: 56, 57; Wood, S. L. 1954b: 520, 1982b: 382. (**ds**) Bright & Stark 1973: 60; Chamberlin 1925, 1939: 129; Hopping 1922; Keen 1929: 57, 1929a: 15; Kleine 1934a: 134; Leng 1920: 338; Wood, S. L. 1982b: 382. (**tx**) Bright 1967b: 673; Bruck 1933b: 103–105, 1936a: 111–115; Chamberlin 1939: 129; Keen 1929a: 15; de Ruette 1970: 99; Swaine 1918a: 56–57, 1924a: 236; Wood, S. L. 1954b: 508, 519–520, 1982b: 382.

***rossicus* Semenov** 1902: 272. Syntypes 4 ♂ ♀; Distr. Jelabuga prov. Vjatkensis, USSR; P. Semenov Collection and J. Schevyrew Collection.
Figures: Pfeffer 1985a: 471, Stark 1952: 234 (adult).
Distribution: Asia (E USSR), Europe (Finland/Sweden/W USSR).
Hosts: *Picea excelsa, P. obovata*, uncommon in *Abies siberica*.
References: (**bv**) Grune 1979: 53; Hellen 1921. (**cn**) Esterberg 1959; Hellen 1921; Juutinen 1960: 30. (**ec**) Kangas 1946b: 23; Palmen 1944: 60; Pfeffer 1960: 345; Rafes 1962; Saalas 1917a: 222, 1951: 16. (**hb**) Karpinski 1933b: 26; Krivolutskaya 1960; Lindberg 1963: 243; Postner 1974: 405; Rafes 1962; Saalas 1951: 16; Spessivtsev 1923: 200; Stark 1952: 234. (**ds**) Belousov 1916, 1917: 334–337; Butovitsch & Heqvist 1947; Esterberg 1959; Grune 1979: 63; Hagedorn 1910d: 24; Hansen, V. 1939; Hellen 1947; Heyden, Reitter, & Weise 1906: 710; Karpinski 1931: 25, 1933b: 26; Klefbeck & Sjoberg 1960: 230; Kleine 1912b: 181, 1934a: 134; Krivolutskaya 1960: 1983; Nuorteva 1971: 71; Palm 1946: 122; Palmen 1944: 60; Postner 1974: 405; Saalas 1917a: 222; Schaufuss 1915: 1229; Stark 1931a: 25, 1952: 234; Zinovjev 1955: 187. (**tx**) Eggers 1923b; Grune 1979: 63; Hagedorn 1910a: 62; Murayama 1943: 98; Pfeffer 1941e: 169, 173, 1955a: 146, 1985a: 471; Postner 1974: 405; Reitter 1913a: 56; Schedl 1934f: 1637; Semenov 1902: 272; Spessivtsev 1916: 66–67, 1922a: 467–468, 491, 1923: 202–204, 1925a: 168, 1931: 42; Stark 1952: 234.

***sansoni* Swaine** 1924a: 235. Holotype ♂; Banff, Alberta [Canada]; CNCI, Ottawa.
Figures: Wood 1954b: 519.
Distribution: North America (Alberta in Canada/Colorado, Oregon, Utah, Wyoming in USA).
Hosts: *Picea engelmannii, P. glauca, P. pungens, P.* spp.
Notes: (3) Wood 1954b: 517 (redescribed).
References: (**cn**) Doane et al. 1936. (**hb**) Bright 1976d: 99; Chamberlin 1939: 131; Doane et al. 1936; Furniss, M. M. & Johnson 1987: 376; Wood, S. L. 1954b: 517, 1982b: 380. (**ds**) Bright 1976d: 99; Chamberlin 1939: 132; Furniss, M. M. & Johnson 1987: 376; Kleine 1934a: 134; Leng & Mutchler 1927: 51; Wood, S. L. 1972a: 410, 1982b: 380. (**tx**) Bright 1967b: 673, 1976d: 99; Bruck 1933b: 104–106; Chamberlin 1939: 132; de Ruette 1970: 99; Swaine 1924a: 235–236; Wood, S. L. 1954b: 508, 517–519, 1972a: 410, 1982b: 380.

engelmanni Wood 1951b: 31. Holotype ♀; Logan Dry Canyon, Utah [USA]; USNM, Washington. Synonymy: Wood 1954b: 517.
References: (**tx**) Wood, S. L. 1951b: 31, 1954b: 517.

***simplex* LeConte** 1876: 383. Lectotype ♀; Mojave Desert, California [USA]; MCZ, Cambridge, designated by Wood 1982b: 379.
Figures: Wood 1954b: 511.
Distribution: North America (Baja California Norte in Mexico/California in USA).
Hosts: *Pinus sabiniana*, rare in *P. jeffreyi* and *P. ponderosa*.
Notes: (3) Wood 1954b: 513 (redescribed).
References: (**cn**) Doane et al. 1936; Packard 1890: 725; Swaine 1918a: 56. (**hb**) Bright & Stark 1973: 57; Chamberlin 1939: 129; Doane et al. 1936; Swaine 1918a: 56; Wood, S. L. 1954b: 513, 1982b: 379. (**ds**) Bright & Stark 1973: 57; Chamberlin 1925, 1939: 129; Fall 1906: 203; Hagedorn 1910d: 24; Henshaw 1882: 269, 1885: 149; Hopping 1922; Keen 1929a: 15; Kleine 1912b: 81, 1914b: 390, 1934a: 134; Leng 1920: 338; Swaine 1909: 88; Wood, S. L. 1982b: 379. (**tx**) Bruck 1933b: 103–104, 1936a: 36, 111–113; Chamberlin 1939: 129; Hagedorn 1910a: 63; Keen 1929a: 15; LeConte 1876: 383; Schedl 1947a: 37; Swaine 1909: 88, 1918a: 56, 1924a: 234; Wood, S. L. 1951a: 128, 1954b: 508, 511–513, 1982b: 379.

swainei Bruck 1933b: 105. Holotype, sex?; Mt. Diablo, California [USA]; OSUC, Columbus.
Synonymy: Wood 1954b: 513.
References: (**cn**) Doane et al. 1936. (**hb**) Chamberlin 1939: 130; Doane et al. 1936; Wood, S. L. 1954b: 513. (**ds**) Blackwelder 1939; Chamberlin 1939: 130. (**tx**) Bruck 1933b: 105–106, 1936a: 112, 117–118; Chamberlin 1939: 130; Wood, S. L. 1954b: 513.

***taireiensis* Murayama** 1943b: 98. Holotype, sex?; Tairei, Manchuria; Murayama Collection in USNM, Washington.
Distribution: Asia ("Manchuria" in China/ Korea).
Hosts: *Picea koraiensis*.
References: (**ds**) Murayama 1943b: 97. (**tx**) Murayama 1943b: 97–98.

***teplouchovi* Spessivtsev** 1916: 65. Syntypes ♂♀; Village Iljinskoe, right bank of Obwa, tributary of Kama, Government Perm, and Solvytshegodsk Government Vologda, East Russia; not given.
Figures: Pfeffer 1985a: 471, Stark 1952: 236, 238 (declivity, galleries), Tsai & Li 1959: 87.
Distribution: Asia (Heilongjiang, Liaoning in China/ E USSR), Europe (N Finland/ N Sweden/ W USSR).
Hosts: *Picea excelsa, P. koraiensis, P. obovata, Larix siberica, Abies siberica*.
References: (**bv**) Grune 1979: 63; Rozhkov 1970: 139. (**cn**) Esterberg 1959; Kurenzov 1935c: 188. (**ec**) Kurenzov 1934a: 54; Pfeffer 1960: 345; Rafes 1962. (**hb**) Karpinksi 1933b: 26; Krivolutskaya 1960; Kurenzov 1935a: 20, 29, 1948b: 111; Lindberg 1963: 242; Lundberg 1963a; Postner 1974: 405; Rafes 1962; Rozhkov 1970: 139; Stark 1952: 236. (**ds**) Butovitsch 1960b: 114; Esterberg 1959; Florov 1949: 81; Grune 1979: 63; Karpinski 1933b: 26; Kleine 1934a: 134; Krivolutskaya 1960, 1983; Kurenzov 1934a: 54, 1935a: 20, 29, 1935c: 188, 1936b: 351, 1967; Mandl 1931: 25; Nuorteva 1971: 71; Pfeffer 1960: 345; Postner 1974: 405; Rozhkov 1970: 139; Sokanovskii 1960; Stark 1931d: 546, 1952: 236; Yanovskii 1977a; Yanovskii & Tegshzhargal 1985: 408; Zinovjev 1955: 187. (**tx**) Eggers 1922c; Grune 1979: 63; Klefbeck & Sjoberg 1960: 235; Kurenzov 1941a: 137–138, 1948b: 111; Pfeffer 1941: 176, 1955a: 146, 1985a: 471; Postner 1974: 405; Schedl 1934f: 1637; Sokanovskii 1960: 676; Spessivtsev 1916: 65–66, 1922a: 468, 491, 1931: 44–46; Stark 1952: 236; Tsai & Li 1959: 87.

***vandykei* Bruck** 1933b: 104. Holotype ♂; Mount St. Helena, California [USA]; OSUC, Columbus.
Figures: Bright 1976d: 98 (declivity), Wood 1954b: 503, 511.
Distribution: North America (British Columbia in Canada/ California, W Oregon, W Washington in USA).
Hosts: *Pseudotsuga menziesii*.
Notes: (3) Wood 1954b: 510 (redescribed).
References: (**bv**) Daterman, Rudinsky, & Nagel 1965. (**cn**) Doane et al. 1936. (**ec**) Deyrup & Gara 1978: 274. (**hb**) Bright 1976d: 97; Bright & Stark 1973: 58; Chamberlin 1939: 130, 1958: 62; Daterman, Rudinsky, & Nagel 1965; Doane et al. 1936; Wood, S. L. 1954b: 510, 1982b: 375. (**ds**) Blackwelder 1939; Bright 1976d: 97; Bright & Stark 1973: 99; Chamberlin 1939: 130, 1958: 62; Furniss, R. L. & Carolin 1977: 345; Miller, R. F., Morgan, & Hicock 1985: 500; Wood, S. L. 1972a: 410, 1982b: 375. (**tx**) Bright 1976d: 97–98; Bruck 1933b: 104–105, 1936a: 36, 114–115; Chamberlin 1939: 130, 1958: 62; de Ruette 1970: 99; Wood, S. L. 1954b: 503, 510–512, 1972a: 410, 1982b: 375.

***zhobi* (Stebbing)** 1909b: 18 (*Phloeosinus*). Holotype ♀; labeled Skinjkai, Zhob, Baluchistan, published as North Zhob and Takt-i-Suliman mountains; FRI, Dehra Dun.
Figures: Stebbing 1914:pl. K, opposite p. 511, fig. 2.
Distribution: Asia (Pakistan).
Hosts: *Pinus gerardiana*.
References: (**cn**) Stebbing 1914: 496. (**ec**) Stebbing 1914: 496. (**hb**) Beeson 1922c: 496; Roonwal 1971b: 314; Stebbing 1909b: 18, 1911a: 7, 1914: 496; Zocchi 1956: 142. (**ds**) Beeson 1922c: 496, 1961: 285; Kleine 1934a: 134; Roonwal 1971b. (**tx**) Beeson 1922c: 496; Roonwal 1971b: 314; Stebbing 1909b: 6, 18, 1914: 496; Zocchi 1956: 142.

Genus *Bothinodroctonus* Schedl

BOTHINODROCTONUS SCHEDL 1969a: 208. Type-species: *Bothinodroctonus bicinctus* Schedl, monobasic.
References: (**hb**) Wood, S. L. 1986a: 57. (**ds**) Wood, S. L. 1986a: 57. (**tx**) Schedl 1969a: 208; Wood, S. L. 1986a: 57.

***bicinctus* Schedl** 1969a: 209. Holotype ♂; Borneo (Sarawak), Sejingkat to Tokyo, intercepted; PPST, Tokyo.
Figures: Schedl 1969a: 209.
Distribution: Indonesia (Borneo).
Notes: (3) Schedl 1969a: 209 (had the sexes reversed).
References: (**tx**) Schedl 1969a: 209, 1979c: 37.

***indicus* Wood** 1988b: 191. Holotype ♀; Tavargati, Belgaum Div., Bombay [India]; FRI, Dehra Dun.
Distribution: Asia (Bengal, Maharastra in India/ Sri Lanka).
Hosts: *Odina wodier*.
References: (**tx**) Wood, S. L. 1988b: 191.

***setosus* Wood** 1988b: 192. Holotype ♀; North Andaman Island; Wood Collection.
Distribution: Asia (North Andaman in Andaman Islands).
Hosts: *Canarium euphyllum*.
References: (**tx**) Wood, S. L. 1988b: 192.

Genus *Carphobius* Blackman

CARPHOBIUS BLACKMAN 1943c: 398. Type-species: *Carphobius arizonicus* Blackman, original designation.
Keys: Wood 1982b: 369.
References: (**hb**) Wood, S. L. 1982b: 369, 1986a: 57. (**ds**) Wood, S. L. 1982b: 369, 1986a: 57. (**tx**) Arnett 1960: 1041; Blackman 1943c: 398; Schedl 1972q: 255; Wood, S. L. 1982b: 369, 1986a: 57.

arizonicus Blackman 1943c: 398. Holotype ♀; Miller Canyon, Huachuca Mountains, Arizona [USA]; USNM, Washington.
Figures: Atkinson & Equihua 1988: 87; Blackman 1943c:figs. 41–45.
Distribution: North America (Chihuahua, Durango, Mexico in Mexico/ Arizona, New Mexico in USA).
Hosts: *Juniperus deppeana*.
Notes: Breeds in insect-girdled twigs in living trees.
References: (**hb**) Wood, S. L. 1982b: 370. (**ds**) Atkinson & Equihua 1988: 86; Thomas, J. B. 1966; Wood, S. L. 1960b: 60, 1982b: 370. (**tx**) Atkinson & Equihua 1988: 87; Blackman 1943c: 398; Wood, S. L. 1960b: 60, 1982b: 370.

cupressi **Wood** 1974a: 12. Holotype ♂; San Marcos, Guatemala; Wood Collection.
Distribution: North America (Guatemala).
Hosts: *Cupressus lucitanica*.
References: (**hb**) Wood, S. L. 1982b: 370. (**ds**) Wood, S. L. 1982b: 370. (**tx**) Wood, S. L. 1974a: 12, 1982b: 370.

pilifer **Wood** 1983a: 652. Holotype ♀; Tres Marias, Morelos, Mexico; Wood Collection.
Distribution: North America (Morelos in Mexico).
Hosts: *Cupressus lindleyi*.
References: (**hb**) Atkinson et al. 1986: 25. (**ds**) Atkinson & Equihua 1985a: 79; Atkinson et al. 1986: 25. (**tx**) Wood, S. L. 1983a: 652.

Genus *Chortastus* Schaufuss

CHORTASTUS SCHAUFUSS 1905: 15. Type-species: *Chortastus camerunus* Schaufuss, monobasic.
Afrochramesus Schedl 1971g: 197. Type-species: *Afrochramesus baguenai* Schedl, original designation. Synonymy: Wood 1984b: 224.
References: (**tx**) Schedl 1971g: 197; Wood, S. L. 1984b: 224.
Keys: Browne 1973c: 17–30; Schedl 1977a: 37–38.
References: (**bv**) Schedl 1960f: 10. (**hb**) Browne 1973c: 17–30; Schedl 1958d: 192, 1977a: 37–38; Wood, S. L. 1986a: 57. (**ds**) Browne 1973c: 17–30; Hagedorn 1910d: 24; Schedl 1977a: 37–38; Wood, S. L. 1986a: 57. (**tx**) Browne 1973c: 17–30; Hagedorn 1909a: 737, 1910a: 35, 56–57; Hopkins 1914: 118, 1915c: 226; Schaufuss 1905: 15; Schedl 1957d: 28, 1957e: 865–883, 1959n: 393, 1977a: 37–38; Wood, S. L. 1986a: 57.

baguenai **(Schedl)** 1971g: 197 (*Afrochramesus*). Holotype, sex?; Guinea espanola, Evinayong; Instituto Espanol de Entomologia, Madrid.
Distribution: Africa (Spanish Guinea).
References: (**tx**) Schedl 1971g: 197.

camerunus **Schaufuss** 1905: 15 (reprint p. 8). Syntypes ♂ ♀; Nord-Kamerun; Hamburg Museum, lost.
Figures: Browne 1973c: 23, Schedl 1959n: 392, 395, 397 (male, antenna, galleries).
Distribution: Africa (Cameroon/ Gabon/ Zaire).
Hosts: *Celtis brieyi, Staudtia stipitata*.
References: (**ec**) Schedl 1958d: 187. (**ds**) Browne 1973c: 22, 1981a: 126; Hagedorn 1910d: 24; Kleine 1912b: 181, 1914b: 310; Nunberg 1961a: 328; Schedl 1962h: 57, 1962k: 1063, 1964f: 617, 1966c: 222, 1967e: 209, 1971g: 190, 1977d: 280; Wood, S. L. 1957e: 1273. (**tx**) Browne 1973c: 22–23; Hagedorn 1910a: 57; Hopkins 1914: 118, 132; Lucas 1920: 183; Schaufuss 1905: 15 (reprint p. 8); Schedl 1950d: 7, 1957e: 868, 1959n: 395, 398, 1962k: 1063, 1977a: 38, 1979c: 50. (**ms**) Lucas 1920: 183.

medius **Eggers** 1924: 100. Syntypes ♂ ♀; Albertville (Congostaat); 1 in MRCB, Tervuren, 2 in Eggers Collection, in NHMW, Wien, type restricted to Tervuren syntype by Schedl 1979c: 150.
Figures: Schedl 1959r: 40 (galleries).
Distribution: Africa (Zaire).
Hosts: *Staudtia stipitata*.
References: (**ec**) Schedl 1958d: 187. (**hb**) Schedl 1958d: 187. (**ds**) Browne 1973c: 24; Schedl 1977a: 38. (**tx**) Browne 1973c: 24; Eggers 1924: 100, 1935c: 351; Schedl 1950d: 7, 1959n: 400, 1959r: 40, 1977a: 38, 1979c: 150.
brunneus Nunberg 1967b: 317. Holotype ♀?; Bas-Congo, Kimwenza; MRCB, Tervuren. Synonymy: Browne 1973c: 24.
References: (**tx**) Browne 1973c: 24; Nunberg 1967b: 317, 336, 1976a: 317.

minimus **Hagedorn** 1909a: 738. Syntypes 3, sex?; Kamerun; MNB, Berlin.
Figures: Schedl 1959n: 396 (galleries).
Distribution: Africa (Cameroon/ Zaire).
Hosts: *Staudtia gaboensis, S. stipitata*.
References: (**bv**) Schedl 1960f: 65. (**ds**) Browne 1973c: 25; Ghesquiere 1933a: 33–35, 1933b: 783; Hagedorn 1910d: 24; Kleine 1912b: 181, 1914b: 310; Schedl 1960f: 39, 1977a: 38. (**tx**) Browne 1973c: 25; Eggers 1923a: 179, 1924: 100–101, 1935c: 299–301; Hagedorn 1909a: 738, 1910a: 57; Schedl 1959n: 402, 1977a: 38.
agnatus Eggers 1935c: 301. Lectotype ♂; Kamerun; USNM, Washington, designated by Anderson & Anderson 1971: 3. Synonymy: Browne 1973c: 25.
Notes: (3) Schedl 1962k: 1062 (cites *biseriatus* Eggers, nomen nudum, synonymy).
References: (**ec**) Schedl 1958d: 187. (**hb**)

Schedl 1958d: 187, 191. (**ds**) Schedl 1966c: 222, 1967e: 209, 1977a: 38, 1977d: 280. (**tx**) Anderson, W. H. & Anderson 1971: 3; Browne 1973c: 25; Eggers 1935c: 301; Schedl 1959n: 394, 1962k: 1062, 1977a: 38, 1979c: 15.

sulcatus Eggers 1935c: 301. Syntypes, sex?; Congostaat (Sankuru); MRCB, Tervuren. Synonymy: Browne 1973c: 25.
References: (**tx**) Browne 1973c: 25; Eggers 1935c: 301–302; Schedl 1959n: 407.

***orientalis* Schedl** 1957e: 868. Holotype, sex?; Tanganyika, Kushoto; BMNH, London.
Distribution: Africa (Tanzania).
Hosts: *Ocotea usambarensis*.
References: (**ds**) Browne 1973c: 21, 1984a: 151; Gardner 1957a: 30; Schedl 1977a: 38. (**tx**) Browne 1973c: 21; Schedl 1957e: 868, 1959n: 404, 1977a: 38, 1979c: 180.

***schenklingi* Hagedorn** 1909a: 737. Syntypes ♂♀; Kamerun; MNB, Berlin.
Figures: Browne 1973c: 23.
Distribution: Africa (Cameroon/ Gabon).
References: (**hb**) Roberts 1969b: 123. (**ds**) Browne 1973c: 21, 1980b: 382; Hagedorn 1910d: 24; Kleine 1912b: 181, 1914b: 310; Schedl 1962h: 57, 1962k: 1063, 1965e: 350, 1966c: 223, 1971g: 190, 1977a: 38; Wood, S. L. 1957e: 1273. (**tx**) Browne 1973c: 23; Eggers 1923a: 179, 1924: 100–101; Hagedorn 1909a: 737, 1910a: 57; Schedl 1959n: 404, 1962k: 1063.

Subfamily Scolytinae Latreille

See also citations of Family Scolytidae.

Scolytinae
References: Balachowsky 1949a: 2; Bedel 1888b: 386, 405; Handlirsch 1925: 690; Hopkins 1915c: 165, 224–225; LeConte & Horn 1883: 512; Leng 1920: 337; Lucas 1920: 57; Nunberg 1954: 13–14; Wood, S. L. 1978a: 106, 109, 112, 1982b: 56, 1986a: 57; Yin, Huang, & Li 1984: 18.

Eccoptogasteridae
References: Tredl 1907: 4.

Eccoptogasterinae
References: Hagedorn 1909: 162, 1910a: 24, 120, 1910d: 79; Lucas 1920: 24; Nusslin 1911: 428; Reitter 1906: 707; Tredl 1907: 5.

Eccoptogasterini
References: Spessivtsev 1913a: 28.

Tribe Scolytini Latreille

See also citations of Family Scolytidae and Subfamily Scolytinae.

Scolytini
References: Barbey 1901: 16; Bedel 1888b: 386, 405; Eichhoff 1881a: 33, 39, 1883a: 98, 104; Ferrari 1867a: 3; Handlirsch 1925: 690; Hopkins 1915c: 165, 224–225; LeConte & Horn 1883: 512; Leng 1920: 337; Lovendal 1889: 5–6; Lucas 1920: 57; Wood, S. L. 1972g: 243, 1978a: 112, 1982b: 62, 1986a: 57.

Scolytidae verae
References: Chapuis 1869: 53, 1873: 261.

Scolytides
References: Blandford 1896e: 119.

Camptoceridae (also includes the French Camptocerides)
References: Chapuis 1869: 49, 1873: 257; Ferrari 1867a: 3; Hopkins 1915c: 225; Lacordaire 1866: 357, 366; Leng 1920: 337.

Camptocerinae
References: Hopkins 1915c: 225.

Camptocerini
References: Leng 1920: 337.

Eccoptogasteridae
References: Tredl 1907: 5.

Eccoptogasterini
References: Reitter *in* Heyden, Reitter, & Weise 1906: 707.

Genus *Cnemonyx* Eichhoff

CNEMONYX EICHHOFF 1868c: 150. Type-species: *Cnemonyx galeritus* Eichhoff, monobasic.

Ceratolepis Chapuis 1869: 52. Type-species: *Ceratolepis jucundus* Chapuis, monobasic. Synonymy: Wood 1972c: 140.
References: (**tx**) Blandford 1896e: 52, 126–127; Chapuis 1869: 52, 1873: 260; Hagedorn 1910a: 126–127, 1910d: 82; Schedl 1962q: 485; Wood, S. L. 1972c: 140, 1972g: 244.

Loganius Chapuis 1869: 52. Type-species: *Loganius flavicornis* Chapuis, monobasic. Synonymy: Wood 1972c: 140.
References: (**tx**) Blandford 1896e: 128–131; Chamberlin 1939: 236–237; Chapuis 1869: 52, 1873: 260; Hagedorn 1910a: 127–128, 1910d: 81; Schwarz 1894: 44; Swaine 1909: 126; Thatcher 1950: 89; Wood, S. L. 1967c: 119, 1972c: 140, 1972g: 244.

Minulus Eggers 1912: 206. Type-species: *Minulus barbatus* Eggers, monobasic. Synonymy: Eggers 1923: 138.
References: (**tx**) Eggers 1912: 206, 1923: 138.

Coptodryas Schedl 1948f: 262. Type-species: *Coptodryas hylurgoides* Schedl, monobasic, preoccupied by Hopkins 1915. Synonymy: Wood 1972g: 244.
References: (**tx**) Schedl 1948f: 262, 1952b: 363; Wood, S. L. 1972g: 244.

Coptosomus Schedl 1952b: 363. Type-species: *Coptodryas hylurgoides* Schedl, automatic. Synonymy: Wood 1972g: 244.
References: (**tx**) Schedl 1952b: 363; Wood, S. L. 1972g: 244.

Keys: Blandford 1896e: 128, Wood, S. L. 1982b: 394.

References: (**hb**) Wood, S. L. 1986a: 58. (**ds**) Wood, S. L. 1986a: 58. (**tx**) Arnett 1960: 1040, 1968: 1040; Blandford 1896e: 124; Chapuis 1869: 52, 1873: 260; Eggers 1923: 138; Eichhoff 1868c: 150; Hagedorn 1910a: 128, 1910d: 81; Wood, S. L. 1972c: 140, 1972g: 244, 1982b: 393, 1986a: 58.

***acuminatus* Schedl** 1976a: 61. Holotype, sex?; Encruzihada, Bahia, Brazil; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1976a: 61.

***amazonicus* (Eggers)** 1929d: 60 (*Loganius*). Lectotype ♂; Brasilia (Santarem, Amazonas), designated by Anderson & Anderson 1971: 4.
Distribution: South America (Brazil).
References: (**ds**) Blackwelder 1947: 788. (**tx**) Anderson, W. H. & Anderson 1971: 4; Browne 1970: 543; Eggers 1929d: 60; Schedl 1962q: 486; 1979c: 17; Wood, S. L. 1972g: 244.

amazonicus Schedl 1952d: 349 (*Ceratolepis*). Syntypes, sex?; Brasilien, Santarem; Schedl Collection in NHMW, Wien. Synonymy: Schedl 1962q: 486.
References: (**tx**) Schedl 1952d: 349, 1962q: 486; Wood, S. L. 1972g: 244.

***atratus* (Blandford)** 1896e: 129 (*Loganius*). Lectotype ♀; Bugaba, Chiriqui, Panama; BMNH, London, designated by Wood 1982b: 398.
Distribution: North America (Costa Rica/Panama).

References: (**hb**) Wood, S. L. 1982b: 398. (**ds**) Blackwelder 1947: 788; Hagedorn 1910d: 81; Kleine 1913b: 150, 1914b: 365; Wood, S. L. 1982b: 398. (**tx**) Blandford 1896e: 129; Hagedorn 1910a: 128; Wood, S. L. 1969a: 9, 1972g: 244, 1982b: 398.

nitens Wood 1969a: 9. Holotype ♂; Puerto Viejo, Heredia Prov., Costa Rica; Wood Collection. Synonymy: Wood 1972e: 190, 1972g: 244.

References: (**tx**) Wood, S. L. 1969a: 9, 1972e: 190, 1972g: 244.

***barbatus* (Eggers)** 1912c: 207 (*Minulus*). Holotype, sex?; Creta (intercepted?); Museo Zoologico, Universitatis Havniae [now Copenhagen].

Distribution: Unknown, presumably South America (intercepted at Crete).

Notes: (1) Wood 1972g: 244 (to *Cnemonyx*). (3) Schedl 1939d: 407 (citation of *minulus* Eggers, nomen nudum, is apparently this species).

References: (**ec**) Wichmann 1955a: 96. (**ds**) Wichmann 1955a: 96. (**tx**) Eggers 1912c: 207, 1923b: 138; Hopkins 1914: 125; Lucas 1920: 419; Reitter 1913: 12; de Ruette 1970: 99; Schedl 1939d: 407, 1962q: 486, 1979c: 34; Wood, S. L. 1972c: 140, 144, 1972g: 244. (**ms**) Lucas 1920: 419.

***boliviae* (Blackman)** 1943c: 378 (*Camptocerus*). Holotype ♀; San Borja, Beni, Bolivia; USNM, Washington.

Distribution: South America (Bolivia).

Notes: (1) Wood 1972g: 244 (to *Cnemonyx*).

References: (**tx**) Blackman 1943c: 378–379; Wood, S. L. 1972g: 244.

***brevisetosus* Schedl** 1939d: 407. Syntypes, sex?; Isla Martin Garcia, Argentina; Schedl Collection in NHMW, Wien and Viana Collection.

Distribution: South America (Argentina).

Notes: (1) Schedl 1979c: 47 (citation of holotype invalid).

References: (**hb**) Viana 1964: 129. (**ds**) Blackwelder 1947: 787; Schedl 1979e: 57; Viana 1964: 129. (**tx**) Schedl 1939d: 407, 1951h: 283, 1951m: 75, 1952a: 445, 1979c: 47; Wood, S. L. 1972g: 244.

***confinis* (Wood)** 1961d: 94 (*Loganius*). Holotype ♀; 4 miles E La Pas on road to Las Cruces, Baja California, Mexico; CAS, San Francisco.

Distribution: North America (Baja California Sur in Mexico).

Hosts: *Sapium biloculare*.

References: (**tx**) Wood, S. L. 1961d: 94, 1972g: 244.

***creber* Schedl** 1951m: 76. Syntypes ♂; Brasilien, Santa Catarina, Nova Teutonia; Schedl Collection in NHMW, Wien and Plaumann Collection.

Distribution: South America (Brazil).

Notes: (1) Schedl 1979c: 68 (citation of holotype invalid).

References: (**ds**) Schedl 1967d: 1. (**tx**) Schedl 1951m: 75–76, 1979c: 68; Wood, S. L. 1972g: 244.

***difformis* (Schedl)** 1951m: 74 (*Loganius*). Syntypes, sex?; Brasilien, Santa Catarina, Nova Teutonia; Schedl Collection in NHMW, Wien and Plaumann Collection.

Distribution: South America (Brazil).

Notes: (1) Wood, S. L. 1972g: 244 (to *Cnemonyx*), Schedl 1979c: 80 (citation of holotype invalid).

References: (**ds**) Nunberg 1958a: 484. (**tx**) Nunberg 1958a: 484; Schedl 1951h: 284, 1951m: 74, 1958f: 34, 1979c: 80; Wood, S. L. 1972g: 244.

cirratus Nunberg 1958: 480, 482 (*Loganius*). Holotype ♂?; Santa Catarina, Brazil; IZW, Warsaw. Synonymy: Wood 1972g: 244.

References: (**tx**) Nunberg 1958: 480, 482; Schedl 1960i: 103; Wood, S. L. 1972g: 244.

***equihuai* Wood** 1983: 654. Holotype ♂; Km 150 carr. Melaque-Puerto Vallarta, Jalisco, Mexico; Wood Collection.

Distribution: North America (Jalisco in Mexico).

Hosts: *Hura polyandra*.

References: (**tx**) Wood, S. L. 1983: 654.

***errans* (Blandford)** 1896e: 127 (*Ceratolepis*). Lectotype ♂; "Mexican" tobacco refuse intercepted at Paris; BMNH, London, designated by Wood 1972e: 192.

Distribution: South America (Brazil).

Notes: (3) Original description cites source of type series as "Mexican" tobacco refuse; Brazil obviously was the source because all known specimens are from Brazil.

References: (**ec**) Wichmann 1955a: 107. (**ds**) Blackwelder 1947: 787; Ferrer 1942; Hagedorn 1910d: 82; Kleine 1913b: 150, 1914b: 353; Wichmann 1955a: 107. (**tx**) Blackman 1943c: 380; Blandford 1896e: 127; Hagedorn 1910a: 127; Schedl 1936i: 104, 1940a: 329–330, 1952d: 343, 1962q: 486, 1979c: 91; Wood, S. L. 1972e: 192, 1972g: 244, 1982b: 399.

brasiliensis Schedl 1936i: 104 (*Ceratolepis*). Syntypes, sex?; Rio Grande do Sul, Brasil; Schedl Collection in NHMW, Wien. Synonymy: Wood 1972g: 244.

Notes: (1) Schedl 1952d: 343 (to *Cnemonyx*).

References: (**hb**) Viana 1964: 128. (**ds**) Blackwelder 1947: 787; Viana 1964: 128. (**tx**) Schedl 1936i: 104, 1951g: 289, 1951m: 75–76, 1952a: 445, 1952d: 343, 1962q: 486, 1979c: 44; Wood, S. L. 1972e: 192, 1972g: 244.

barbatus Schedl 1954b: 24 (*Ceratolepis*). Syntypes ♂♀; Brasilien: Nova Teutonia; Schedl Collection in NHMW, Wien and Plaumann Collection, preoccupied by Eggers 1912. Synonymy: Wood 1985: 267.

Notes: (1) Schedl 1979c: 34 (citation of holotype invalid).

References: (**tx**) Schedl 1954b: 24, 1962q: 486, 1979c: 34; Wood, S. L. 1972g: 244, 1985: 267.

schedli Wood 1972g: 244. Syntypes ♂♀; Brasilien: Nova Teutonia; Schedl Collection in

NHMW, Wien and Plaumann Collection, automatic, unnecessary replacement name. Synonymy: Wood 1985: 267.
References: (**tx**) Wood, S. L. 1972g: 244, 1985: 267.

***euphorbiae* Wood** 1986c: 270. Holotype ♀; Canon de Lobos, Yautepec, Morelos, Mexico; Wood Collection.
Distribution: North America (Morelos in Mexico).
Hosts: Euphorbiaceae.
References: (**tx**) Wood, S. L. 1986c: 270.

***evidens* Wood** 1983: 654. Holotype ♂; Las Granjas, Morelos, Mexico; Wood Collection.
Distribution: North America (Morelos in Mexico).
Hosts: *Ficus* sp.
References: (**ds**) Atkinson et al. 1986: 52. (**tx**) Atkinson et al. 1986: 52; Wood, S. L. 1983: 654.

***exiguus* (Blandford)** 1896e: 130 (*Loganius*). Lectotype ♂; Bugaba, Chiriqui, Panama; BMNH, London, designated by Wood 1982b: 402.
Distribution: North America (Costa Rica/ Panama).
Hosts: (?) *Protium* sp.
References: (**hb**) Wood, S. L. 1982b: 401. (**ds**) Blackwelder 1947: 788; Hagedorn 1910d: 81; Kleine 1913b: 150, 1914b: 365; Wood, S. L. 1982b: 401. (**tx**) Blandford 1896e: 130; Hagedorn 1910a: 128; Wood, S. L. 1972e: 193, 1972g: 244, 1982b: 402.

pumilus Eggers 1929d: 65 (*Loganius*). Holotype ♂; Costa Rica (Turrialba); USNM, Washington. Synonymy: Wood 1972e: 193.
References: (**ds**) Blackwelder 1947; Nunberg 1958a: 484. (**tx**) Anderson, W. H. & Anderson 1971: 26; Eggers 1929d: 65; Nunberg 1958a: 484; Wood, S. L. 1972e: 193, 1972g: 244.

***exilis* (Wood)** 1967c: 119 (*Loganius*). Holotype ♂; Volcan de Agua, Guatemala; Wood Collection.
Distribution: North America (Guatemala).
Hosts: Euphorbiaceae.
References: (**hb**) Wood, S. L. 1982b: 411. (**ds**) Wood, S. L. 1982b: 411. (**tx**) Wood, S. L. 1967c: 119, 1972g: 244, 1982b: 411.

***fastigius* (Wood)** 1961d: 93 (*Loganius*). Holotype ♀; 15 km NW Acatlan, Puebla, Mexico; Wood Collection.
Distribution: North America (Puebla in Mexico).
Hosts: Leche Sillo (Euphorbiaceae).
References: (**hb**) Wood, S. L. 1982b: 409. (**ds**) Wood, S. L. 1982b: 409. (**tx**) Wood, S. L. 1961d: 93, 1972g: 244, 1982b: 409.

***ficus* (Schwarz)** 1896: 44 (*Loganius*). Lectotype ♂; Key West, Florida [USA]; USNM, Washington, designated by Wood 1982b: 402.
Distribution: Antilles Islands (Bahama Islands/ St. Croix in Virgin Islands), North America (Florida in USA).
Hosts: *Ficus aurea*.
References: (**cn**) Doane et al. 1936. (**ec**) Ashmead 1894: 33; Bushing 1965: 462; Pierce 1908: 391; Riley 1891c: 122. (**hb**) Chamberlin 1939: 236–237; Doane et al. 1936; Wood, S. L. 1982b: 402. (**ds**) Ashmead 1894; Atkinson et al. 1991: 157; Blatchley & Leng 1916: 587; Bright 1985c: 171; Chamberlin 1939: 236–237; Hagedorn 1910d: 81; Henshaw 1895: 44; Kleine 1913b: 149, 1934a: 168; Leng 1920: 337; Swaine 1909: 126; Wood, S. L. 1982b: 402. (**tx**) Blatchley & Leng 1916: 587; Bright 1985c: 171; Chamberlin 1939: 236–237; Hagedorn 1910a: 128; Schwarz 1896: 44; Swaine 1909: 126, 1918a: 48; Wood, S. L. 1961d: 88, 1962: 78, 1972g: 244, 1982b: 402.

nubilus Blackman 1943c: 380 (*Ceratolepis*). Holotype ♂; St. Croix, Virgin Islands; USNM, Washington. Synonymy: Wood 1962: 78.
References: (**ds**) Blackwelder 1947: 787. (**tx**) Blackman 1943c: 380; Schedl 1954b: 24, 1962q: 486; Wood, S. L. 1962: 78, 1972g: 244.

***flavicornis* (Chapuis)** 1869: 53 (*Loganius*). Syntypes, sex?; Cumana; IRSNB, Brussels.
Distribution: South America (Argentina/ Brazil/ Venezuela).
References: (**cn**) Costa Lima 1956. (**hb**) Costa Lima 1956; Viana 1964: 129. (**ds**) Blackwelder 1947: 788; Bruch 1914a; Costa Lima 1956; Gemminger & Harold 1872: 2694; Hagedorn 1910d: 82; Kleine 1913b: 150, 1914b: 340; Schedl 1960a: 77, 1976a: 50; Viana 1964: 129. (**tx**) Chapuis 1869: 53, 1873: 261; Costa Lima 1956; Eggers 1929d: 60, 1931c: 18, 1933g: 18; Hagedorn 1910a: 128; Hopkins 1914: 124; Schedl 1939d: 412, 1939m: 169, 1948d: 36, 1958c: 2, 1958f: 34; Schwarz 1896: 45; Wood, S. L. 1972g: 244.

scaliger Hagedorn 1910b: 5 (*Loganius*). Holotype ♂; Argentina; Hamburg Museum, lost. Synonymy: Eggers 1933g: 18, Wood 1972g: 244.
References: (**ds**) Bruch 1914a; Hagedorn 1910d: 82; Kleine 1913b: 150, 1914b: 333. (**tx**) Eggers 1933g: 18; Hagedorn 1910a: 128, 1910b: 5; Wood, S. L. 1972g: 244.

vianai Schedl 1951h: 289. Syntypes, sex?; Argentinien, Buenos Aires: Tigre; Schedl Collection in NHMW, Wien, and Viana Collection. Synonymy: Wood 1985: 267.
Notes: Schedl 1979c: 267 (citation of holotype invalid).
References: (**hb**) Viana 1964: 129. (**ds**) Viana 1964: 129. (**tx**) Schedl 1951h: 288–289, 1979c: 267; Wood, S. L. 1972g: 244, 1985: 267.

***furvescens* Wood** 1979b: 137. Holotype ♀; 27 km NE Montoya, Santander, Colombia; Wood Collection.
Distribution: South America (Colombia).
Hosts: *Cespedesia macrophylla*.
References: (**tx**) Wood, S. L. 1979b: 137.

***galeritus* Eichhoff** 1868c: 150. Holotype, sex?; Chili; Schedl Collection in NHMW, Wien.

Distribution: South America (Chile).
References: (**ds**) Blackwelder 1947: 787; Bruch 1914a; Chapuis 1869: 52, 1873: 260; Gemminger & Harold 1872: 2694; Kleine 1913b: 150, 1914b: 332; Schedl 1972d: 132, 1973d: 161. (**tx**) Chapuis 1869: 52, 1873: 260; Eggers 1923b: 138; Eichhoff 1868c: 150; Hagedorn 1910a: 128; Hopkins 1914: 118; Lucas 1920: 193; Schedl 1939d: 407, 1972d: 132, 1979c: 102; Wood, S. L. 1972g: 244.

***glaber* (Eggers)** 1929d: 64 (*Loganius*). Holotype ♂; Ostbolivia; USNM, Washington.
Distribution: South America (Bolivia).
References: (**ds**) Blackwelder 1947: 788. (**tx**) Anderson, W. H. & Anderson 1971: 13; Eggers 1929d: 64; Wood, S. L. 1972g: 244.

***glabratus* (Schedl)** 1940a: 329 (*Loganius*). Holotype ♀; Tumbala, Chiapas, Mexico; Schedl Collection in NHMW, Wien.
Distribution: North America (Chiapas, Oaxaca in Mexico).
References: (**hb**) Atkinson & Equihua 1986a: 420. (**ds**) Atkinson & Equihua 1986a: 420; Blackwelder 1947: 788; Ferrer 1942; Wood, S. L. 1982b: 398. (**tx**) Schedl 1939k: 722, 1940a: 329, 1979c: 105; Wood, S. L. 1972g: 244, 1982b: 398.

***gracilens* Wood** 1969b: 10. Holotype ♂; 57 km SE El Cameron, Oaxaca, Mexico; Wood Collection.
Distribution: North America (Oaxaca in Mexico).
Hosts: Euphorbiaceae.
References: (**hb**) Wood, S. L. 1982b: 410. (**ds**) Wood, S. L. 1982b: 410. (**tx**) Wood, S. L. 1969b: 10, 1972g: 244, 1982b: 410.

***hylurgoides* (Schedl)** 1948f: 262 (*Coptodryas*). Holotype, sex?; Brasil, St. Catharina; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
Notes: (1) Wood 1972g: 244 (to *Cnemonyx*). (3) Schedl 1952b: 363 (treated in *Coptosomus*).
References: (**tx**) Schedl 1948f: 262, 1952b: 363, 1979c: 120; Wood, S. L. 1972g: 244.

***impressus* (Wood)** 1961d: 90 (*Loganius*). Holotype ♂; Chilpancingo, Guerrero, Mexico; Wood Collection.
Distribution: North America (Guerrero in Mexico).
Notes: Wood 1972g: 244 (to *Cnemonyx*).
References: (**ds**) Wood, S. L. 1982b: 407. (**tx**) Wood, S. L. 1961d: 90, 1972g: 244, 1982b: 407.

***insidiosus* (Schedl)** 1939m: 171 (*Loganius*). Syntypes, sex?; Buenos Aires, Isla Martin Garcia; Schedl Collection in NHMW, Wien, and Viana Collection.
Distribution: South America (Argentina/ Bolivia).
Notes: (1) Schedl 1952d: 344 (to *Cnemonyx*), 1979c: 125 (citation of holotype invalid).
References: (**ds**) Blackwelder 1947: 788. (**tx**) Schedl 1939m: 171, 1952d: 344, 1979c: 125; Wood, S. L. 1972g: 244.

***insignis* Wood** 1969b: 9. Holotype ♂; Moravia, Cartago Prov., Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: *Virola* sp.
References: (**hb**) Wood, S. L. 1982b: 397. (**ds**) Wood, S. L. 1982b: 397. (**tx**) Wood, S. L. 1969b: 9, 1972g: 244, 1982b: 397.

***jucundus* (Chapuis)** 1869: 52 (*Ceratolepis*). Holotype ♂; Nova-Fribourg; IRSNB, Brussels.
Distribution: South America (Brazil).
References: (**ds**) Blackwelder 1947: 787; Gemminger & Harold 1872: 2694; Hagedorn 1910d: 82; Kleine 1913b: 150, 1914b: 336; Schedl 1973d: 151. (**tx**) Chapuis 1869: 52, 1873: 260; Eggers 1933: 14; Hagedorn 1910a: 127; Hopkins 1914: 117; Schedl 1952d: 349, 1962q: 486; Wood, S. L. 1972g: 244.

***liratus* (Wood)** 1961d: 92 (*Loganius*). Holotype ♀; 20 km E Matamoros, Puebla, Mexico; Wood Collection.
Distribution: North America (Puebla in Mexico).
Hosts: Euphorbiaceae.
Notes: (1) Wood 1972g: 244 (to *Cnemonyx*).
References: (**hb**) Atkinson & Equihua 1985b: 231; Atkinson et al. 1986: 52; Wood, S. L. 1982b: 409. (**ds**) Atkinson & Equihua 1985b: 231, 1988: 86; Atkinson et al. 1986: 52; Wood, S. L. 1982b: 409. (**tx**) Wood, S. L. 1961d: 92, 1967c: 119, 1972g: 244, 1982b: 409.

***longicollis* (Blandford)** 1896e: 128 (*Loganius*). Holotype ♀; "Mexico" tobacco refuse intercepted at Paris; BMNH, London.
Figures: Blandford 1896e:pl. 6.
Distribution: South America (Brazil).
Notes: (1) Wood 1982b: 411 (to *Cnemonyx*; the "Mexican" tobacco refuse cited in the original description is now known to have originated in Brazil).
References: (**ec**) Wichmann 1955a: 107. (**ds**) Blackwelder 1947: 788; Ferrer 1942; Hagedorn 1910d: 82; Kleine 1913b: 150, 1914b: 353; Wichmann 1955a: 107. (**tx**) Blandford 1896e: 128; Hagedorn 1910a: 128; Schedl 1940a: 329; Wood, S. L. 1972g: 244, 1982b: 411.

***maculicornis* (Blandford)** 1896e: 127 (*Ceratolepis*). Lectotype ♀; Tole, Panama; BMNH, London, designated by Wood 1982b: 399.
Distribution: North America (Costa Rica/ Honduras/ Panama), South America (Colombia).
Hosts: *Virola* sp.
References: (**hb**) Wood, S. L. 1982b: 399. (**ds**) Blackwelder 1947: 788; Hagedorn 1910d: 82; Kleine 1913b: 150, 1914b: 365; Wood, S. L. 1982b: 399. (**tx**) Blandford 1896e: 127; Hagedorn 1910a: 127; Schedl 1962q: 486; Wood, S. L. 1972g: 244, 1982b: 399.

***minor* Schedl** 1951m: 75. Syntypes, sex?; Brasilien, Santa Catarina; Schedl Collection in NHMW, Wien, and Plaumann Collection.

Distribution: South America (Argentina/ Brazil).
Notes: (1) Schedl 1979c: 154 (citation of holotype invalid).
References: (**ds**) Nunberg 1964a: 234; Schedl 1966f: 82. (**tx**) Nunberg 1964a: 234; Schedl 1951m: 75, 1979c: 154; Wood, S. L. 1972g: 244.

***minusculus* (Blandford)** 1896e: 130 (*Loganius*). Holotype ♂; Volcan de Chiriqui, Panama; BMNH, London.
Distribution: North America (Costa Rica/ Guatemala/ Veracruz in Mexico/ Panama).
Hosts: *Vismia* spp.
References: (**ds**) Blackwelder 1947: 788; Hagedorn 1910d: 82; Kleine 1913b: 150, 1914b: 365; Wood, S. L. 1982b: 401. (**tx**) Blandford 1896e: 130; Hagedorn 1910a: 128; Wood, S. L. 1972e: 193, 1972g: 244, 1982b: 401.

vismiae Eggers 1929d: 63 (*Loganius*). Holotype ♂; Costa Rica (La Caja, 8 km westlich San Jose); MNB, Berlin. Synonymy: Wood 1972e: 193.
References: (**bv**) Winning 1930: 42. (**hb**) Winning 1930: 42. (**ds**) Blackwelder 1947. (**tx**) Eggers 1929d: 63; Wood, S. L. 1972e: 193, 1972g: 244.

***niger* (Eggers)** 1933b: 13 (*Ceratolepis*). Holotype, sex?; Franz. Guayana (St. Laurent du Maroni); MNHN, Paris.
Distribution: South America (Cayenne).
Notes: (3) Schedl 1962q: 485 (erroneously transferred this species to *Camptocerus* and renamed it *nigricans*; because the error occurred after 1960, the name has no status in nomenclature, since homonymy did not exist).
References: (**ds**) Blackwelder 1947: 787; Schedl 1960a: 77. (**tx**) Eggers 1933b: 13–14; Schedl 1952d: 349, 1960a: 77, 1962q: 486, 1979c: 166; Wood, S. L. 1974d: 278.

***nigrellus* Wood** 1974d: 278. Holotype ♀; 16 miles W Tehuantepec, Oaxaca, Mexico; Wood Collection, automatic.
Distribution: North America (Oaxaca in Mexico).
Hosts: Euphorbiaceae.
References: (**hb**) Wood, S. L. 1982b: 404. (**ds**) Wood, S. L. 1982b: 404. (**tx**) Wood, S. L. 1974d: 278, 1982b: 404.

niger Wood 1961d: 95 (*Loganius*). Holotype ♀; 16 miles W Tehuantepec, Oaxaca, Mexico; Wood Collection, preoccupied by Eggers 1933.
References: (**tx**) Wood, S. L. 1961d: 95, 1972g: 244, 1974d: 278.

***opacus* Wood** 1969b: 10. Holotype ♂; Playa del Coco, Guanacaste, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: *Hippomane macinella*.
References: (**hb**) Wood, S. L. 1982b: 408. (**ds**) Wood, S. L. 1982b: 408. (**tx**) Wood, S. L. 1969b: 10, 1972g: 244, 1982b: 408.

***panamensis* (Blandford)** 1896e: 129 (*Loganius*). Lectotype ♂; Tole, Chiriqui, Panama; BMNH, London, designated by Wood 1982b: 400.
Distribution: North America (Costa Rica/ Panama), South America (Venezuela).
Hosts: *Vismia guianensis*.
Notes: (3) Wood 1972g: 244 (to *Cnemonyx*).
References: (**hb**) Wood, S. L. 1982b: 400. (**ds**) Blackwelder 1947: 788; Hagedorn 1910d: 82; Kleine 1913b: 150, 1914b: 365; Wood, S. L. 1982b: 400. (**tx**) Blandford 1896e: 129; Eggers 1929d: 62–63; Hagedorn 1910a: 128; Schedl 1972q: 255; Wood, S. L. 1969b: 9, 1972g: 244, 1982b: 400.

***parvus* (Nunberg)** 1972b: 195 (*Loganius*). Holotype ♂; Sao Paulo, Itaquera; MZUSP, Sao Paulo.
Figures: Nunberg 1972b: 196.
Distribution: South America (Brazil).
References: (**tx**) Nunberg 1972a, 1972b: 195–196.

***prociduus* (Wood)** 1961d: 91 (*Loganius*). Holotype ♀; La Ceiba, Honduras; Wood Collection.
Distribution: North America (Honduras/ Veracruz in Mexico).
Notes: (1) Wood 1972g: 244 (to *Cnemonyx*).
References: (**ds**) Wood, S. L. 1982b: 407. (**tx**) Wood, S. L. 1961d: 91, 1972g: 244, 1982b: 407.

***protivorus* Wood** 1979b: 137. Holotype ♂; 40 km SE Socopo, Barinas, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Protium* sp.
References: (**tx**) Wood, S. L. 1979b: 137.

***recavus* Wood** 1969b: 11. Holotype ♂; 48 km E Tehuantepec, Oaxaca, Mexico; Wood Collection.
Distribution: North America (Oaxaca, Puebla in Mexico).
Hosts: "Leche Sillo" (Euphobiaceae).
References: (**hb**) Wood, S. L. 1982b: 404. (**ds**) Wood, S. L. 1982b: 404. (**tx**) Wood, S. L. 1969b: 11, 1982b: 404.

***rugulosus* (Eggers)** 1929d: 64 (*Loganius*). Holotype ♀; Ostbolivia; USNM, Washington.
Distribution: South America (Bolivia).
Notes: (1) Wood 1972g: 244 (to *Cnemonyx*).
References: (**ds**) Blackwelder 1947: 788. (**tx**) Anderson, W. H. & Anderson 1971: 28; Eggers 1929d: 64; Wood, S. L. 1972g: 244.

***setulosus* (Eggers)** 1929d: 62 (*Loganius*). Holotype ♂; Ostbolivia; Eggers Collection, in NHMW, Wien.
Distribution: South America (Bolivia).
References: (**ds**) Blackwelder 1947: 788. (**tx**) Eggers 1929d: 62; Schedl 1979c: 226; Wood, S. L. 1972g: 244.

***similis* (Eggers)** 1929d: 63 (*Loganius*). Lectotype ♂; Ostbolivia; USNM, Washington, designated by Anderson & Anderson 1971: 30.
Distribution: South America (Bolivia).
Notes: (1) Wood 1972g: 244 (to *Cnemonyx*).
References: (**ds**) Blackwelder 1947: 788; Schedl 1966f: 80. (**tx**) Anderson, W. H. & Anderson 1971:

30; Eggers 1929d: 63; Schedl 1979c: 229; Wood, S. L. 1972g: 244.

***splendens* (Wood)** 1961d: 88 (*Loganius*). Holotype ♂; "Mexico" (intercepted at San Pedro, California); USNM, Washington.
Distribution: North America ("Mexico," Jalisco in Mexico).
Hosts: *Cybistax donnell-smithii, Hyppomane mancinella*.
References: (**ec**) Equihua & Atkinson 1986: 626. (**hb**) Atkinson & Equihua 1988: 86; Equihua & Atkinson 1986: 626. (**ds**) Atkinson & Equihua 1988: 86; Equihua & Atkinson 1986: 626; Wood, S. L. 1982b: 405. (**tx**) Wood, S. L. 1961d: 88, 1972g: 244, 1982b: 405.

***squamifer* Wood** 1979b: 138. Holotype ♂; Tikal, Peten, Guatemala; Wood Collection.
Distribution: North America (Guatemala).
References: (**ds**) Estrada & Atkinson 1988: 204; Wood, S. L. 1982b: 406. (**tx**) Wood, S. L. 1979b: 138, 1982b: 406.

***vagabundus* (Wood)** 1961d: 89 (*Loganius*). Holotype ♂; Key West, Florida [USA]; USNM, Washington.
Distribution: Antilles Islands (Antigua/ Dominican Republic in Hispanola/ Puerto Rico/ Virgin Islands), North America (Panama/ Florida in USA).
Hosts: *Pisida piscipala*.
References: (**ds**) Atkinson et al. 1991: 157; Bright 1981c: 153, 1985c: 171; Browne 1970: 543; Wood, S. L. 1982b: 406. (**tx**) Bright 1985c: 171; Browne 1970: 543; Wood, S. L. 1961d: 89, 1972g: 244, 1982b: 406.

***vestitus* (Eggers)** 1929d: 59 (*Loganius*). Lectotype ♂; Ostbolivia; USNM, Washington, designated by Anderson & Anderson 1971: 35.
Distribution: South America (Bolivia/ Venezuela).
Hosts: *Trichilis propinguus*.
References: (**ds**) Blackwelder 1947: 788; Schedl 1966f: 80, 1976a: 50. (**tx**) Anderson, W. H. & Anderson 1971: 35; Eggers 1929d: 59; Schedl 1979c: 266; Wood, S. L. 1972g: 244.

***vismiacolens* Wood** 1979b: 138. Holotype ♀; Merida, Merida, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Vismia* sp.
Notes: (1) Wood, S. L. 1981: 123 (lapsus calami corrected).
References: (**tx**) Wood, S. L. 1979b: 138, 1981: 123.

Genus *Camptocerus* Latreille

CAMPTOCERUS LATREILLE 1829: 91. Type-species: *Hylesinus aeneipennis* Fabricius, monobasic.
Keys: Wood 1982b: 412.
References: (**hb**) Wood, S. L. 1986a: 58. (**ds**) Wood, S. L. 1986a: 58. (**tx**) Blandford 1896e: 124–126; Chapuis 1869: 50–51, 1873: 258–259; Erichson 1836: 59; Hagedorn 1910a: 125–126, 1910d: 82; Lacordaire 1860: 368; Latreille 1829: 91; Schedl 1962q: 485; Wood, S. L. 1972g: 243, 1982b: 411–412, 1986a: 58.

***aeneipennis* (Fabricius)** 1801: 392 (*Hylesinus*). Lectotype ♂; lectotype labeled Essequibo (Guyana), published as America meridionali; UZMC, Copenhagen, designated by Wood 1982b: 412.
Distribution: North America (Costa Rica/ Panama), South America (Argentina/ Bolivia/ Brazil/ Cayenne/ Colombia/ Guyana/ Suriname/ Venezuela).
Hosts: *Protium* spp.
References: (bv) Winning 1930: 42. (ec) Vitzthum 1926: 456. (**hb**) Beaver 1972; Bondar 1950: 479; Girard 1873; Winning 1930: 42–45; Wood, S. L. 1982b: 414. (**ds**) Beaver 1972; Blackwelder 1947: 787; Browne 1970: 543; Bruch 1914a; Chapuis 1869: 50, 1873: 258; Dejean 1821, 1825, 1837; Hagedorn 1903b: 545, 1910d: 82; Kleine 1913b: 151, 1914b: 336, 338, 1934a: 168; Lacordaire 1830: 127, 1866: 368; Nunberg 1962: 223; Schedl 1960a: 78, 1966f: 79, 1967d: 1, 1970e: 80, 1972g: 41, 1973d: 150, 1976a: 49, 1978c: 291; Sturm 1843: 229; Wood, S. L. 1982b: 414. (**tx**) Browne 1970: 543; Castelnau 1840; Chapuis 1869: 50, 1873: 258; Chevrolat 1838; Dejean 1821, 1825; Eggers 1928c: 90–91, 1929e: 43, 45, 1931c, 1933b: 12, 1933g: 17; Erichson 1836: 59; Fabricius 1801: 392; Gemminger & Harold 1872: 2678; Girard 1873; Hagedorn 1903b: 545, 1910a: 126, 1914: 117; Hopkins 1915c:pl. 9, fig. 15, pl. 12, fig. 15; Illiger 1907: 321; Lacordaire 1866: 368; Lucas 1920: 162; Schedl 1952h: 68, 1955d: 274, 1960a: 78; Wood, S. L. 1972g: 243, 1982b: 412, 414. (**ms**) Lucas 1920: 162.
gibbus Fabricius 1801: 392 (*Hylesinus*). Holotype ♀; type labeled Essequibo (Guyana), published as America meridionali; UZMC, Copenhagen. Synonymy: Wood 1972g: 243.
References: (**ds**) Hagedorn 1910d: 82; Kleine 1913b: 151; Lacordaire 1866: 369. (**tx**) Eggers 1931c: 17, 1933g: 17; Erichson 1836: 59; Fabricius 1801: 392; Gemminger & Harold 1872: 2678; Hopkins 1910a: 126; Lacordaire 1866: 369; Wood, S. L. 1972g: 243.

***angustior* Eggers** 1928c: 91. Lectotype ♂; Bolivia (Yungas, 1,000 m); USNM, Washington, designated by Anderson & Anderson 1971: 4.
Distribution: South America (Bolivia/ Brazil/ Colombia/ Peru).
References: (**ds**) Blackwelder 1947: 787. (**tx**) Anderson, W. H. & Anderson 1971: 4; Eggers 1928c: 91, 1933b: 12; Schedl 1979c: 20.

***aterrimus* Eggers** 1933b: 12. Syntypes 1 ♂, 1 ♀; ♂, Brasil (Amazonenstromgebiet), ♀, Franz. Guayana (Passoura); MNHN, Paris, and Eggers Collection (USNM, Washington or NHMW, Wien?).
Distribution: South America (Cayenne/ Brazil).
References: (**hb**) Beaver 1972. (**ds**) Beaver 1972;

Blackwelder 1947: 787; Schedl 1966f: 81, 1972g: 41, 1973d: 150. (**tx**) Eggers 1933b: 12; Schedl 1979c: 30.

***auricomus* Blandford** 1896c: 125. Syntypes, sex?; Chontales, Nicaragua, Bugaba and Volcan de Chiriqui, Panama; BMNH, London.
Distribution: North America (Costa Rica/ Nicaragua/ Panama), South America (Guyana/ Venezuela).
Hosts: *Cedrela* sp., *Protium* sp., *Rheedia edulis*.
References: (**hb**) Atkinson & Equihua 1986a: 420; Wood, S. L. 1982b: 416. (**ds**) Atkinson & Equihua 1986a: 420; Beaver 1972: 249; Blackwelder 1947: 787; Hagedorn 1903b: 546, 1910d: 82; Kleine 1913b: 151, 1914b: 365; Wood, S. L. 1982b: 416. (**tx**) Blandford 1896e: 125; Eggers 1943d: 245; Hagedorn 1903b: 546, 1910a: 126; Muskus, A. 1984: 69; Schedl 1979c: 31; Wood, S. L. 1969b: 11, 1982b: 416.

***charpentierae* Schedl** 1970f: 582. Holotype ♂; Guyane francaise, Massikiri-Haut Oyapock; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil/ Cayenne).
References: (**tx**) Schedl 1970f: 582, 1979c: 56.

***costatus* Chapuis** 1869: 51. Holotype ♂; Bresil; IRSNB, Brussels.
Distribution: Antilles Islands (Trinidad), South America (Brazil).
References: (**ds**) Blackwelder 1947: 787; Gemminger & Harold 1872: 2694; Hagedorn 1910d: 82; Kleine 1913b: 151, 1914b: 336; Schedl 1973d: 150; Sturm 1843: 229. (**tx**) Chapuis 1869: 51, 1873: 259; Eggers 1933b: 13; Gemminger & Harold 1872: 2678; Hagedorn 1910a: 126.

***infidelis* Wood** 1969b: 11. Holotype ♀; Peralta, Cartago, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
References: (**hb**) Wood, S. L. 1982b: 415. (**ds**) Wood, S. L. 1982b: 415. (**tx**) Wood, S. L. 1969b: 11, 1982b: 415.

***inoblitus* (Schedl)** 1939k: 722 (*Loganius*). Holotype ♂; Brasilien, Sta. Catharina; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
Notes: (1) Wood 1972g: 243 (to *Camptocerus*). (3) Schedl 1951: 75 (described male).
References: (**hb**) Viana 1964: 129. (**ds**) Beaver 1972; Blackwelder 1947: 788; Schedl 1966f: 81, 1973d: 151, 1976a: 49; Viana 1964: 129. (**tx**) Beaver 1972; Schedl 1939k: 722, 1951h: 283, 1951m: 75, 1958f: 34, 1979c: 124; Wood, S. L. 1972g: 243.

***latipilis* Schedl** 1973d: 166. Holotype ♂; Brasilien, Para, Benfica, Ananindeua; MZUSP, Sao Paulo.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1973d: 166, 1979c: 137.

***major* (Eggers)** 1929d: 60 (*Loganius*). Holotype ♀; Chanchamajo; Eggers Collection, in NHMW, Wien.
Distribution: South America (Brazil/ Peru).
References: (**ds**) Blackwelder 1947: 788; Schedl 1976a: 49. (**tx**) Eggers 1929d: 60; Schedl 1952d: 343, 1952h: 68, 1979c: 146; Wood, S. L. 1972g: 244.

uniseriatus Schedl 1972g: 54. Holotype ♂; Brasilien, Corcovado, Guanabara; Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 170.
References: (**tx**) Schedl 1972g: 54, 1979c: 261; Wood, S. L. 1989: 170.

***morio* (Schedl)** 1952d: 348 (*Loganius*). Holotype ♂; Brasilien, Santa Catarina; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1952d: 348, 1979c: 159; Wood, S. L. 1972g: 244.

***niger* (Fabricius)** 1801: 393 (*Hylesinus*). Lectotype ♂; type labeled Essequibo [Guyana], published as America meridionali; UZMC, Copenhagen, designated by Wood 1982b: 415.
Distribution: North America (Costa Rica), South America (Brazil/ Cayenne/ Colombia/ Guyana/ Peru).
Hosts: *Protium* sp.
References: (**hb**) Beaver 1972. (**ds**) Beaver 1972; Blackwelder 1947: 788; Chapuis 1869: 51, 1873: 259; Hagedorn 1903b: 546, 1910d: 82; Kleine 1913b: 151, 1914b: 338; Lacordaire 1866: 369; Schedl 1966f: 79, 1973d: 151; Wood, S. L. 1982b: 415. (**tx**) Chapuis 1869: 51, 1873: 259; Eggers 1928c: 91, 1929e: 43, 46, 1933b: 1, 1933g: 20, 1934b: 27, 1943d: 243–244; Erichson 1836: 59; Fabricius 1801: 393–394; Gemminger & Harold 1872: 2678; Hagedorn 1903b: 546, 1910a: 126; Illiger 1907: 321; Lacordaire 1866: 369; Schedl 1940c: 205, 1962e: 486; Wood, S. L. 1982b: 415.

squammiger Chapuis 1869: 51. Syntypes 1 ♂, 1 ♀; Cayenne; IRSNB, Brussels. Synonymy: Eggers 1934b: 27.
References: (**ds**) Hagedorn 1910d: 82; Kleine 1913b: 151, 1914b: 338. (**tx**) Chapuis 1869: 51, 1873: 259; Eggers 1934b: 27; Gemminger & Harold 1872: 2678; Hagedorn 1910a: 126.

striatulus Hagedorn 1904: 547. Syntypes, sex?; French Guyana; MNHN, Paris. Synonymy: Eggers 1933g: 20.
References: (**ds**) Hagedorn 1910d: 82; Kleine 1913b: 151, 1914b: 338. (**tx**) Eggers 1933b: 1, 1933g: 20; Hagedorn 1904: 547, 1910a: 126.

***occidentalis* Eggers** 1928c: 91. Lectotype ♂; Bolivia (Yungas de la Paz); USNM, Washington, designated by Anderson & Anderson 1971: 23.
Distribution: South America (Bolivia).
References: (**ds**) Blackwelder 1947: 788. (**tx**) Anderson, W. H. & Anderson 1971: 23; Eggers 1928c: 91–92; Schedl 1979c: 176.

***opacicollis* (Eggers)** 1929d: 61 (*Loganius*). Holotype ♂; Ostbolivia; Eggers Collection, in NHMW, Wien.

Distribution: South America (Bolivia/ Brazil).
Notes: (1) Wood 1972g: 243 (to *Camptocerus*).
References: (**ds**) Blackwelder 1947: 788; Schedl 1966f: 95, 1973d: 151. (**tx**) Eggers 1929d: 61; Schedl 1951h: 283, 1952d: 343, 1962q: 487, 1979c: 178; Wood, S. L. 1972g: 243.

aquilus Wood 1972g: 244. Holotype ♂; Brazil: 12 degrees 49′ S, 51 degrees 46′ W [apparently near Aldeia Caraya, Goias, on or near the Rio Araguaia]; BMNH, London. Synonymy: Wood 1985: 266.
References: (**hb**) Beaver 1972. (**ds**) Schedl 1976a: 49. (**tx**) Wood, S. L. 1972g: 244, 1985: 266.

***orientalis* Eggers** 1943d: 244. Holotype ♂; Brasil (Salobro, Prov. de Bahia); Strohmeyer Collection.
Distribution: South America (Brazil).
References: (**ds**) Nunberg 1962: 223; Schedl 1973d: 151, 1976a: 49. (**tx**) Eggers 1943d: 244; Schedl 1966f: 98, 1979c: 180.

tectus Eggers 1943d: 244. Holotype ♂; Brasil (Sarra da Bernada, Pernambuco); Strohmeyer Collection. Synonymy: Wood 1989: 170.
References: (**ds**) Schedl 1966f: 80, 1976a: 50. (**tx**) Eggers 1943d: 244; Schedl 1966f: 98, 1979c: 250; Wood, S. L. 1989: 170.

***quadridens* Blackman** 1943c: 379. Holotype ♂; Cooper's, near source of Rio Aejeta, Canal Zone, Panama; USNM, Washington.
Distribution: North America (Panama).
References: (**ds**) Blackwelder 1947: 788; Wood, S. L. 1982b: 412. (**tx**) Blackman 1943c: 379–381; Wood, S. L. 1982b: 412.

***rectus* Wood** 1972g: 245. Holotype ♂; Venezuela: 40 km E Canton, Barinas; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Protium tenuifolium*.
References: (**tx**) Wood, S. L. 1972g: 245.

***seriatus* Eggers** 1933b: 12. Holotype ♀; Franz. Guayana (Les roches de Kourou); MNHN, Paris.
Distribution: South America (Brazil/ Cayenne).
References: (**ds**) Blackwelder 1947: 788; Nunberg 1962: 223; Schedl 1966f: 79. (**tx**) Eggers 1933b: 12–13.

***suturalis* (Fabricius)** 1801: 393 (*Hylesinus*). Syntypes 4, sex?; labeled Essequibo [Guyana], published as America meridionali; UZMC, Cophenhagen.
Distribution: South America (Brazil/ Guyana).
References: (**ds**) Blackwelder 1947: 788; Hagedorn 1910d: 82; Kleine 1913b: 151; Lacordaire 1866: 369; Schedl 1966f: 79, 1972g: 79, 1973d: 151. (**tx**) Eggers 1929e: 43, 45; Erichson 1836: 59; Fabricius 1801: 393; Gemminger & Harold 1872: 2678; Hagedorn 1910a: 126; Illiger 1907: 321; Lacordaire 1866: 369; Wood, S. L. 1972g: 243.

fasciatus Fabricius 1801: 392 (*Hylesinus*). Syntypes 1 ♂, 1 ♀; labeled Essequibo [Guyana], published as America meridionali; UZMC, Copenhagen. Synonymy: Wood 1972g: 243.
References: (**ds**) Hagedorn 1910d: 82; Kleine 1913b: 151; Lacordaire 1866: 369. (**tx**) Eggers 1929e: 43; Erichson 1836: 59; Fabricius 1801: 392–393; Gemminger & Harold 1872: 2678; Hagedorn 1910a: 126; Illiger 1907: 321; Lacordaire 1866: 369; Wood, S. L. 1972g: 243.

cinctus Chapuis 1869: 51. Holotype, sex?; Amerique meridionale; IRSNB, Brussels. Synonymy: Wood 1972g: 243.
References: (**tx**) Chapuis 1869: 51, 1873: 259; Gemminger & Harold 1872: 2678; Wood, S. L. 1972g: 243.

hirtipennis Schedl 1973d: 165. Holotype ♂; Brasilien, Tefe (= Ega); MZUSP, Sao Paulo. Synonymy: Wood 1989: 170.
References: (**tx**) Schedl 1973d: 165, 1979c: 118; Wood, S. L. 1989: 170.

Genus *Scolytopsis* Blandford

SCOLYTOPSIS BLANDFORD 1896e: 120, 123. Type-species: *Scolytopsis puncticollis* Blandford, monobasic.
Keys: Eggers 1937a: 82–83, Wood 1982b: 417.
References: (**hb**) Wood, S. L. 1986a: 58. (**ds**) Blackwelder 1947: 788; Wood, S. L. 1986a: 58. (**tx**) Blandford 1896e: 120, 123–124; Eggers 1937a: 82–83; Hagedorn 1910a: 124–125, 1910d: 89; Wood, S. L. 1982b: 417, 1986a: 58.

***brasiliensis* Eggers** 1931a: 16. Holotype ♂; Brazil (Sta. Catharina: Lages); USNM, Washington.
Figures: Pedrosa-Macedo & Schonherr 1985: 7.
Distribution: South America (Brazil).
References: (**ds**) Blackwelder 1947: 788; Pedrosa-Macedo & Schonherr 1985: 7; Schedl 1966f: 81, 1967d: 1, 1973d: 150; Schonherr & Pedrosa-Macedo 1981: 50. (**tx**) Anderson, W. H. & Anderson 1971: 7; Eggers 1931a: 16–17, 1937a: 82; Pedrosa-Macedo & Schonherr 1985: 7; Schedl 1979c: 45.

***laticollis* Wood** 1968b: 14. Holotype ♀; 31 km SE Cameron, Oaxaca, Mexico; Wood Collection.
Distribution: North America (Oaxaca in Mexico).
Hosts: (?) *Plumeria* sp., etc.
References: (**hb**) Wood, S. L. 1982b: 418. (**ds**) Wood, S. L. 1982b: 418. (**tx**) Wood, S. L. 1968b: 14, 1982b: 418.

***orinocanus* Wood** 1971: 18. Holotype ♀; Campamento Rio Grande, 30 km E Palmar, Bolivar, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Terminalia guianensis*.
References: (**hb**) Wood, S. L. 1971: 18. (**tx**) Wood, S. L. 1971: 18.

***peruanus* Eggers** 1937a: 83. Lectotype ♀; Peru (Marcapata); USNM, Washington, designated by Anderson & Anderson 1971: 24.
Distribution: South America (Peru).
References: (**ds**) Blackwelder 1947: 788. (**tx**) Anderson, W. H. & Anderson 1971: 24; Eggers 1937a: 83; Schedl 1952h: 68, 1979c: 191.

***puncticollis* Blandford** 1896e: 123. Syntypes, sex?; Toroda, Las Mercedes, Zapote, and Rio Maria Linda, Guatemala; BMNH, London.
Distribution: Antilles Islands (Cuba), North America (Costa Rica/ Guatemala/ Veracruz in Mexico), South America (Argentina/ Brazil/ Paraguay).
Notes: (3) Schedl 1948d: 35 (*Scolytus episternatus*, nomen nudum, synonymy in Schedl 1950i: 147).
References: (**ec**) Equihua & Atkinson 1986: 627; Wichmann 1955a: 107. (**hb**) Atkinson & Equihua 1986a: 420; Equihua & Atkinson 1986: 627; Wood, S. L. 1982b: 417–418. (**ds**) Atkinson & Equihua 1985b: 232, 1986a: 420; Blackwelder 1947: 788; Bruch 1914a; Equihua & Atkinson 1986: 627; Ferrer 1942; Hagedorn 1910d: 87; Kleine 1913b: 154, 1914b: 334, 336, 365; Wichmann 1955a: 107; Wood, S. L. 1982b: 417–418. (**tx**) Blandford 1896e: 123; Eggers 1931a: 16, 1936a: 87, 1937a: 83; Hagedorn 1910a: 125; Hayward 1942: 28; Hopkins 1914: 129; Lucas 1920: 572; Schedl 1940a: 329, 1948d: 35, 1950i: 147, 1952a: 444; Wood, S. L. 1961d: 87, 1982b: 417–418. (**ms**) Lucas 1920: 572.

toba Wichmann 1914c: 136. Holotype, sex?; Santa Sofia, Paraguay; NHMW, Wien. Synonymy: Wood 1985: 269.
References: (**ds**) Blackwelder 1947: 788; Kleine 1914b: 334. (**tx**) Eggers 1937a: 83; Wichmann 1914c: 136; Wood, S. L. 1985: 269.

argentinensis Eggers 1937a: 84. Lectotype ♂; Argentinien (Prov. Tucuman); USNM, Washington, designated by Anderson & Anderson 1971: 4. Synonymy: Wood 1985: 269.
Notes: (1) Schedl 1979c: 25 (invalid designation of lectotype).
References: (**hb**) Viana 1964: 129. (**ds**) Blackwelder 1947: 788; Schedl 1966f: 81; Viana 1964: 129. (**tx**) Anderson, W. H. & Anderson 1971: 4; Eggers 1937a: 83–84; Schedl 1950i: 147, 1951h: 283, 1952a: 444–445, 1958f: 36, 1979c: 25; Wood, S. L. 1985: 269.

bruchi Schedl 1939m: 170 (*Scolytus*). Lectotype ♂; Misiones, orillas del Ignazu; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 48. Synonymy: Wood 1985: 269.
References: (**hb**) Viana 1964: 126. (**ds**) Blackwelder 1947: 788; Viana 1964: 126. (**tx**) Schedl 1939m: 170, 1979c: 48; Wood, S. L. 1985: 269.

cubensis Wood 1961d: 87. Holotype ♀; Cayamas, Cuba; USNM, Washington. Synonymy: Wood 1989: 175.
References: (**ds**) Bright 1985c: 171. (**tx**) Bright 1985c: 171; Wood, S. L. 1961d: 87, 1989: 175.

Genus *Scolytus* Geoffroy

SCOLYTUS GEOFFROY 1762: 309. Type-species: *Bostrichus scolytus* Fabricius, subsequent designation by International Commission on Zoological Nomenclature (ICZN) 1963a: 416, China 1963b: 416.

Ekkoptogaster Herbst 1793: 124. Type-species: *Bostrichus scolytus* Fabricius, subsequent designation by Hopkins 1914: 121. Synonymy: China 1962b: 8.
References: (**tx**) China 1962b: 8; Herbst 1793: 124; Hopkins 1914: 121.

Coptogaster Illiger 1807: 321. Type-species: *Bostrichus scolytus* Fabricius, subsequent designation by Hopkins 1914: 118. Synonymy: Isotypical synonym of *Scolytus*.
References: (**tx**) Bedel 1888b: 386; China 1962b: 8; Hopkins 1914: 118; Illiger 1807: 321; Swaine 1909: 103.

Eccoptogaster Gyllenhal 1813: 346. Type-species: *Bostrichus scolytus* Fabricius, automatic, invalid emendation of *Ekkoptogaster* Herbst.
References: (**tx**) Blackman 1922: 41–42, 1934: 4; Butovitsch 1928: 2–3; Chamberlin 1917: 325; China 1962b: 3–8, 1963b: 416; Eggers 1912: 207, 1914: 184–185; Ganglbauer 1903: 311; Gyllenhal 1813: 346; Hagedorn 1910a: 121–124, 1910d: 82–89; Herbst 1793: 124; Ratzeburg 1837: 168, 1839: 225; Reitter 1906: 707, 1913a: 13–26; Sampson 1923b: 269; Simmel 1928: 171; Spessivtsev 1913: 29–44, 1931: 7–19; Swaine 1909: 103, 1918a: 50–52; Tredl 1907: 5; Wichmann 1912: 8–9; Zimmerman 1868: 142.

Scolytochelus Reitter 1913a: 23. Type-species: *Ips multistriatus* Marsham, subsequent designation by Wood 1982b: 419. Synonymy: Schedl 1948b: 4, Wood 1982b: 419.
References: (**tx**) Reitter 1913a: 23; Schedl 1948b: 4; Wood, S. L. 1982b: 419.

Ruguloscolytus Butovitsch 1929: 20. Type-species: *Bostrichus rugulosus* Muller, subsequent designation by Wood 1982b: 419. Synonymy: Wood 1982b: 419.
References: (**tx**) Butovitsch 1929: 20; Wood, S. L. 1982b: 419.

Archaeoscolytus Butovitsch 1929: 21, 23. Type-species: *Scolytus claviger* Blandford. Synonymy: Nomen nudum, no status (originally presented as a species group name, no generic standing).
References: (**tx**) Butovitsch 1929: 21, 23; Tsai, Yin, & Huang 1962: 3, 13.

Spinuloscolytus Butovitsch 1929: 21, 24. Type-species: *Ips multistriatus* Marsham, subsequent designation by Wood 1986a: 59. Synonymy: Nomen nudum, no status (originally presented as a species group name, no generic standing).
References: (**tx**) Butovitsch 1929: 21, 24; Wood, S. L. 1986a: 59.

Tuberoscolytus Butovitsch 1929: 21, 33. Type-species: *Eccoptogaster intricatus* Ratzeburg, subsequent designation by Wood 1986a: 59. Synonymy: Nomen nudum, no status (originally presented as a species group name, no generic standing).

References: (**tx**) Butovitsch 1929: 21, 33; Wood, S. L. 1986a: 59.

Pygmaeoscolytus Butovitsch 1929: 21, 28. Type-species: *Bostrichus pygmaeus* Fabricius, subsequent designation by Wood 1986a: 59. Synonymy: Nomen nudum, no status (originally presented as a species group name, no generic standing).
References: (**tx**) Butovitsch 1929: 21, 28; Wood, S. L. 1986a: 59.

Pinetoscolytus Butovitsch 1929: 22, 48. Type-species: *Scolytus marawitzi* Semenov, monobasic. Synonymy: Nomen nudum, no status (originally presented as a species group name, no generic standing).
References: (**tx**) Butovitsch 1929: 22, 48.

Confusoscolytus Tsai & Huang 1962: 4, 14. Type-species: *Eccoptogaster confusus* Eggers, monobasic. Synonymy: Wood 1983a: 649.
References: (**tx**) Tsai & Huang 1962: 4, 14; Wood, S. L. 1983a: 649.

Keys: Blackman 1934: 6 and Wood 1982b: 420 for North America; Bright 1976d: 25 for Canada; Schedl 1937: 156 for South America; Schedl 1948: 4 and Michalski 1973a: 137 for Europe and Asia; Yin & Huang 1980: 47 and Yin, Huang, & Li 1984: 18 for China.

References: (**ay**) Lekander 1967; Norris & Baker 1968: 955–962; Nusslin 1911, 1912; Rice 1968: 53–56; Schonherr 1970b; Van Ryn-Tournal 1975. (**bv**) Vite 1975; Yates, M. G. 1984. (**cn**) Annand 1947: 15; Bromley 1948, 1949: 79–85; Chapman 1957: 3–4; Dietrich 1957: 33–36; Dietrich & Balin 1949: 7–11; Eichhorn & Pschorn-Walcher 1971; Felt 1933: 45–51, 1935: 231–236; Hilton 1970: 12–13; Jacot 1934: 858–859; Karaman 1972: 40–45; Karpick 1956: 160, 162; Kitchunov 1914; Ksenjopolsky 1914; Lanier et al. 1984; Liese 1952: 59–70; Martin 1936: 297–306; Myczkowski 1954: 635–636; Orr 1955: 4, 7; Peace 1954: 155–164, 1960: 38; Perry 1925: 410–413; Plumb 1950a: 110–111, 1950b: 8; Riley 1880: 298; Schlyter & Anderbrant 1987; Svjatovitch-Bielikova 1915: 89–106; Theobold 1914; Vite 1975; Whitesides 1957: 31–40; Yoneyama & Phaff 1960. (**ec**) Cushman 1931: 301–304; Eichhorn & Pschorn-Walcher 1971; Johnson, P. C. 1966b; Linquist, E. E. 1970: 980; Lipa 1968: 69–78; Nickle 1967b; Peace 1960: 17; Pettersen 1976b. (**hb**) Wood, S. L. 1986a: 58. (**ds**) Balachowsky 1963a: 1255; Blackwelder 1947: 788; Bright & Stark 1973: 14; Chararas 1960a: 35; Sokanovskii 1966; Wood, S. L. 1982b: 419, 1986a: 58; Yin, Huang, & Li 1984: 18. (**tx**) Anderson, R. F. 1960: 235; Apel 1983; Arnett 1960: 1040, 1968: 1040; Balachowsky 1944: 1–26, 1949a: 52, 1963: 1255, 1969: 647–655; Barbey 1901: 34; Beal & Massey 1945: 57, 66; Bedel 1888b: 286; Beeson 1918: 114–124, 1961: 296; Blackman 1934: 1–30; Blandford 1896e: 120–123; Blatchley & Leng 1916: 587–591; Bright 1976d: 25–40; Bright & Stark 1973: 14; Butovitsch 1929: 1–72; Chamberlin 1939: 219–236, 1958: 40–51; Chapuis 1869: 53–61, 1873: 261–269; Chararas 1960a: 35; China 1962b: 3–8, 1963b; Choo 1983: 37–42; Decaux 1890: 124; Desbrochers 1892: 10–17; Dodge 1938: 16, 20–21; Eggers 1939: 114–123; Eichhoff 1864: 31, 44, 46, 1881: 148; Fisher 1937: 129; Fourcroy 1785: 139; Geoffroy 1762: 309; Hopkins 1914: 129, 135, 1915c: 219–220; ICZN 1963a: 416; Judeich & Nitsche 1895: 443; Kammerman 1950: 12; Keen 1938; Krivolutskaya 1958: 108–113, 1965; Kurenzov 1941: 75–105; Lacordaire 1866: 386–387; Latreille 1807: 204; LeConte 1876: 370–371; LeConte & Horn 1883: 520; Lekander 1951: 72–78, 1967: 123–129, 1967b; Lindemann 1875; MacLeay 1882: 347; Marsham 1802 (as *Ips*); Michalski 1968b: 184–199, 1969a: 888–898, 1969c: 659–663, 1973a; Muller 1776: 57; Munro 1926: 1–27; Murayama 1954b: 154–155; Niisima 1909: 116; Nunberg 1930: 200–208, 1954; Olivier 1789; Pfeffer 1955: 70–90, 1989a: 44; Reitter 1894: 39, 1913: 13; Roberts 1869: 85–91; Saalas 1914: 70, 74–75; Sawamoto 1943: 143; Schedl 1948b: 1–67, 1950j: 96, 1954a: 137, 1959m: 545–557, 1981b: 39; Scheerpeltz & Winkler 1930: 255; Schevyrew 1890; Schimitschek 1937: 43; Schlyter & Anderbrant 1987; Schonherr 1970b; Semenov 1904: 37–38; Sokanovskii 1954: 13, 1966: 380–393; Spessivtsev 1913: 29–44, 1931: 7–19; Stresemann et al. 1989: 353; Swaine 1909: 104, 1918: 50; Thatcher 1940: 89; Trappen 1935: 140; Tsai & Li 1959; Tsai, Yin, & Huang 1962: 3, 13; Tsai et al. 1962; Wood, S. L. 1967c: 119–141, 1982b: 419–450, 1986a: 58; Van Ryn-Tournel 1975; Yin & Huang 1980: 47, 1981: 555; Yin, Huang, & Li 1984: 18.

***abaensis* Tsai & Yin** 1962: 10. Holotype ♂; Miyalo, Aba Tibetan, China; IZAS, Beijing.
Figures: Michalski 1973a:pl. 27, Yin, Huang, & Li 1984: 40 (adult).
Distribution: Asia (Ningxi, Shaanxi, Shanxi, Sichuan in China).
Hosts: *Cotoneaster microphylla* var. *gracilis*.
References: (**ds**) Michalski 1973a: 91; Yin, Huang, & Li 1984: 40. (**tx**) Michalski 1973a: 91–92, pl. 27; Tsai & Yin 1962: 10, 16; Yin & Huang 1980: 48; Yin, Huang, & Li 1984: 40.

***amazonicus* Schedl** 1972g: 52. Holotype ♀; Amazonas, Manaos; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**ds**) Browne 1970: 543. (**tx**) Schedl 1972g: 52, 1979c: 18.

***amygdali* Guerin-Meneville** 1847: 47. Holotype ♀; St. Talle, Amandia, France; IRSNB, Brussels.
Figures: Balachowsky 1963a: 1261, Michalski 1973a:pl. 28.
Distribution: Africa (Egypt/ Morocco), Asia (Cyprus/ India/ Israel/ Pakistan/ Syria/ Turkey/ E USSR), Europe (Austria/ Bulgaria/ Corsica/

France/ Greece/ Italy/ Sardinia/ Sicily/ Spain/ W USSR/ Yugoslavia).

Hosts: *Amelanchier ovalis*, *Amygdalus communis*, *Mespilus germanica*, *Prunus* spp.

Notes: (3) Eggers 1912a: 49 (described form *mailleri*, no status in nomenclature).

References: (**ay**) Batra 1956: 63–75; Butovitsch 1929: 50–51. (**cn**) Acloque 1914; Anonymous 1967m; Balachowsky 1963a: 1261; Berlese 1915; Blair 1920: 15; Chorbadzhievo 1925, 1926, 1927, 1929; Fiori 1950; Garcia-Tejero 1944, 1955: 226; Gentry, J. W. 1965: 90; Grandi 1951; Hill, D. S. 1983: 509; Janjua 1947: 85–92; Janjua & Samel 1941; Jolles 1932: 251–256; Kleine 1932a: 303; Lichtenstein & Picard 1920: 54–55; Martelli 1914: 165–170, 677, 1915: 165; Mathur & Singh 1960a: 43; Morris, H. M. 1930: 47–55, 1937: 22; Picard 1921: 16; Pierce, W. D. 1917: 25; Priego 1915: 1–6; Sarra 1930: 223–227; Schaefer, L. 1964; Schimitschek 1931c: 2125; Talhouk 1976; Wachtl 1901: 381; Wilkinson 1925: 9–10; Zaklama, Awadallah, & Abdallah 1978: 187. (**ec**) Arambourg 1964: 115; Chararas 1956b, 1957d; Fintzescu 1930; Jamnicky 1957b: 26; Kleine 1908c: 77, 1944: 79; Mendel & Gurevitz 1985; Novak 1952: 409; Russo 1926b: 84; Schaefer, L. 1964; Silvestri 1911: 1387; Thompson, W. R. 1943: 105; Thompson, W. R. & Simmonds 1964: 36, 1965: 6; Tudor 1969: 33. (**hb**) Anonymous 1967m; Balachowsky 1963a: 1261; Balachowsky & Mesnil 1935; Batra 1956: 63–75; Berlese 1915; Bodenheimer 1930; Chittenden 1890; Chorbadzhievo 1929; Dombrowsky 1892; Eichhoff 1881a: 41, 158; Fry 1989: 18; Grandi 1951; Gurevitz 1965; Henschel 1895a: 154; Hill, D. S. 1983: 509; Janjua 1950; Karaman 1967: 185; Kleine 1932a: 303; Lindemann 1887: 197; Mendel 1986c: 115; Roberti 1975; Rupertsberger 1880: 2289; Russo 1926: 75–86, 1931: 327–349, 1932: 87–113, 1939a: 4; Schedl 1981b: 41; Silvestri 1911: 387; Smith, J. B. 1886: 127; Stark 1952: 138; Talhouk 1976; Taschenberg 1901: 107; Tschorbadjiev 1929: 157; Wachtl 1901: 381. (**ds**) Acloque 1896, 1914; Anonymous 1967m; Balachowsky 1944b, 1963a: 1261; Barthe 1896; Batra 1856: 63–75; Blanchere & Robert 1889; Bodenheimer 1930; Brancsik 1874: 135; Buresh & Lazarov 1956; Butovitsch 1929: 50–51; Calwer 1884, 1893; Chapuis 1869: 61, 1873: 269; Chapuis & Candeze 1853; Chittenden 1890; Chorbadzhievo 1924d, 1929; Eggers 1912f: 29; Endrodi 1958b; Escalera 1919; Fairmaire 1880a, 1880b; Gemminger & Harold 1872: 2694; Gentry, J. W. 1965: 90; Georghiou 1977: 75; Gozis 1875: 80; Guerin-Meneville 1847: 47; Hagedorn 1910d: 83; Henschel 1895a: 154; Heyden, Reitter, & Weise 1883: 181, 1891: 670, 1906: 708; Hill, D. S. 1963: 154, 1987: 337; Horion 1935, 1951; Israelson 1968: 154; Kleine 1913a: 307, 313, 1913b: 151, 1914a: 16, 1932a: 303, 1934a: 168; Kobakhidze 1957: 178; Lacordaire 1866: 387; Langhoffer 1915c: 156; Lindemann 1887: 177; Lucht 1987: 275; Luigioni 1929: 990; Mathur & Singh 1960a: 43; Michalski 1973a: 92; Novak, P. 1952: 409, 1964; Nunberg 1964a: 234; Ortzen 1886: 279; Perris 1876a: 254, 1877a: 414; Pfeffer 1936: 90, 1947d: 129, 1955: 77; Pierce, W. D. 1917: 25; Pittioni 1943: 176; Ragusa 1924: 114; Reitter 1894a: 43, 1916: 272, 349; Sainte-Claire 1914: 468; Sainte-Claire & Mequignon 1938: 442; Schaufuss 1915: 1206; Schedl 1950d: 15, 1958g: 166, 1959h: 100, 1964a: 94–95, 1967c: 68, 1969g: 288, 1971d: 433, 1978e: 36, 1980a: 1, 1981b: 41; Schevyrew 1890c: 470; Schilsky 1909: 187; Seidlitz 1891a: 557; Smith, J. B. 1886: 127; Sokanovskii 1966: 389; Stark 1952: 138; Stein 1868: 114; Stein & Weise 1877: 164; Strauch 1861: 122; Tredl 1907: 6; Tschorbadjiev 1929: 157; Wichmann 1927a: 51. (**tx**) Acloque 1896; Anonymous 1967m: 1078; Balachowsky 1944b: 607, 1949a: 55, 1963a: 1261; Bertolini 1872; Brancsik 1874: 135–136; Butovitsch 1929: 50–51; Chapuis 1869: 61, 1873: 269; Chapuis & Candeze 1853; Chorbadzhievo 1924d; Csiki 1906; Desbrochers 1891; Dombrowsky 1892; Eggers 1911: 74, 1912a: 49, 1912f: 29; Eichhoff 1881a: 41, 158–159, 1883a: 105, 130; Endrodi 1957a, 1957b; Fauvel 1887; Guerin-Meneville 1847: 46–47; Hagedorn 1910a: 123; Henschel 1895a: 154; Israelson 1969: 154; Kuhnt 1913: 1048; Lacordaire 1866: 387; Lucht 1987: 275; Luigioni 1929: 990; Michalski 1973a: 92–94, pl. 28; Perris 1877a: 414; Portevin 1935: 311; Reitter 1894a: 43, 1913a: 22, 1916: 272, 349; Rupertsberger 1880: 228; Schedl 1934f: 1632, 1948b: 15, 1950d: 15, 1958g: 166, 1964a: 94–95, 1967c: 68, 74, 1980a: 1, 1981b: 41; Seidlitz 1891: 557; Semenov 1902: 268; Sokanovskii 1930: 803, 1966: 388–389; Stark 1952: 138; Taschenberg 1901: 107. (**ms**) Balachowsky 1963a: 1261.

amygdali rufipennis Brancsik 1874: 135. Syntypes, sex?; Trieste, Italy; not located. Synonymy: Schedl 1948b: 15.

References: (**hb**) Dombrowsky 1892. (**ds**) Reitter 1894a: 43; Sokanovskii 1966: 389; Stein & Weise 1877: 164. (**tx**) Brancsik 1874: 135; Dombrowsky 1892; Reitter 1894a: 43; Schedl 1934f: 1632, 1948b: 15; Sokanovskii 1966: 389.

anatolicus Eggers 1911a: 74 (*Eccoptogaster*). Lectotype ♂; Burna, Asiae Minoris; USNM, Washington, designated by Anderson & Anderson 1971: 4. Synonymy: Schedl 1948b: 15. References: (**ds**) Kleine 1913b: 151; Sokanovskii 1966: 389. (**tx**) Anderson, W. H. & Anderson 1971: 4; Balachowsky 1949a: 55; Butovitsch 1929: 6; Eggers 1911a: 74; Endrodi 1957: 420; Reitter 1913a: 22; Schedl 1934f: 1632, 1948b: 15; Sokanovskii 1955: 389.

aegyptiacus Pic 1919: 55. Holotype, sex?; Ghizeh, Egypt; Alfieri Collection and Pic Collection (in

MHNN, Paris?). Synonymy: Pic 1919: 55, Balachowsky 1949a: 55.
References: (**ay**) Butovitsch 1929: 6, 50. (**bv**) Maksimovic 1979: 285. (**cn**) Hammad 1961. (**ec**) Maksimovic 1979: 285. (**hb**) Hammad 1961: 151; Maksimovic 1979: 285. (**ds**) Butovitsch 1929: 6, 50. (**tx**) Balachowsky 1949a: 55; Butovitsch 1929: 6, 50; Hammad 1961: 151; Pic 1919: 55; Schedl 1934f: 1634, 1948b: 14.

***angustatus* Browne** 1970: 575. Holotype, sex?; Brazil: Santarem; BMNH, London.
Figures: Browne 1970: 575.
Distribution: South America (Brazil/ Guyana).
References: (**ds**) Schedl 1976a: 49. (**tx**) Browne 1970: 575–576.

***antennatus* Schedl** 1935f: 272. Holotype ♀; Brazil, Sao Paulo; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
Notes: (3) Schedl 1976a: 59 (described male).
References: (**ds**) Blackwelder 1947: 788; Schedl 1973d: 150. (**tx**) Schedl 1935f: 272, 1937h: 155–156, 1976a: 59, 1979c: 22.

***aomoriensis* Nobuchi** 1973a: 16. Holotype ♀; Japan: Aburakawa, Aomori; Nobuchi Collection, Ibaraki.
Figures: Nobuchi 1973a:pl. 1.
Distribution: Asia (Japan).
References: (**tx**) Nobuchi 1973a: 16.

***aratus* Blandford** 1894d: 79. Holotype ♂; Junsai, Japan; BMNH, London.
Figures: Michalski 1973a: 29, Nobuchi 1973a:pl. 1, Tsai & Li 1959: 77, Yin, Huang, & Li 1984: 33.
Distribution: Asia (Heilongjiang in China/ Japan/ Korea/ E USSR).
Hosts: *Ulmus* spp., *Prunus* spp., *Malus pumila*, *Machilus japonica*.
References: (**ay**) Butovitsch 1929: 6, 37. (**cn**) Anonymous 1980g. (**ec**) Kurenzov 1934a: 57. (**hb**) Krivolutskaya 1973: 130; Kurenzov 1935a: 19, 23, 1948b: 119; Stark 1952: 127. (**ds**) Anonymous 1980g; Blandford 1894c; Butovitsch 1929: 6, 37; Choo 1983: 38; Choo & Woo 1985: 163; Hagedorn 1910d: 83; Kleine 1913b: 151, 1914b: 259, 1934a: 168; Krivolutskaya 1965: 227, 1973: 130, 1983; Krivolutskaya & Kupyanskaya 1970; Kurenzov 1934a: 57, 1935a: 19, 23, 1936b: 350, 1938a: 58; Michalski 1973a: 94; Nobuchi 1973a: 17; Sokanovskii 1966: 381; Stark 1952: 127; Yin, Huang, & Li 1984: 33. (**tx**) Blandford 1894d: 79; Butovitsch 1929: 6, 37; Choo 1983: 38; Hagedorn 1910a: 123; Krivolutskaya 1958: 109–110, 1965: 227; Kurenzov 1941a: 81–82, 1948b: 119; Michalski 1968b: 189–190, 1973a: 94–96, pl. 29; Murayama 1936: 87–118, 1958: 929; Niisima 1905: 67, 71–73, 1909: 120, 1910a: 6; Nobuchi 1973a: 17, pl. 1; Schedl 1934f: 1633, 1948b: 33; Sokanovskii 1954: 14, 1966: 381, 389; Stark 1952: 127–128; Tsai & Li 1959: 77; Tsai, Yin, & Huang 1962: 4, 8; Yin & Huang 1980: 48; Yin, Huang, & Li 1984: 33.

aequipunctatus Niisima 1905: 71. Syntypes, sex?; Honshiu: Gifu, Hokkaido: Sapporo and Tomakomai in Prov. Iburi; Nobuchi Collection, Ibaraki. Synonymy: Schedl 1948b: 33.
Notes: (3) Niisima 1909: 121 (reduced to a variety of *aratus*).
References: (**ay**) Butovitsch 1929: 6, 43. (**ds**) Butovitsch 1929: 6, 43; Hagedorn 1910d: 83; Kleine 1913b: 151, 1914b: 259, 1934a: 168; Sokanovskii 1966: 389. (**tx**) Butovitsch 1929: 6, 43; Niisima 1905: 71, 1909: 121; Schedl 1934f: 1633, 1948b: 33; Sokanovskii 1966: 389.

intermedius Kurenzov 1941: 82. Holotype, sex?; Primorye, USSR; Kurenzov Collection, Vladivostok. Synonymy: Michalski 1973a: 94.
References: (**tx**) Kurenzov 1941: 82; Michalski 1973a: 94.

brevipennis Kurenzov 1941a: 100. Lectotype ♀; Initio fluvii Suputinka, Primorye, USSR; IZL, Leningrad, designated by Michalski 1973a: 94. Synonymy: Sokanovskii 1954: 14.
References: (**hb**) Kurenzov 1948b: 119; Stark 1952: 143. (**ds**) Sokanovskii 1966: 389; Stark 1952: 143. (**tx**) Kurenzov 1941a: 100, 1948b: 119; Michalski 1968a: 110, 1973a: 94; Schedl 1948b: 20; Sokanovskii 1954: 14; 1966: 389; Stark 1952: 143.

***atratus* Chapuis** 1869: 58. Holotype ♀; Colombie; IRSNB, Brussels.
Distribution: South America (Colombia).
References: (**ay**) Butovitsch 1929: 6. (**cn**) Kurenzov 1935c: 189. (**ds**) Blackwelder 1947: 788; Butovitsch 1929: 6; Gemminger & Harold 1872: 2695; Hagedorn 1910d: 83; Kleine 1913b: 151, 1914b: 342; Kurenzov 1935c: 189, 1936a: 110; Murayama 1935c: 189, 1954b: 154, 1955: 103. (**tx**) Butovitsch 1929: 6; Chapuis 1869: 58, 1873: 264; Eggers 1931a: 16; Hagedorn 1910a: 123; Krivolutskaya 1958: 110; Murayama 1950b: 1289, 1954b: 154, 1955: 103; Niisima 1909: 179; Schedl 1937h: 155–156, 160.

***azerbaidzhanicus* Michalski** 1964: 662. Holotype ♂; Lenkoran, Azerbaijan, USSR; IZL, Leningrad.
Figures: Michalski 1973a:pl. 30.
Distribution: Europe (W USSR).
Hosts: *Carpinus betulus*.
References: (**ds**) Michalski 1973a: 97. (**tx**) Michalski 1964: 662, 1968a: 111, 1968b: 192, 1973a: 97–98, pl. 30; Sokanovskii 1966: 389.

***aztecus* Wood** 1967c: 120. Holotype ♀; 43 km E Morelia, Michoacan, Mexico; Wood Collection.
Distribution: North America (Michoacan in Mexico).
Hosts: *Abies religiosa*.
References: (**hb**) Wood, S. L. 1982b: 440. (**ds**) Wood, S. L. 1982b: 440. (**tx**) Wood, S. L. 1967c: 120, 1982b: 440.

***barbatus* Schedl** 1976a: 59. Holotype ♂: Encruzilhada, 980 m, Bahia; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1976a: 59.

***barinensis* Wood** 1971: 18. Holotype ♂: Campamento Cachicamo, 40 km E Canton, Barinas, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: "Hevecito."
References: (**hb**) Kirkendall 1984: 235; Wood, S. L. 1971d: 18. (**tx**) Wood, S. L. 1971: 18.

***belokanicus* Stark** 1941: 302. Holotype ♂: Belokany, Azerbaijan, USSR; IZL, Leningrad.
Figures: Michalski 1968a: 112, 1973a:pl. 31.
Distribution: Europe (Azerbaijan in USSR).
Hosts: *Acer* sp.
References: (**hb**) Stark 1952: 128. (**ds**) Michalski 1973a: 98; Sokanovskii 1966: 389; Stark 1952: 128. (**tx**) Lozovoi 1960: 14; Michalski 1968a: 111–112, 1968b: 191, 1969b: 659, 1973a: 98–99, pl. 31; Schedl 1952q: 486; Sokanovskii 1954: 14, 1966: 389; Stark 1941: 302, 1952: 128–129.

***betulae* Niisima** 1943: 141. Holotype ♂; Pompira (Hokkaido), Japan; Nobuchi Collection, Ibaraki.
Figures: Nobuchi 1973a:pl. 1.
Distribution: Asia (Japan).
Hosts: *Betula platyphylla*.
References: (**cn**) Archer 1866. (**ds**) Michalski 1973a: 59; Murayama 1954b: 197. (**tx**) Michalski 1969b: 660, 1973a: 59–60; Murayama 1954b: 197; Niisima 1943: 141; Nobuchi 1973a:pl. 1; Sawamoto 1943: 144.

***bicinctus* Schedl** 1972g: 52. Holotype ♀; Brasil, Jacareacanga, Para; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1972g: 52.

***bicolor* Eggers** 1931a: 15. Holotype, sex?; Guya. Ven. Mor.; MNB, Berlin.
Distribution: South America (Venezuela).
References: (**ds**) Blackwelder 1947: 788; Horion 1935. (**tx**) Eggers 1931a: 15–16.

***binodus* Wood** 1982a: 230. Holotype ♀; Uxpanapa, Oaxaca, Mexico; Wood Collection.
Distribution: North America (Oaxaca in Mexico).
Hosts: *Combretom* sp.
References: (**hb**) Atkinson & Equihua 1986a: 420. (**ds**) Atkinson & Equihua 1986a: 420. (**tx**) Wood, S. L. 1982a: 230.

***bituberculatus* Puzyr** 1951: 46. Holotype ♂: Lobau, Nied. "Öst."; Schedl Collection in NHMW, Wien.
Distribution: Europe (Austria).
References: (**hb**) Schedl 1981b: 44. (**ds**) Lucht 1987: 275; Schedl 1980a: 1, 1981b: 44. (**tx**) Lucht 1987: 275; Puzyr 1951: 46; Schedl 1980a: 1, 1981b: 44.

***bolivianus* Schedl** 1966f: 97. Holotype ♀; Bolivien; Schedl Collection in NHMW, Wien.
Figures: Yin, Huang, & Li 1984: 25 (adult, galleries).
Distribution: South America (Bolivia).
References: (**tx**) Schedl 1966f: 97, 1979c: 43.

***butovitschi* Stark** 1936: 153. Lectotype ♂; Suchan, Primorye, USSR; IZL, Leningrad, designated by Michalski 1968b: 194.
Figures: Michalski 1968a: 114, 1973a:pl. 1, Yin, Huang, & Li 1984: 25.
Distribution: Asia (Hebei, Shaanxi in China/ Mongolia/ E USSR).
Hosts: *Ulmus propinqua*, *U. japonica*, *U. pumila*.
References: (**cn**) Kurenzov 1935c: 189. (**ec**) Kurenzov 1934a: 52; Yang 1989. (**hb**) Kurenzov 1935a: 20, 23; Stark 1952: 135; Yin, Huang, & Li 1984: 25. (**ds**) Krivolutskaya 1983; Krivolutskaya & Kupyanskaya 1970; Kurenzov 1934a: 52, 1935a: 20, 23, 1935c: 189, 1936b: 350; Michalski 1973a: 24; Sokanovskii 1960: 676; Stark 1952: 135; Yanovskii & Tegshzhargal 1985: 404; Yin, Huang, & Li 1984: 25. (**tx**) Kurenzov 1941a: 96–97; Lindeman 1961: 98, 100; Michalski 1968a: 113–114, 1968b: 194, 1973a: 24–27, pl. 1; Pfeffer 1944a: 131; Schedl 1948b: 63, 1952k: 258; Sokanovskii 1960: 676, 1966: 385; Stark 1936e: 153, 1951: 229, 1952: 135–136; Tsai, Yin, & Huang 1962: 4, 6–7; Yin & Huang 1980: 47; Yin, Huang, & Li 1984: 25. (**ms**) Pfeffer 1944a: 131.

butovitschi Eggers 1942c: 35. Syntypes 2 ♀; Suchan, Primorye, USSR; Eggers Collection, both syntypes in NHMW, Wien. Synonymy: Pfeffer 1944: 131.
References: (**hb**) Kurenzov 1948b: 120. (**ds**) Sokanovskii 1966: 381; Stark 1936e: 153. (**tx**) Eggers 1942c: 35–36; Kurenzov 1948b: 120; Pfeffer 1944: 131; Schedl 1948b: 63, 1952k: 158; Sokanovskii 1960: 676, 1966: 381; Stark 1951: 229.

***carinatus* Chapuis** 1869: 55. Syntypes 2 ♂; Carthagene [Argentina]; IRSNB, Brussels.
Distribution: South America (Argentina).
References: (**ay**) Butovitsch 1929: 6. (**hb**) Eichhoff 1881a: 41, 164. (**ds**) Blackwelder 1947; Butovitsch 1929: 6; Gemminger & Harold 1872: 2695; Hagedorn 1910d: 83; Kleine 1913b: 151, 1914b: 342; Schedl 1973d: 161. (**tx**) Bedel 1887: 191; Butovitsch 1929: 6; Chapuis 1869: 55, 1873: 263; Eichhoff 1881a: 41, 164, 1883a: 105, 130; Fauvel 1889; Hagedorn 1910a: 123; Hoffmann 1939: 37; Schedl 1937h: 155, 161, 1958f: 35–36.

***carpini* (Ratzeburg)** 1837: 187 (*Eccoptogaster*). Syntypes, sex?; Germany; ZIFH, Eberswalde.
Figures: Barbier & Menier 1975: 118; Balachowsky 1949a: 78, Michalski 1973:pl. 32.
Distribution: Asia (Turkey), Europe (Austria/ Belgium/ Bulgaria/ Czechoslovakia/ France/ Germany/ Greece/ Hungary/ Italy/ Luxemburg/

Netherlands/ Poland/ Romania/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia).

Hosts: *Carpinus* spp., *Fagus* spp., *Ostyra carpinifolia*.

References: (**ay**) Escherich 1923b: 477, 515; Scholz 1905: 144. (**bv**) Barbier & Menier 1975; Barr, B. A. 1969: 643; Chararas 1980b: 562; Grune 1979: 35; Meixner 1937: 1214; Michalski 1959c: 167; Prell 1930c: 629, 1931: 368. (**cn**) Acatay 1943a: 57–58; Barbey 1925: 637; Chorbadzhievo 1929; Escherich 1923b: 477, 515; Gabler 1955; Georgescu et al. 1957: 357, 406; Hess & Beck 1914: 242, 1927: 297; Judeich & Nitsche 1895: 444; Kleine 1932a: 303; Nusslin 1913: 232; Packard 1890: 860; Pierce, W. D. 1917: 137; Pomerantzev 1903: 118, 1938: 19; Rhumbler 1927: 285; Schimitschek 1955a: 156, 1955c: 73; Schwerdtfeger 1944a: 174, 1957a: 182; Wachtl 1901: 380; Wichmann 1927b: 358. (**ec**) Apel 1983; Barbier & Menier 1975; Boucek 1957b: 80; Chararas 1957d; Ehnstrom 1983; Fleischer 1911; Graham 1969: 875; Jamnicky 1957b: 20, 1957c; Kleine 1908c: 177, 1909a: 42, 1944: 72–73; Meyer 1934: 612; Nosek 1959a: 118, 1959b: 87; Nusslin 1927: 285; Pfeffer 1923a: 329, 1928b: 7, 1931b: 73, 1943b: 180; Schimitschek 1936a: 560, 1955a: 156; Schwerdtfeger 1944a: 174, 1957a: 182; Thompson, W. R. 1943: 105. (**hb**) Acatay 1943a: 57; Altum 1881c: 250; Apel 1983; Barbey 1925: 637; Barbier & Menier 1975; Bukowsky 1930; Butovitsch 1929: 6, 36; C. 1928; Cecconi 1924; Chittenden 1890; Chorbadzhievo 1929; Decaux 1890f, 1892: 241, 1893: 42; Dombrowsky 1887, 1892; Eckstein 1897; Ehnstrom 1983; Eichhoff 1881a: 41, 153; Escherich 1923b: 477, 515; Gabler 1953; Gyorfi 1957; Hagedorn 1903a; Henschel 1876a: 206, 242, 1895a: 155; Hess & Beck 1914: 242, 1927: 297; Judeich & Nitsche 1895: 444; Karpinski 1933b: 23; Karpinski & Strawinski 1948: 153; Kleine 1932a: 303; Knotek 1894a: 553, 1897: 142, 1898b: 320; Lengerken 1939: 50; Lunardoni & Leonardi 1889: 451; Marcu 1941: 401; Michalski 1959c: 167; Michel 1935: 41–43; Nordlinger 1856: 45; Nosek 1959a: 118, 1959b: 87; Nusslin 1898: 276, 1913: 232, 1927: 285; Packard 1890: 860; Palm 1955b: 145; Pomerantzev 1903: 118–124; Portevin 1935: 310; Postner 1974: 386; Prell 1930c: 629, 1931: 368; Ratzeburg 1837: 186, 1839: 230; Rhumbler 1927: 285; Rupertsberger 1880: 228; Schedl 1981b: 42; Schimitschek 1955a: 156; Schwerdtfeger 1944a: 174, 1957a: 182, 1981: 188; Simmel 1928: 154–155, 159; Smith, J. B. 1886: 127; Spessivtsev 1913a: 44; Stark 1952: 133; Taschenberg 1880: 243; Tschorbadjiev 1929: 155; Wachtl 1901: 380; Wichmann 1910b: 209, 1927b: 358. (**ds**) Acloque 1896; Arnoldi et al. 1955: 650; Audras & Schaefer 1957; Balachowsky 1943a, 1944b, 1949a: 167; Barthe 1896; Bau 1888; Bedel 1888b: 388, 405–406; Borchert 1951; Brakman 1966b: 203; Bucking 1932; Bukowsky 1930; Buresh & Lazarov 1956; Butovitsch 1929: 6, 36; Calwer 1884, 1893; Chapuis 1869: 60, 1873: 268; Chapuis & Candeze 1853; Chittenden 1890; Chorbadzhievo 1924d, 1929; Eder 1934; Eggers 1904; Endrodi 1958a, 1958b; Escalera 1919; Escherich 1923b: 477, 515, 1932b; Fauvel 1885; Fedorov 1930; Fowler 1891; Gaubil 1849: 127; Gemminger & Harold 1872: 2695; Gerhardt 1902; Gozis 1875: 80; Grune 1979: 35; Hagedorn 1903a, 1910d: 83; Hellen 1947; Henschel 1895a: 155; Heyden 1876: 296; Heyden, Reitter, & Weise 1883: 181, 1891: 670, 1906: 708; Horion 1951; Jazentkovsky 1912: 286; Judeich & Nitsche 1895: 444; Kaltenback 1874: 639; Karpinski 1925: 215, 1931: 18, 21, 38, 1933b: 23, 1948b: 228; Karpinski & Strawinski 1948: 153; Klefbeck & Sjoberg 1960; Kleine 1912a: 267, 1913a: 34, 1913b: 151, 1932a: 303, 1934a: 168; Knotek 1892a: 35, 1894a: 553, 1898b: 320; Koltze 1901: 152; Kraatz 1869: 59; Kurir 1947c: 22; Lacordaire 1866: 387; Langhoffer 1915c: 156; Leclercq 1971; Lomnicki 1886a: 241, 1913b: 147; Lucht 1987: 275; Luigioni 1929: 990; Lunardoni & Leonardi 1889: 451; Michel 1935: 41; Michalski 1973a: 100; Negru 1966b: 398, 1968a: 454; Nunberg 1928b: 87, 93, 1954: 92; Nusslin 1898: 276; Palm 1955b: 144–145, 1959: 19, 26, 346; Perris 1876a: 254, 1877a: 414; Pfeffer 1928b: 7, 1931b: 73, 1989a: 51; Pierce, W. D. 1917: 137; Pittioni 1943: 174; Postner 1974: 386; Rapp 1934: 717; Ratzeburg 1837: 186, 1839: 230; Redtenbacher 1858: 838, 1874: 373; Reitter 1869b: 154, 1894a: 42, 1916: 271; Revy & Siroki 1942: 82; Roubal 1941: 255; Ruskov 1928c: 61; Sainte-Claire & Mequignon 1938: 443; Schaufuss 1915: 1204; Schaum 1859: 95, 1862: 101; Schedl 1961b: 185, 1966f: 81, 1980a: 1, 1981b: 42; Schevyrew 1890c: 469; Schilsky 1891: 157, 1909: 187; Schmaus 1960: 32; Schwerdtfeger 1981: 188; Seidlitz 1872: 390, 1891a: 557, 1891b: 602; Simmel 1928: 154–171; Smith, J. B. 1886: 127; Sokanovskii 1966: 390; Stark 1926b: 101, 1927b: 86, 1952: 133; Stein 1868: 114; Stein & Weise 1877: 164; Stierlin 1898: 436; Sturm 1843: 229; Tredl 1907: 6, 1915a: 153; Tschorbadjiev 1929: 155; Westhoff 1882: 238; Wichmann 1910b: 209, 1927a: 50. (**tx**) Acloque 1896; Apel 1983; Bach 1854; Balachowsky 1943a: 167, 1944b: 22, 1949a: 69, 81; Barbier & Menier 1975: 118; Bedel 1888b: 388, 405–406; Butovitsch 1929: 6, 36; Chapuis 1869: 60, 1873: 268; Chapuis & Candeze 1853; Chorbadzhievo 1924d; Csiki 1906; Desbrochers 1891; Dombrowsky 1887, 1892; Eggers 1908: 215, 1911a: 75, 1912a: 47, 1913a: 286, 1914: 108, 1923b: 133; Eichhoff 1881a: 41, 153, 1883a: 105, 129; Endrodi 1957b: 420; Escherich 1923b: 477, 515; Escherich & Escherich 1897; Fauvel 1885, 1889; Ferrant 1911; Formanek 1907: 10; Gabler 1955; Grune 1979: 34–35; Hagedorn 1910a: 123; Henschel 1876a: 206, 242, 1895a: 155; Judeich & Nitsche 1895: 444; Kalina 1969;

Karpinski & Strawinski 1948: 153; Knotek 1892a: 35; Kuhnt 1913: 1048; Lacordaire 1866: 387; Letzner 1891: 374; Leunis 1886: 183; Lucht 1987: 275; Luigioni 1929: 990; Lunardoni & Leonardi 1889: 451; Meixner 1937: 1217; Michalski 1959c: 169, 1967: 315, 1973a: 100–101, 1973a:pl. 32; Negru 1966b: 398; Nordlinger 1848: 255, 1856: 45; Nunberg 1954: 92; Perris 1877a: 414; Pfeffer 1932b: 10, 1955a: 89–90; Postner 1974: 386; Quaschik 1953: 35; Ratzeburg 1837: 186, 1839: 230; Redtenbacher 1849: 792, 1849b: 27, 1858: 838, 1874: 373; Reitter 1894a: 42, 1913a: 20, 1916: 271; Rhumbler 1927: 285; Rupertsberger 1880: 228; Schedl 1934f: 1633, 1948b: 30, 1952f: 86, 1980a: 1, 1981b: 42; Schimitschek 1937: 43, 1955c: 73; Seidlitz 1872: 390, 1891a: 557, 1891b: 602; Sokanovskii 1954: 15, 1966: 389–390; Spessivtsev 1913a: 44, 1931: 19; Stark 1941: 299–302, 1952: 133–134; Stierlin 1898: 436; Stresemann et al. 1989: 353; Taschenberg 1880: 243. (**ms**) Escherich 1932b.

peregrinus Eggers 1908c: 214 (*Eccoptogaster*). Holotype ♂; not given, Eggers (1912a: 47) gave Sos, Gallia meridionalis; USNM, Washington. Synonymy: Schedl 1948b: 31.

References: (**ay**) Butovitsch 1929: 37. (**ds**) Arnoldi et al. 1955: 657; Butovitsch 1929: 37; Hagedorn 1910d: 85–86; Kleine 1913b: 152. (**tx**) Anderson, W. H. & Anderson 1971: 24; Balachowsky 1949a: 81; Butovitsch 1929: 37; Eggers 1908c: 214–215, 1912a: 47; Endrodi 1957: 420; Hagedorn 1910a: 123; Reitter 1913a: 22; Schedl 1934f: 1633, 1948b: 31, 1979c: 189.

balcanicus Eggers 1911a: 75. Syntypes ♂♀; Bjelasnica-planina in Bosnien (Michalski 1973a: 100 gives Kievo prope Sarajevo, Yugoslavia); repository? Synonymy: Balachowsky 1949a: 81.

References: (**ay**) Butovitsch 1929: 6, 37. (**hb**) Simmel 1928: 161. (**ds**) Butovitsch 1929: 6, 37; Horion 1935; Kleine 1913a: 307, 1913b: 151, 1934a: 168; Reitter 1916: 349; Schaufuss 1915: 1206; Sokanovskii 1966: 390. (**tx**) Balachowsky 1949a: 81; Butovitsch 1929: 6, 37; Eggers 1911a: 75, 1913a: 286, 1923b: 133; Michalski 1973a: 100; Reitter 1916: 349; Schedl 1934f: 1633, 1948b: 81, 1979c: 32; Simmel 1928: 156, 161; Sokanovskii 1954: 15, 1966: 390.

***caudatus* Eggers** 1931b: 35. Lectotype ♂; Rio de Janeiro, Brazil; USNM, Washington, designated by Anderson & Anderson 1971: 9.

Distribution: South America (Brazil).

References: (**ds**) Blackwelder 1947: 788. (**tx**) Anderson, W. H. & Anderson 1971: 9; Eggers 1931b: 35–37; Schedl 1979c: 55.

pseudocaudatus Eggers 1931: 37. Holotype, sex?; Sao Paulo; Eggers Collection, in NHMW, Wien. Synonymy: Schedl 1963h: 257.

References: (**ds**) Blackwelder 1947: 788; Eggers 1931: 37; Schedl 1963h: 257.

***chelogaster* Schedl** 1958g: 168. Syntypes 2♂, 2♀; Asam, Naga Hills, 3000 ft.; 4 syntypes in Schedl Collection in NHMW, Wien.

Distribution: Asia (Assam in India).

Hosts: *Ulmus lancifolia*.

Notes: (1) Schedl 1979c: 56 (citation of holotype invalid). (3) A series is in the FRI, Dehra Dun, but none of the specimens sent to Schedl were ever returned, all 4 syntypes are in the NHMW, Wien.

References: (**cn**) Mathur & Singh 1961b: 63. (**ds**) Beeson 1961: 296; Mathur & Singh 1961: 63. (**tx**) Schedl 1958g: 168–169, 1979c: 56.

***chikisanii* Niisima** 1905: 69. Syntypes, sex?; Sapporo and Mt. Moiwa, Hokkaido, Japan; Nobuchi Collection, Ibaraki.

Figures: Michalski 1973a:pl. 16, Nobuchi 1973a:pl. 1, Sokanovskii 1966: 374.

Distribution: Asia (Shanxi in China/ Japan/ Korea/ E USSR).

Hosts: *Ulmus carpinifolia, U. laciniata, U. campestris, U. japonica*.

References: (**ay**) Butovitsch 1929: 47. (**ec**) Inouye et al. 1955: 88; Kurenzov 1934a: 52. (**hb**) Inouye et al. 1955: 88; Kurenzov 1935a: 23, 1948b: 119; Stark 1952: 114. (**ds**) Butovitsch 1929: 47; Hagedorn 1910d: 84; Kleine 1913b: 151, 1914b: 259, 1934a: 168; Krivolutskaya 1983; Kurenzov 1934a: 52, 1935a: 23, 1936a: 111, 1936b: 350, 1938a: 58; Michalski 1973a: 60; Murayama 1954b: 197; Nobuchi 1973a: 17; Sokanovskii 1966: 381; Stark 1952: 114. (**tx**) Butovitsch 1929: 47; Hagedorn 1910a: 123; Krivolutskaya 1958: 110, 1965: 225–226; Kurenzov 1941a: 85–87, 1948b: 119; Michalski 1969c: 660, 1973a: 60–62, pl. 16; Murayama 1954b: 197; Niisima 1905: 69, 1909: 118; Nobuchi 1973a: 17, pl. 1; Schedl 1934f: 1633, 1941a: 42–43; 1948b: 42; Sokanovskii 1954: 14, 1966: 381–384; Stark 1952: 114.

curviventralis Niisima 1905: 70. Syntypes, sex?; Hokkaido: Mt. Moiwa, near Sapporo; Nobuchi Collection, Ibaraki. Synonymy: Sokanovskii 1954: 14.

References: (**ay**) Butovitsch 1929: 6, 47. (**cn**) Kurenzov 1935c: 189. (**hb**) Kurenzov 1935a: 19, 24, 1948b: 120; Stark 1956: 126. (**ds**) Butovitsch 1929: 6, 47; Hagedorn 1910d: 84; Kleine 1913b: 151, 1914b: 259, 1934a: 168; Kurenzov 1935a: 19, 24, 1935c: 189, 1936b: 350; Murayama 1936a: 122, 1940a: 230, 1942a: 53, 1954b: 154; Stark 1952: 126. (**tx**) Butovitsch 1929: 6, 47; Hagedorn 1910a: 123; Kurenzov 1941a: 86, 1948b: 120; Murayama 1936a: 122, 1940a: 230, 1954b: 154; Niisima 1905: 70, 1909: 119; Nobuchi 1973a:pl. 1; Schedl 1934f: 1633, 1948b: 41; Sokanovskii 1954: 14, 1956: 383, 1966: 386; Stark 1952: 126–127.

mandschuricus Schedl 1941a: 42. Syntypes, sex?; Weishache, Manchuria; Frey Collection in NHMBS, Basel, IPKE, Eberswalde, Schedl

Collection in NHMW, Wien. Synonymy: Sokanovskii 1954: 14.

References: (**tx**) Schedl 1941a: 42, 1948b: 40, 1979c: 148; Sokanovskii 1954: 14.

***claviger* Blandford** 1894d: 80. Holotype ♂; Kiga, Japan; BMNH, London.

Figures: Michalski 1973a:pl. 2, Nobuchi 1973a:pl. 1, Sokanovskii 1966: 382.

Distribution: Asia (Japan/ Korea/ E USSR).

Hosts: *Carpinus cordata, C. japonica, C. laxiflora*.

References: (**ay**) Butovitsch 1929: 23–24. (**bv**) Barr, B. A. 1969: 643. (**cn**) Kurenzov 1935c: 187; Shiraki 1952. (**ec**) Kurenzov 1934a: 57. (**hb**) Kurenzov 1935a: 19, 22, 1948b: 114; Stark 1952: 95. (**ds**) Blandford 1894c; Butovitsch 1929: 23–24; Cho 1957; Choo 1983: 38; Choo & Woo 1985: 163; Choo, Woo, & Park 1983: 176; Hagedorn 1910d: 84; Kleine 1913b: 151, 1914b: 259, 1934a: 168; Ko 1969: 283; Kurenzov 1934a: 57, 1935a: 19, 22, 1935c: 187, 1936b: 350, 1965; Michalski 1973a: 27; Murayama 1929b: 2, 1930b: 5, 1936b: 118, 1937b: 374, 1954b: 154; Nobuchi 1973a: 18; Shiraki 1952; Sokanovskii 1966: 388; Stark 1952: 95. (**tx**) Blandford 1894d: 80; Butovitsch 1929: 23–24; Choo 1983: 38; Claus 1958; Eggers 1914: 185; Hagedorn 1910a: 123; Kurenzov 1941a: 77–78, 1948b: 114; Michalski 1973a: 27–28, pl. 2; Murayama 1930b: 5–6, 1934c: 298, 1937b: 374, 1954b: 154; Niisima 1909: 122; Nobuchi 1973a: 18, pl. 1; Schedl 1934f: 1632, 1948b: 58; Sokanovskii 1954: 13, 1966: 382, 388; Stark 1952: 95–96, 146–147; Tsai, Yin, & Huang 1962: 4.

platystylus Wichmann 1915b: 213. Holotype ♂; Eastern Siberia (Amur), USSR; Wichmann Collection, not located. Synonymy: Schedl 1948b: 58.

References: (**ay**) Butovitsch 1929. (**hb**) Arnoldi et al. 1955: 657; Stark 1952: 146. (**ds**) Butovitsch 1929: 9; Sokanovskii 1966: 388; Stark 1952: 146. (**tx**) Butovitsch 1929: 9; Kurenzov 1941a: 93–95; Murayama 1930: 38; Schedl 1948b: 58; Sokanovskii 1954: 13, 1966: 388; Stark 1952: 146; Wichmann 1915b: 213–214.

***conidens* Browne** 1970: 574. Holotype ♀; Brazil: Bahia; BMNH, London.

Distribution: South America (Brazil).

References: (**tx**) Browne 1970: 574–575.

***convexus* Schedl** 1972g: 53. Holotype, sex?; Brasilien, Bocaiuva (Pa.), 20.0.8, 49.04, 1000 m; Schedl Collection in NHMW, Wien.

Distribution: South America (Brazil).

References: (**tx**) Schedl 1972g: 53, 1979c: 65.

***costellatus* Chapuis** 1869: 58. Holotype ♀; Bresil, Nova-Fribourg; IRSNB, Brussels.

Distribution: North America (Costa Rica), South America (Brazil/ Venezuela).

Hosts: Liana.

References: (**ay**) Butovitsch 1929: 6. (**cn**) Costa Lima 1956. (**hb**) Costa Lima 1956. (**ds**) Blackwelder 1947: 788; Blandford 1896e: 121–123; Butovitsch 1929: 6; Costa Lima 1956; Ferrer 1942; Gemminger & Harold 1872: 2695; Hagedorn 1910d: 84; Kleine 1913b: 151, 1914b: 336, 353; Wood, S. L. 1982b: 444. (**tx**) Blandford 1896e: 121–123; Butovitsch 1929: 6; Chapuis 1869: 58, 1873: 266; Costa Lima 1956; Hagedorn 1910a: 123; Schedl 1937h: 155–156, 1940a: 329; Wood, S. L. 1982b: 444.

***cristatus* Wood** 1969b: 12. Holotype ♂; Lower Rio Tempisque, Guanacaste, Costa Rica; Wood Collection.

Figures: Wood 1969b: 13.

Distribution: North America (Costa Rica/ Colima, Jalisco in Mexico), South America (Venezuela).

Hosts: Liana.

References: (**ec**) Equihua & Atkinson 1986: 627. (**hb**) Atkinson et al. 1986: 54; Equihua & Atkinson 1986: 627; Wood, S. L. 1982b: 445. (**ds**) Atkinson & Equihua 1988: 100; Atkinson et al. 1986: 54; Equihua & Atkinson 1986: 627; Estrada & Atkinson 1988: 204; Wood, S. L. 1982b: 445. (**tx**) Wood, S. L. 1969b: 12–13, 1982b: 445.

***dahuricus* Chapuis** 1869: 60. Holotype ♂; Siberie, Daourie [USSR]; IRSNB, Brussels.

Figures: Michalski 1973a:pl. 34, Nobuchi 1973:pl. 1, Tsai & Li 1959: 78.

Distribution: Asia (Heilongjiang in China/ Japan/ Sakhalin Island/ E USSR).

Hosts: *Betula* spp.

References: (**ay**) Butovitsch 1929: 7, 37; Takenouchi 1974. (**cn**) Kurenzov 1935c: 189. (**hb**) Budkov 1897; Krivolutskaya 1973: 130; Kurenzov 1935a: 21, 1948b: 117; Stark 1952: 133; Yin, Huang, & Li 1984: 31. (**ds**) Budkov 1897; Butovitsch 1929: 7, 37; Dejean 1937; Gemminger & Harold 1872: 2695; Hagedorn 1910d: 84; Heyden 1881: 177, 1893: 177, 1898: 76; Kleine 1913b: 151, 1914b: 250; Krivolutskaya 1973: 130, 1983; Kurenzov 1935a: 21, 1935c: 189, 1938a: 61; Michalski 1973a: 104; Murayama 1954b: 154; Nobuchi 1973a: 18; Reitter 1894a: 42; Schevyrew 1890c: 471; Sokanovskii 1966: 381; Stark 1952: 133; Yanovskii & Tegshzhargal 1985: 415; Yin, Huang, & Li 1984: 31. (**tx**) Blandford 1894d: 78–79; Butovitsch 1929: 7, 37; Chapuis 1869: 60, 1873: 268; Eggers 1922d: 116, 1933d: 75; Hagedorn 1910a: 123; Heyden 1893: 177; Krivolutskaya 1958: 109–110; Kurenzov 1935: 21–22, 1941a: 79–81, 1948b: 117; Michalski 1968b: 194, 1969c: 659, 1973a: 104–107, pl. 34; Murayama 1954b: 154; Niisima 1943: 140–142; Nobuchi 1973a: 19, pl. 1; Reitter 1894a: 42, 1913a: 21; Sawamoto 1943: 144; Schedl 1934f: 1633, 1948b: 34; Semenov 1902: 267; Sokanovskii 1930: 803, 1954: 15, 1966: 381; Stark 1938: 129, 1941: 301, 1952: 133–135; Tsai & Li 1959: 78; Tsai, Yin, & Huang 1962: 3–4, 8; Yin & Huang 1980: 48; Yin, Huang, & Li 1984: 31.

agnatus Blandford 1894d: 78. Holotype ♀; Junsai,

Japan: BMNH, London. Synonymy: Niisima 1943: 142.

References: (**ay**) Butovitsch 1929: 6, 47. (**ds**) Butovitsch 1929: 6, 47; Hagedorn 1910d: 83; Kleine 1913b: 151, 1914b: 259, 1934a: 168. (**tx**) Blandford 1894d: 78; Butovitsch 1929: 6, 47; Hagedorn 1910a: 123; Niisima 1905: 67, 1909: 119, 1910a: 2, 1943: 142; Schedl 1934f: 1633, 1947c: 63, 1948b: 28.

possyeti Stark 1938: 129. Lectotype ♀; Posieti, southern Primorye, USSR; IZL, Leningrad, designated by Michalski 1973a: 104. Synonymy: Schedl 1948b: 34.

References: (**hb**) Kurenzov 1948b: 117; Stark 1952: 134. (**ds**) Kurenzov 1965; Sokanovskii 1966: 389; Stark 1952: 134. (**tx**) Kurenzov 1948b: 117; Michalski 1968a: 113, 1973a: 104; Schedl 1948b: 34; Sokanovskii 1954: 15, 1966: 389; Stark 1938: 129, 1952: 134.

***dentatus* Bright** 1964: 167. Holotype ♂; Cone Peak, Monterey Co., California [USA]; CAS, San Francisco.

Figures: Bright 1964: 168, Edson 1967: 49 (adult), 57 (galleries).

Distribution: North America (California in USA).

Hosts: *Abies bracteata*.

References: (ay) Thomas, J. B. 1967. (ec) Furniss, R. L. & Carolin 1977: 403; Kinn 1971. (**hb**) Bright & Stark 1973: 14; Edson 1967: 22; Furniss, R. L. & Carolin 1977: 403; Wood, S. L. 1982b: 443. (**ds**) Bright & Stark 1973: 14; Edson 1967: 22; Furniss, R. L. & Carolin 1977: 403; Wood, S. L. 1982b: 443. (**tx**) Bright 1964: 167–168; Edson 1967: 22, 49; Thomas, J. B. 1967; Wood, S. L. 1982b: 443.

***dimidiatus* Chapuis** 1869: 57. Syntypes ♂♀; Toxpam [Veracruz, Mexico], and Cuba; IRSNB, Brussels.

Figures: Blandford 1896e:pl. 5.

Distribution: Antilles Islands (Cuba), North America (Costa Rica/ Guatemala/ Veracruz in Mexico), South America (Venezuela).

Hosts: *Lonchocarpus margaritensis*, *L.* sp.

References: (**ay**) Butovitsch 1929: 7. (**cn**) Downes & Williams 1950: 39; Ishikura 1966. (**hb**) Kirkendall 1984: 235; Wood, S. L. 1982b: 447. (**ds**) Blackwelder 1947: 788; Blandford 1896e: 121–122; Bright 1972d: 27, 1985c: 171; Butovitsch 1929: 7; Ferrer 1942; Gemminger & Harold 1872: 2695; Hagedorn 1910d: 84; Ishikura 1966; Kleine 1913b: 151, 1914b: 353, 365, 378; Murayama 1957a: 36; Schedl 1963c: 156, 1977e: 41; Wood, S. L. 1982b: 447. (**tx**) Blandford 1896e: 121–122; Bright 1972d: 27, 1985c: 171; Browne 1970: 574; Butovitsch 1929: 7; Chapuis 1869: 57, 1873: 265; Hagedorn 1910a: 123; Schedl 1935f: 272, 1940a: 329; Wood, S. L. 1956c: 258, 1982b: 447.

***ecksteini* Butovitsch** 1929: 26. Holotype ♂; Massota, Caucasus, USSR; Butovitsch Collection, Stockholm.

Figures: Michalski 1973a:pl. 3.

Distribution: Europe (W USSR), Asia (Iran).

Hosts: *Ulmus carpinifolia*.

References: (**ay**) Butovitsch 1929: 26. (**cn**) Goidanich & Goidanich 1934. (**hb**) Stark 1952: 96. (**ds**) Butovitsch 1929: 26; Kleine 1934a: 168; Michalski 1973a: 28; Sokanovskii 1966: 387; Stark 1952: 96. (**tx**) Butovitsch 1929: 26; Michalski 1973a: 28–30, pl. 3; Murayama 1930: 9–10; Schedl 1934f: 1632, 1948b: 63; Sokanovskii 1958: 37, 1966: 385–387; Stark 1952: 96–97.

***eichhoffi* Reitter** 1894a: 40. Holotype ♂; Lenkoran, Azerbaijan, USSR; NHMB, Budapest.

Figures: Michalski 1973a:pl. 17, Sokanovskii 1966: 384.

Distribution: Europe (Bulgaria/ Azerbaijan in USSR), Asia (Iran).

References: (**ay**) Butovitsch 1929: 7, 42. (**cn**) Chorbadzhievo 1929. (**hb**) Adeli 1972: 14; Chorbadzhievo 1929; Stark 1952: 111; Tschorbadjiev 1929: 154. (**ds**) Adeli 1972: 14; Buresh & Lazarov 1956; Butovitsch 1929: 7, 42; Chorbadzhievo 1924d, 1929; Hagedorn 1910d: 84; Heyden, Reitter, & Weise 1906: 708; Kleine 1913b: 151, 1934a: 168; Michalski 1973a: 63; Reitter 1894a: 40; Schaufuss 1915: 1206; Sokanovskii 1966: 383; Stark 1952: 111; Tschorbadjiev 1929: 154. (**tx**) Balachowsky 1949a: 73; Butovitsch 1929: 7, 42; Chorbadzhievo 1924d; Eggers 1908b: 144, 1941c: 123; Hagedorn 1910a: 123; Michalski 1973a: 63–64, pl. 17; Reitter 1894a: 40, 1913a: 15–16; Schedl 1934f: 1633, 1948b: 43, 1964k: 221; Sokanovskii 1966: 383–384; Stark 1952: 111.

iranicus Eggers 1941c: 123. Holotype ♀; Iran (Astrabad); Eggers Collection (not listed by either Anderson & Anderson 1971 or Schedl 1979c). Synonymy: Michalski 1973a: 63.

References: (**tx**) Eggers 1941c: 123; Michalski 1973a: 63; Schedl 1948b: 48.

***ellipticus* Murayama** 1958: 929. Holotype, sex?; Onino-oshidashi, Naganohara, Gumma pref., Japan; Murayama Collection in USNM, Washington.

Figures: Nobuchi 1973a:pl. 1.

Distribution: Asia (Japan).

Hosts: *Sorbus commixta*.

References: (ds) Nobuchi 1973a: 20. (tx) Murayama 1958: 929; Nobuchi 1973a: 20, pl. 1.

***elongatus* Schedl** 1972g: 54. Holotype ♀; Brasilien, S. Caraca, S. Barbara, M. Gerais, 1450 m; Schedl Collection in NHMW, Wien.

Distribution: South America (Brazil).

References: (**tx**) Schedl 1972g: 54, 1979c: 90.

***ensifer* Eichhoff** 1880: 163. Syntypes ♂; Paris, France; Hamburg Museum, lost.

Figures: Balachowsky 1949a: 58 (adult), Michalski 1973a:pl. 4.

Distribution: Asia (E USSR), Europe (Austria/ Bulgaria/ Czechoslovakia/ France/ Greece/ Hungary/ Italy/ Poland/ Romania/ Sicily/ W USSR/ Yugoslavia).

Hosts: *Ulmus* spp., *Prunus* spp., *Zelkova carpinifolia*.

Notes: (3) Michalski 1973a: 33 (named form *talyphensis*, no status).

References: (**ay**) Butovitsch 1929: 30–31; Escherich 1923b: 477. (**bv**) Grune 1979: 33; Maksimovic 1979a: 285; Meixner 1937: 1214; Michalski 1959c: 167; Prell 1930c: 631. (**cn**) Brasier 1983: 100; Escherich 1923b: 477; Goidanich & Goidanich 1934; Kholodkovskii 1912: 291; Marcu 1926c: 59; Mokrzecki 1926b: 4; Pfeffer 1979: 148; Rhumbler 1927: 285; Schwerdtfeger 1944a: 172, 1957a: 181; Tubeuf 1936: 506; Vajda 1952: 114, 121; Wichmann 1927b: 353, 359. (**ec**) Balazy 1965a; Balazy & Michalski 1962c; Brasier 1983: 100; Escherich 1935; Graham 1969: 876; Kleine 1908c: 177; Kostenko 1929; Lipa 1968; Lipa & Chmielewski 1977; Maksimovic 1979c: 285; Nosek 1959a: 118, 1959b: 87; Pfeffer 1928b: 2, 1931b: 73, 1943b: 180, 1979: 148; Rafes 1962; Schwerdtfeger 1944a: 172, 1957a: 181; Szczepanski 1961: 5; Wisniewski 1984. (**hb**) Decaux 1890d: 124–125, 1890e, 1890f; Dombrowsky 1887; Eggers 1906; Eichhoff 1881a: 41, 163; Escherich 1923b: 477; Gyorfi 1957; Kholodkovskii 1912: 291; Lengerken 1939: 49, 1954: 65; Lindemann 1964: 78–83; Maksimovic 1979a: 285; Maslov 1963a: 80–100, 1963c: 848; Michalski 1959c: 167, 1962a, 1962d: 273–276; Nosek 1959a: 118, 1959b: 87; Pfeffer 1942a: 11; Prell 1930c: 631; Postner 1974: 385; Rafes 1962; Rhumbler 1927: 285; Rimski-Korsakov et al. 1949: 267; Schedl 1981b: 44; Schwerdtfeger 1944a: 172, 1957a: 181, 1981: 187; Spessivtsev 1913a: 29; Stark 1952: 108; Wichmann 1927b: 353, 359. (**ds**) Acloque 1896; Balachowsky 1943a, 1944b; Barthe 1896; Bayer 1936a; Bedel 1888b: 388, 406; Butovitsch 1929: 30–31; Csiki 1914; Eggers 1906; Endrodi 1958b; Escherich 1923b: 477, 1932b; Grune 1979: 33; Hagedorn 1910d: 84; Heyden, Reitter, & Weise 1891: 670, 1906: 708; Jacentkovsky 1912: 286, 1935: 19; Kalandra & Pfeffer 1935; Kleine 1913a: 89, 1913b: 151, 1934a: 168; Kostenko 1929; Langhoffer 1915c: 156; Lucht 1987: 275; Luigioni 1929: 990; Marcu 1926c: 59; Michalski 1957a: 73, 1957b: 461, 1960: 233, 1967: 310–311, 1968b: 196, 1973a: 30; Nunberg 1954: 88, 1960a: 160; Orest 1926c: 59; Pascovici 1962; Pfeffer 1928b: 2, 1930b: 119, 1931b: 73, 1989a: 46; Postner 1974: 385; Reitter 1894a: 44, 1913a: 23, 1916: 272; Rimski-Korsakov et al. 1949: 267; Roubal 1941: 255; Sainte-Claire & Mequignon 1938: 443; Schaufuss 1915: 1206; Schedl 1967c: 68, 1980a: 1, 1981b: 44; Schwerdtfeger 1981: 187; Semenov 1909: 38; Sokanovskii 1966: 388; Spessivtsev 1913a: 29; Stark 1927b: 86, 1952: 108; Tredl 1907: 7; Wichmann 1927a: 51; Zvierezomb & Zubovsky 1918. (**tx**) Acloque 1896; Balachowsky 1943a, 1944b: 8–9, 1949a: 60, 1963a: 1241; Bedel 1888b: 388, 406; Butovitsch 1929: 30–31; Dombrowsky 1887; Eggers 1910f: 557–558, 1911a: 122, 1913a: 286, 1914: 184–185; Eichhoff 1881a: 41, 163, 1883a: 105, 130; Endrodi 1957a, 1957b; Escherich 1923b: 477; Fauvel 1883: 106, 1889; Grune 1979: 33; Hagedorn 1910a: 123; Hoffmann 1939: 36–37; Jacentkovsky 1935: 19; Lucht 1987: 275; Luigioni 1929: 990; Meixner 1937: 1214; Michalski 1957b: 461, 1959c: 169, 1962b: 199, 1973a: 30–33, pl. 4; Nunberg 1954: 88, 1960: 160; Pfeffer 1932b: 10, 1942a: 11, 1955a: 76, 1965: 61, 1989a:pl. 5; Portevin 1935: 311; Postner 1974: 385; Quaschik 1953: 35; Reitter 1894a: 44, 1913a: 23, 1916: 272; Rey 1892: 30; Rhumbler 1927: 285; Schedl 1934f: 1633, 1948b: 60, 1957: 168, 1967: 68, 1980a: 1, 1981b: 44; Schevyrew 1893a: 116–118, 1893b: 74–77; Semenov 1904: 38; Sokanovskii 1966: 382, 384, 388; Spessivtsev 1913: 29–30, 1921: 8; Stark 1952: 108. (**ms**) Escherich 1932b; Rohrl 1914b: 157; Schimitschek 1930b: 407.

***esuriens* Blandford** 1894c: 77. Syntypes ♂; Japan: Junsai, Miyanoshita, and Chiuzenji; IRSNB, Brussels.

Figures: Michalski 1973a:pl. 18, Nobuchi 1973a:pl. 2, Tsai & Li 1959: 75, Yin, Huan, & Li 1984: 28.

Distribution: Asia (Heilongjiang, Jilin in China/ Japan/ Sakhalin Island in E USSR).

Hosts: *Ulmus* spp., *Fraxinus mandshurica*.

References: (**ay**) Butovitsch 1929: 7, 47. (**ec**) Inouye et al. 1955: 90; Yasumatsu & Watanabe 1965: 70. (**hb**) Inouye et al. 1955: 90; Stark 1952: 112; Stebbing 1909b: 21; Yin, Huang, & Li 1984: 28. (**ds**) Blandford 1894c: 77; Butovitsch 1929: 7, 47; Hagedorn 1910d: 84; Kleine 1913b: 151, 1914b: 259, 1934a: 168; Krivolutskaya 1983; Kurenzov 1936b: 350; Michalski 1973a: 64; Murayama 1954b: 155; Nakane et al. 1963: 381; Nobuchi 1973a: 20; Sokanovskii 1966: 383; Stark 1952: 112; Yin, Huang, & Li 1984: 28. (**tx**) Blandford 1894c: 77; Butovitsch 1929: 7, 47; Eggers 1908e; Hagedorn 1910a: 123; Kurenzov 1941a: 87–88; Michalski 1964: 666–668, 1968a: 111, 1969c: 661, 1973a: 64–68, pl. 18; Murayama 1936: 147, 1954b: 155; Nakane et al. 1963: 381, pl. 191; Niisima 1905: 67–69, 1909: 117, 1943: 142; Nobuchi 1973a: 20, pl. 2; Reitter 1913: 15; Schedl 1934f: 1633, 1948b: 43; Sokanovskii 1954: 14, 1966: 383–384; Stark 1952: 112–114; Stebbing 1909b: 21; Tsai & Li 1959: 75; Tsai, Yin, & Huang 1962: 4, 7; Wichmann 1916: 13; Yin & Huang 1980: 47; Yin, Huang, & Li 1984: 28. (**ms**) Eggers 1910b.

sachalinensis Michalski 1964: 666. Holotype ♂; Bayukly, prope Proonaisk, Sakhalin; IZL, Leningrad. Synonymy: Michalski 1969c: 661.

References: (**tx**) Michalski 1964: 666, 1968a: 111, 1969c: 661; Sokanovskii 1966: 383.

***fagi* Walsh** 1867b: 58. Syntypes 6, sex?; Southern Illinois [USA]; not given.

Distribution: North America (Illinois, Mississippi, Texas in USA).

Hosts: *Fagus grandifolia*, rare in *Celtis occidentalis*, *Quercus nuttallii*.

References: (**ay**) Butovitsch 1929: 7. (**cn**) Blackman 1950; Chamberlin 1924; Drooz 1985: 356; Packard 1890: 520, 611; Riley 1880b: 298; Swaine 1918a: 51; Walsh 1867b: 58. (**ec**) Felt 1906: 722. (**hb**) Baker, W. L. 1972: 238; Beal & Massey 1945; Blackman 1922b, 1950; Chamberlin 1939: 227; Chittenden 1890; Drooz 1985: 356; Felt 1906: 722; Packard 1890: 520, 611; Pierce 1907: 292; Smith, J. B. 1886: 127; Swaine 1918a: 51. (**ds**) Atkinson et al. 1991: 157; Beal & Massey 1945; Blackman 1922b: 42, 47, 1950; Blackwelder 1939; Blatchley & Leng 1916: 589; Butovitsch 1929: 7; Chamberlin 1939: 227; Chittenden 1890; Drooz 1985: 356; Gemminger & Harold 1872: 2695; Hagedorn 1910d: 84; Henshaw 1885; Kleine 1913b: 151, 1914b: 399, 1934a: 168; Leng 1920: 337; Smith, J. B. 1886: 127; Swaine 1909: 104; Wood, S. L. 1982b: 427. (**tx**) Beal & Massey 1945; Blackman 1922b: 42, 47, 1934: 11–12; Blatchley & Leng 1916: 589; Butovitsch 1929: 7; Chamberlin 1939: 227; Hagedorn 1910a: 123; LeConte 1868: 166, 1876: 371–372; Swaine 1909: 104, 1910a: 33, 1918a: 51; Walsh 1867b: 58; Wood, S. L. 1982b: 427.

***facialis* Schedl** 1973d: 164. Holotype ♂; Brasilien, Amazona, Maturaca, alto Rio Canaburi; MZUSP, Sao Paulo.

Distribution: South America (Brazil).

References: (**tx**) Schedl 1973d: 164, 1979c: 94.

***frontalis* Blandford** 1894d: 79. Holotype ♂; Fukushima, Japan; BMNH, London.

Figures: Michalski 1973a:pl. 35, Nobuchi 1973a:pl. 2.

Distribution: Asia (Japan/ Taiwan).

Hosts: *Ulmus campestris* var. *major*.

References: (**ay**) Butovitsch 1929: 7, 37. (**cn**) Anonymous 1980a. (**hb**) Takahashi 1989: 403. (**ds**) Anonymous 1980g; Blandford 1894c; Butovitsch 1929: 7, 37; Choo & Woo 1983; Hagedorn 1910d: 84; Kleine 1913b: 151, 1914b: 259, 1934a: 168; Michalski 1973a: 107; Murayama 1953a: 4, 1953c: 144, 1954b: 155, 1955: 101; Nakane et al. 1963: 381; Nobuchi 1967: 18, 1973a: 21; Sokanovskii 1966: 388. (**tx**) Blandford 1894d: 79; Butovitsch 1929: 7, 37; Eggers 1939c: 115; Hagedorn 1910a: 123; Michalski 1969c: 660, 1973a: 107–109, pl. 35; Murayama 1934c: 298, 1943: 97, 1953a: 4, 1954b: 155, 1955: 101; Nakane et al. 1963: 381, pl. 191; Niisima 1905: 70, 1909: 117–119, 1910a: 5; Nobuchi 1973a: 21, pl. 2; Schedl 1934f: 1633, 1948b: 26, 1979c: 100; Sokanovskii 1958: 37, 1966: 388; Stark 1941: 299; Strohmeyer 1914: 32.

formosanus Eggers 1939c: 115. Lectotype ♀; Formosa; USNM, Washington, designated by Anderson & Anderson 1971: 13. Synonymy: Schedl 1962p: 486.

References: (**tx**) Anderson, W. H. & Anderson 1971: 13; Eggers 1939c: 15; Schedl 1962p: 486, 1979c: 99.

***golbachi* Schedl** 1951g: 288. Syntypes ♂♀; Argentinien, Misiones, Pto. Bemberg; Schedl Collection in NHMW, Wien and Fundacion Miguel Lillo, Tucuman.

Distribution: South America (Argentina).

Notes: (1) Schedl 1979c: 106 (citation of holotype invalid).

References: (**tx**) Schedl 1951g: 288, 1979c: 106.

***gretschkini* Sokanovskii** 1956: 42. Holotype ♂; prope Ordjonikidzebad, Tajikistan, USSR; Sokanovskii Collection.

Figures: Greckin 1956:1484, Michalski 1973a:pl. 36.

Distribution: Asia (Tajikistan in E USSR).

Hosts: *Prunus* spp.

References: (**cn**) Greckin 1956: 1483. (**hb**) Greckin 1956: 1483; Kulinich 1965: 138–140; Makhnovskii 1966: 92. (**ds**) Kadyrov 1988: 43–44; Michalski 1973a: 109; Sokanovskii 1956: 42–43, 1958: 37, 1960, 1966: 389. (**tx**) Greckin 1956: 1484; Michalski 1968a: 113–114, 1968b: 195, 1973a: 109–111, pl. 36; Sokanovskii 1956: 42–43, 1958: 37, 1960, 1966: 389.

***hermosus* Wood** 1968b: 12. Holotype ♂; 18 km N Tlaxco (Tlaxcala), Puebla, Mexico; Wood Collection.

Figures: Bright 1972b: 1490, Wood 1968b: 12.

Distribution: North America (Nuevo Leon, Puebla in Mexico).

Hosts: *Abies religiosa*, *Pseudotsuga menziesii*.

References: (**hb**) Wood, S. L. 1982b: 437. (**ds**) Atkinson & Equihua 1988: 100; Wood, S. L. 1982b: 437. (**tx**) Wood, S. L. 1968a: 12, 1968b: 12, 1982b: 437.

silvaticus Bright 1972b: 1489. Holotype ♂; Cerro Potosi, Nuevo Leon, Mexico, 11,000 ft.; CNCI, Ottawa. Synonymy: Wood 1975a: 22.

References: (**tx**) Bright 1972b: 1489–1490; McNamara 1977: 199; Wood, S. L. 1975a: 22.

***incognitus* Eggers** 1951: 154. Holotype ♀; Mexico; Eggers Collection, in NHMW, Wien.

Distribution: North America ("Mexico").

References: (**ds**) Schedl 1972g: 38; Wood, S. L. 1982b: 448. (**tx**) Eggers 1951: 154; Schedl 1979c: 123; Wood, S. L. 1982b: 448.

***intricatus* (Ratzeburg)** 1837: 186 (*Eccoptogaster*). Syntypes, sex?; Frankreich durch Bayern bis Schweden; not given, possibly in ZIFH, Eberswalde.

Figures: Balachowsky 1949a: 178, Bevan 1987: 115, Michalski 1973a:pl. 37, Sokanovskii 1966: 386.

Distribution: Africa (Morocco/ Tunisia), Asia (Turkey), Europe (Austria/ Belgium/ Bulgaria/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Hungary/ Italy/ Luxemburg/ Netherlands/ Norway/ Poland/ Romania/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia).

Hosts: *Quercus* spp., *Betula* sp., *Carpinus* sp., *Fagus* spp., *Ostyra* sp.

Notes: (3) Schedl 1979c: 119 (cites as synonym *eccoptus* Eggers, nomen nudum).
References: (**ay**) Butovitsch 1929: 7, 34–35; Chararas & Koutroumpas 1977; Courtois et al. 1965; Doganlar 1984; Escherich 1923b: 478, 507; Feytaud 1950a; Gahan 1900; Keler 1920: 134; Lesne 1911a: 627; Negru 1968b: 803; Nunberg 1928a: 140; Nobuchi 1969a: 46; Scholz 1905: 144; Yates, M. G. 1984. (**bv**) Barr, B. A. 1969: 643; Chararas 1980b: 563; Doganlar & Schopf 1984; Grune 1979: 39; Habermann & Schopf 1987, 1988; Meixner 1937: 1214; Michalski 1959c: 174; Nuorteva 1956c: 94; Prell 1926: 69, 1930c: 642, 1931: 365; Schonherr 1970b; Yates, M. G. 1984. (**cn**) Acatay 1943a: 57; Aerts 1921; Anonymous 1935: 500, 1977r; Archer 1866; Barbey 1925: 419; Baryshman 1955; Bellevoye 1896; Browne 1968: 644; Chararas 1972; Chorbadzhievo 1929; Compte Sart & Caminero 1982; Eckstein 1900b, 1926: 573; Edelman & Malysheva 1959a: 368, 1959b; Elton 1947, 1951; Elton & Voute 1950; Escherich 1923b: 478, 507; Esterberg 1959; Feytaud 1946, 1950a; Fisher 1937: 110–128; Gabler 1955; Gehin 1857b: 42; Georgescu et al. 1957: 357, 425; Gibbs 1978b; Goidanich & Goidanich 1934; Gois 1944; Gusev 1928: 144; Gyorfi 1959; Hess 1900: 53, 1907: 278; Hess & Beck 1914: 242, 1924: 296; Hoffmann 1934; Hofinger 1922; Judeich & Nitsche 1895: 444, 481; Kamp 1951: 85; Kholodkovskii 1912: 290; Kleine 1932a: 304; Koning 1926: 312–313; Koppen 1882: 250; Kovacevic 1957: 69; Lekander, M. 1951: 22; Lindblom 1936: 26; Lohrenz 1907: 49; Maar & Voore 1935: 641–651; Macedo 1938: 3–7; Marcu 1926c: 59; Muller 1912: 184; Nosek 1951: 109; Nusslin 1913: 232; Nypels 1899: 7; Packard 1890: 860; Picard 1921: 17; Pierce, W. D. 1917: 40; Rhumbler 1922: 274, 1927: 285; Roepke 1931: 162, 1947: 114–116; Saalas 1949: 340, 347; Sakharov 1926; Schimitschek 1944: 153, 1951a: 101, 1955a: 135, 1955c: 73, 1961a: 154; Schwerdtfeger 1944a: 174, 1957a: 181; Sedlaczek 1919: 78–79; Simmel 1928: 154–171; Sinreich 1961: 166; Szontagh 1985; Tragardh 1917: 28; Tsap 1965: 103–107, 1966; Vorontzov 1968; Wachtl 1901: 380; Weber, H. 1926: 573; Wichmann 1927b: 356, 361; Wolff & Krausse 1922: 69; Yates, M. G. 1981; Zakharov & Levkovich 1951: 294; Zviereozomb & Zubousky 1918. (**ec**) Adeli 1964; Apel 1983; Arambourg 1964: 115; Balazy et al. 1977; Beaver 1967a: 145; Boucek 1957b: 80; Brammanis 1940; Capek 1986, 1987; Chararas 1957d; Doganlar, Schopf, & Bonbosch 1984; Donisthorpe 1933a; Eisenhauer 1989; Elliot & Morley 1907; Espanol 1967a; Fry 1989: 18; Fuchs 1937, 1938; Gaulle 1906: 237; Gauss 1954a: 423; Gibbs 1978b; Gillanders 1906; Graham 1969: 877; Guseynov 1981; Gyorfi 1941b, 1943: 84, 1952b; Heqvist 1963; Hirschmann & Wisniewski 1982, 1983; Jamnicky 1957b: 20, 1957c; Johnson, M. A. & Croteau 1987; Keilczewski 1976; Keilczewski, Moser, & Wisniewski 1983; Keilczewski & Wisniewski 1978, 1983; Kleine 1908c: 177, 1909a: 42; Kolubajiv 1954: 22; Kostenko 1929; Lloyd 1944: 180; Majewski & Wisniewski 1978a: 10; Mankovska 1987; Michalski & Ratajczak 1989; Nosek 1951: 109, 1959a: 118, 1959b: 85; Nunberg 1930: 204; Nuorteva 1957b: 68; Nusslin 1927: 285; Nypels 1899: 7; Otten 1940: 197; Perris 1856a: 244; Pettersen 1976b; Pfeffer 1923a: 329, 1928b: 2, 1943b: 179; Poinar 1975: 167; Prell 1926: 69; Ratzeburg 1869: 176; Rondani 1873: 162; Ruhm 1955c: 176, 1956b: 3; Rummukainen 1954: 27; Saalas 1930: 118, 1949: 340, 347; Schimitschek 1941a: 313, 1955a: 135; Schwerdtfeger 1944a: 174, 1957a: 181; Sedlaczek 1935a: 162; Sitowski 1930: 2; Stefanov 1949a: 97, 106; Thompson, W. R. 1943: 105; Tudor 1969: 34; Vietinghoft 1924: 336; Wahl 1926; Wichmann 1958: 233; Yates, M. G. 1981, 1984. (**hb**) Acatay 1943a: 57; Adeli 1964, 1972: 14; Aerts 1921; Altum 1881c: 248; Apel 1983; Audouin 1837; Balachowsky & Mesnil 1935; Barbey 1901: 16, 38, 1913, 1925: 419, 1942; Bargmann 1906; Beffa 1949, 1961; Boas 1923: 343; Bonnemaison 1953; Brandt 1948, 1960: 136; Browne 1968: 644; Budge 1949; Bukowsky 1930; C. 1928; Cecconi 1924; Chapman 1869c: 126–131; Chararas 1972; Chittenden 1890; Chorbadzhievo 1929; Dallimore & Munro 1922; Decaux 1890e, 1890f; Doganlar & Schopf 1984; Dombrowsky 1887, 1892; Eckstein 1889, 1897, 1898a: 182–188, 1926: 573; Edelman & Malysheva 1959b; Eichhoff 1881a: 41, 155, 1882c: 705; Escherich 1923b: 478, 507; Everts 1903: 741; Feytaud 1946, 1950a; Fisher 1936a; Furst 1888: 626; Gabler 1955; Gahan 1900; Gibbs 1978b; Gillanders 1906, 1908; Gois 1944; Gyorfi 1957; Habermann & Schopf 1987; Henschel 1876a: 207, 242, 1895a: 155; Hess 1900: 53, 1907: 278; Hess & Beck 1914: 242, 1927: 296; Holmgren 1867: 139; Jacobi 1906: 145; Joly 1950; Judeich & Nitsche 1895: 444, 481; Kamp 1951a; Karpinski & Strawinski 1948: 153; Kholodkovskii 1912: 290; Kirby, S. G. & Fairhurst 1982; Kleine 1932a: 304; Kleinert 1980: 68; Knotek 1894a: 553, 1897: 142, 1898b: 320; Koning 1926: 312; Kostin 1960: 130; Lengerken 1939: 50, 1954: 69; Lindemann 1881b: 171–173; Lohrenz 1907: 49; Lozovoi 1960: 15; Lunardoni & Leonardi 1889: 453; Madon 1930: 99; Masutti 1964; Michalski 1959c: 174; Munro 1926: 46; Nordlinger 1856: 42; Nosek 1959a: 118, 1959b: 85; Nuorteva 1956c: 94; Nusslin 1913: 232, 1927: 285; Packard 1890: 860; Palm 1959: 346; Pena 1928: 155; Perris 1856a: 244; Pfeffer 1989a: 51; Postner 1974: 386; Prell 1926: 62–76, 1930c: 642, 1931: 365; Ratzeburg 1837: 186, 1839: 228; Rhumbler 1922: 274, 1927: 285; Rimski-Korsakov et al. 1949: 272; Roepke 1947: 114; Rupertsberger 1879: 231, 1880: 228; Saalas 1913a: 69, 75, 1949: 340, 347; Samal 1928: 140; Schedl 1981b: 41; Schimitschek 1944: 153, 1955a: 135; Schwap-

pach et al. 1929: 185; Schwerdtfeger 1944a: 174, 1957a: 181, 1981: 188; Sedlaczek 1935a: 162; Seiff 1927: 34; Simmel 1928: 154–155; Smith, J. B. 1886: 127; Spessivtsev 1913a: 43; Stark 1926a: 331, 1927a: 18, 1952: 131; Stefanov 1949a: 97, 106; Taschenberg 1880: 240, 244; Tragardh 1914: 85, 1939b: 155, 165; Tredl 1915a: 153; Tschorbadjiev 1929: 155; Vitomskii 1928a: 182; Wachtl 1901: 380; Weber, H. 1926: 573; Wichmann 1927b: 356, 361; Wolff & Krausse 1922: 69; Yates, M. G. 1984. (**ds**) Acloque 1896; Adeli 1964, 1972; Ammann & Knabl 1923; Andersch 1851; Anderson, R. F. 1960: 235; Anonymous 1977r; Audouin 1837; Audras & Schaefer 1957; Baer 1926: 176–178; Balachowsky 1935: 22, 1944b; Barthe 1896; Bau 1888; Bedel 1888b: 388, 406; Beffa 1949; Bejer-Petersen & Jorum 1977: 6; Benick 1921; Bielz 1887; Blanchere & Robert 1889; Boas 1923: 343; Borchert 1951; Brakman 1966a, 1966b: 203; Brancsik 1906; Browne 1968: 644; Buck 1955: 191, 1982; Bucking 1932; Bukowsky 1930; Buresh & Lazarov 1956; Butovitsch 1929: 7, 34–35; Calwer 1884, 1893; Carpentier & Delaby 1908; Chapman 1870b; Chappell 1867: 216; Chapuis 1869: 60, 1873: 268; Chapuis & Candeze 1853; Chittenden 1890; Chorbadzhievo 1924d, 1929; Chrystal 1937; Crotch 1863; Crowson 1971: 51, 1987; Crowson & Hunter 1964: 200; Dallimore & Munro 1922: 189–193; Debatisse 1945; Duffy 1945: 175; Eder 1934; Eggers 1904; Elton 1947, 1951; Elton & Voute 1950; Endrodi 1958b, 1986: 217; Ericson & Sandin 1893; Ermisch 1953; Escherich 1923b: 478, 507, 1932b; Esterberg 1928, 1959; Everts 1922: 637, 1925; Eyquem 1891; Fedorov 1930; Fisher 1936a; Forster 1849: 440, 1891; Fricken 1889: 283; Fuss 1874; Gabler 1949b; Gaubil 1849: 127; Gemminger & Harold 1872: 2695; Gillerfors 1966; Gozis 1875: 80; Grill 1895: 312; Grune 1979: 39; Gyorfi 1941b; Hagedorn 1910d: 84; Hansen, V. 1939, 1956, 1964: 456; Heinemann 1908a; Hellen 1947; Hennig 1954: 265; Henschel 1895a: 155; Heyden 1876: 295; Heyden, Reitter, & Weise 1883: 181, 1891: 670, 1906: 708; Hicken 1963; Hoffmann 1934; Holmgren 1867: 139; Horion 1951; Jansson 1954: 259; Jazentkovsky 1912: 286; Judeich & Nitsche 1895: 444, 481; Kaltenbach 1874: 624, 646; Karpinski 1925: 215, 1926: 81, 1931: 21; Karpinski & Strawinski 1948: 153; Keler 1922b: 210, 1925b: 270; Kempers 1902: 67; Kersten 1933: 72; Klefbeck & Sjoberg 1960; Kleine 1912a: 262, 267, 1913a: 34, 1913b: 151, 1914a: 19, 1932a: 304, 1934a: 168; Knotek 1892a: 35, 1894a: 553, 1898b: 320; Koltze 1901: 152; Kolubajiv 1934: 65; Koppen 1882: 250; Koschitsky 1900: 83; Kostenko 1929; Kovacevic 1957: 69; Kraatz 1869: 59; Kurir 1947c: 21; Lacordaire 1866: 387; Langhoffer 1915c: 156; Leclercq 1971; Lentz 1857: 140; Lindeman 1964: 112; Lindemann 1884b: 264; Lokaj 1868: 63; Lomnicki 1886a: 241, 1913b: 147; Lucht 1987: 275; Luigioni 1929: 990; Lunardoni & Leonardi 1889: 453; Lundberg 1981: 151; Lundblad 1950b: 72; Marcu 1926c: 59; Matthews & Fowler 1883: 42; Meinert 1887: 70; Michalski 1973a: 111; Minkevic 1867: 299–304; Munro 1928: 288; Negru 1966b: 398, 1968a: 454, 1968c: 91; Nunberg 1928b: 87, 1954: 92; Orest 1926c: 59; Palm 1959: 28, 212; Perris 1876a: 254, 1877a: 414; Pfeffer 1928b: 2, 1931b: 73, 1989a: 51; Pierce, W. D. 1917: 40; Pittioni 1943: 174; Pogge 1927: 564; Portevin 1935: 310; Postner 1974: 386; Prossen 1913: 82; Ragusa 1924: 114; Rapp 1934: 717; Ratzeburg 1837: 186, 1839: 228; Redtenbacher 1858: 838, 1874: 373; Reitter 1869b: 153, 1894a: 42, 1913: 21, 1916: 272; Rimski-Korsakov et al. 1949: 272; Rohrig 1955: 37; Roubal 1935b: 72, 1941: 255; Saalas 1913a: 69, 75, 1930: 118, 1931: 67; Sahlberg 1900: 106; Sainte-Claire & Mequignon 1938: 443; Schaufuss 1915: 1205; Schaum 1859: 95, 1862: 100; Schedl 1952f: 85, 1961b: 185, 1964a: 94, 96, 1967c: 68, 1980a: 1, 1981b: 41; Schevyrew 1890c: 470; Schilsky 1909: 187; Schimitschek 1937: 43, 1951a: 101; Schiodte 1873: 105; Schneider & Leder 1977: 54; Schwerdtfeger 1981: 188; Seidlitz 1891a: 557, 1891b: 602; Sharp & Fowler 1893: 34; Sick 1939: 110; Smith, J. B. 1886: 127; Stark 1926a: 331, 1926f: 82–84, 101, 1926j: 124, 1927b: 86, 1941: 301, 1952: 131; Stein 1868: 114; Stein & Weise 1877: 164; Stierlin 1898: 436; Sturm 1843: 229; Thomson 1865: 375, 1868: 224; Tragardh 1914: 85, 1939b: 155, 165; Tredl 1907: 6; Tschorbadjiev 1929: 155; Ulanowski 1884: 6; Welch, R. C. 1980: 271; Westhoff 1882: 238; Wichmann 1924: 15, 1927a: 50–51; Winter, T. G. 1983: 49. (**tx**) Acatay 1943: 56–57; Acloque 1896; Altman 1844; Apel 1983; Bach 1854; Balachowsky 1935: 22, 1944b: 21–22, 1949a: 77; Barbey 1901: 16, 38; Barbier & Menier 1975: 118; Bedel 1888b: 388, 406; Beffa 1949, 1961; Bertolini 1872; Boas 1923: 343; Butovitsch 1929: 7, 34–35; Carpentier & Delaby 1908; Ceballos 1945; Chapuis 1869: 60, 1873: 268; Chapuis & Candeze 1853; Chevrolat 1838; Choo, Woo, & Nobuchi 1988b; Chorbadzhievo 1924d; Cieslar 1894; Claus 1958; Csiki 1906; Desbrochers 1891; Dombrowsky 1887, 1892; Duffy 1953; Eggers 1923b: 133–134, 1929e: 42, 1942c: 34; Eichhoff 1864b: 32, 1881a: 41, 155–157, 1883a: 105, 130; Endrodi 1957b: 420; Erichson 1836: 59; Escherich 1923b: 478, 507; Escherich & Escherich 1897; Everts 1903: 741, 1922: 637; Ferrant 1911; Formanek 1907: 10; Fricken 1889: 283; Gabler 1949b, 1955; Gillanders 1908; Grune 1979: 38–39; Gyllenhal 1813: 348–349; Hagedorn 1910a: 123; Hansen, V. 1956, 1964: 456; Henry 1892: 10; Henschel 1876a: 207, 242, 1895a: 155; Iablokoff-Khnzorian 1961: 85; Jacobi 1906: 145; Judeich & Nitsche 1895: 444, 481; Kalina 1970: 129; Karpinski & Strawinski 1948: 153; Knotek 1892a: 35, 1892b: 235, 1894b: 87; Kuhnt 1913: 1048; Lacordaire 1866: 387; Letzner

1844: 65, 1891: 372; Leunis 1886: 183; Lindemann 1881b: 171; Lovendal 1889b: 48, 1898: 62; Lucht 1987: 275; Luigioni 1929: 990; Lunardoni & Leonardi 1889: 453; Meixner 1937: 1214; Michalski 1959c: 174, 1967: 315, 1973a: 111–113, pl. 37; Negru 1966b: 398; Nobuchi 1973a: 14; Nordlinger 1848: 253, 1856: 42; Nunberg 1928a: 140, 1954: 92; Perris 1877a: 414; Pfeffer 1932b: 10, 1944: 130–131, 1955a: 89, 1989a:pl. 1; Postner 1974: 386; Quaschik 1953: 35; Ratzeburg 1837: 186, 1839: 228; Redtenbacher 1849: 792, 1849b: 27, 1858: 838, 1874: 373; Reitter 1894a: 42, 1908b: 23, 1913a: 21–22, 1916: 272; Rey 1892b: 30; Rhumbler 1922: 274, 1927: 285; Rupertsberger 1879: 231, 1880: 228; Saalas 1913a: 69, 75, 1949: 340, 347; Schedl 1934f: 1633, 1948b: 24–25, 1952f: 86, 1964a: 94, 96, 1967c: 68, 1980a: 1, 1981b: 41; Schevyrew 1893a: 118–119, 1893b: 77–80; Schimitschek 1955c: 73; Seidlitz 1891a: 557, 1891b: 602; Semenov 1902: 267; Sokanovskii 1954: 14; Spessivtsev 1913a: 43, 1922a: 458, 491, 1925a: 153, 1931: 11, 19; Stark 1941: 306, 1950: 229, 1952: 131; Stephens 1830: 362; Stierlin 1898: 436; Stresemann et al. 1989: 353; Taschenberg 1880: 240, 244; Thomson 1865: 375, 1868: 224. (**ms**) Cieslar 1894; Doganlar 1984; Eckstein 1927; Escherich 1932b; Heinemann 1908a; Knotek 1894b: 187; Macedo 1938: 4; Merino-Rodriguez 1966: 48; Ritter 1929: 553; Schwappach 1924: 56; Stark 1958: 231; Vorontzov 1968.

picicolor Stephens 1830: 362. Syntypes 1 ♂, 2 ♀; Wittersham near Rye, England; BMNH, London. Synonymy: Michalski 1973a: 111.

Notes: (3) Although this is the senior available name, *intricatus* is retained because of its long-standing, widely accepted use.

References: (**ds**) Stephens 1830: 362. (**tx**) Butovitsch 1929: 7; Michalski 1973a: 111; Schedl 1948b: 24; Stephens 1829b: 12, 1830: 362.

penicillatus Reitter 1913a: 21. Holotype ♂; Beih Marocco; NHMB, Budapest. Synonymy: Balachowsky 1949a: 77.

References: (**ay**) Butovitsch 1929: 9, 37. (**ds**) Butovitsch 1929: 9, 37; Sokanovskii 1966: 388. (**tx**) Balachowsky 1949a: 77; Butovitsch 1929: 9, 37; Endrodi 1957: 420; Reitter 1913a: 21; Schedl 1934f: 1633, 1948b: 24; Sokanovskii 1966: 388.

simmeli Eggers 1923b: 133 (*Eccoptogaster*). Syntypes, sex?; Pakalehne am Schneeberg (Innerkrain); Eggers Collection, in NHMW, Wien. Synonymy: Balachowsky 1949a: 77.

Notes: (3) Schedl 1979c: 230 (citation of holotype invalid).

References: (**ay**) Butovitsch 1929: 7, 27. (**hb**) Simmel 1928: 156–171. (**ds**) Butovitsch 1929: 7, 27; Sokanovskii 1966: 388. (**tx**) Balachowsky 1949a: 77; Butovitsch 1929: 7, 27; Eggers 1923b: 133–134; Schedl 1934f: 1633, 1948b: 24, 1979c: 230; Sokanovskii 1966: 388.

lenkoranus Eggers 1942c: 34. Holotype, sex?; Lenkoran, Azerbaijan, USSR; Eggers Collection, not found. Although no cotypes were designated, Schedl 1979c: 138 reports 2 cotypes in NHMW, Wien. Synonymy: Balachowsky 1949a: 77.

References: (**hb**) Stark 1952: 132. (**ds**) Sokanovskii 1966: 388; Stark 1952: 132. (**tx**) Balachowsky 1949a: 77; Eggers 1942c: 34; Endrodi 1957: 420; Pfeffer 1944a: 131; Schedl 1948b: 24, 1979c: 138; Sokanovskii 1954: 14, 1966: 388; Stark 1952: 132. (**ms**) Pfeffer 1944a: 131.

tiburtinus Claus 1958: 712. Type, a piece of *Quercus* wood with engravings; Germany: Thurigen, Muhlhausen; not located. Synonymy: Schedl 1963g: 46 (genus and species uncertain, based on gallery).

References: (**tx**) Claus 1958: 712; Schedl 1963g: 46

***jacobsoni* (Spessivtsev)** 1919: 246 (Eccoptogaster). Lectotype, sex?; Vladivostock, USSR; IZL, Leningrad, designated by Michalski 1968b: 189.

Figures: Michalski 1968a: 110, 1973a:pl. 19, Nobuchi 1973a:pl. 2, Tsai & Li 1959: 75.

Distribution: Asia (Heilongjiang, Liaoning in China/ Japan/ E USSR).

Hosts: *Ulmus lacinata, U. propinqua, U. japonica, Carpinus betulus, Pyrus ussuriensis.*

Notes: (3) Kurenzov 1935a: 22 (describes form *montana,* no status in nomenclature).

References: (**ay**) Butovitsch 1929: 7, 49. (**cn**) Kurenzov 1935c: 189; Pfeffer 1979: 149. (**ec**) Krovolsheina 1974; Kurenzov 1934a: 57, 1964: 19; Pfeffer 1979: 149. (**hb**) Kurenzov 1935a: 19, 22, 1948b: 118; Stark 1952: 115; Yin, Huang, & Li 1984: 30. (**ds**) Butovitsch 1929: 7, 49; Kleine 1934a: 168; Krivolutskaya 1958: 108, 112–113, 1983; Krivolutskaya & Kupyanskaya 1970; Kurenzov 1934a: 57, 1935a: 19, 22, 1935c: 189, 1936a: 110, 1936b: 350, 1938a: 60, 1964: 19, 1965, 1967; Michalski 1973a: 68; Nobuchi 1973a: 22; Sokanovskii 1966: 381; Stark 1952: 115; Yin, Huang, & Li 1984: 30. (**tx**) Butovitsch 1929: 7, 49; Krivolutskaya 1958: 112; Kurenzov 1941a: 91–92, 1948b: 118; Michalski 1968a: 109–110, 1968b: 189, 1973a: 68–70, pl. 19; Nobuchi 1973a: 22, pl. 2; Schedl 1934f: 1633, 1941a: 42, 1948b: 39; Sokanovskii 1966: 381–385; Spessivtsev 1919: 246–247; Stark 1952: 115–116; Tsai & Li 1959: 75; Tsai, Yin, & Huang 1962: 4, 7; Yin & Huang 1980: 48; Yin, Huang, & Li 1984: 30.

rimskii Kurenzov 1941a: 103. Lectotype ♀; Ussuriisk, Primorye, USSR; Gornotayozhnaya Stanciya AN SSR, designated by Krivolutskaya 1985: 4. Synonymy: Krivolutskaya 1985: 4.

Notes: (3) Michalski 1973a: 119 (treated as a synonym of *mali*).

References: (**ec**) Krivolutskaya 1984: 3. (**ds**) Krivolutskaya 1984: 3; Sokanovskii 1966: 389. (**tx**) Krivolutskaya 1984: 3, 1985: 4; Kurenzov

1941a: 103; Michalski 1973a: 119; Schedl 1947c: 63, 1948b: 29; Sokanovskii 1966: 389; Stark 1952: 144.

***japonicus* Chapuis** 1875: 199. Holotype ♂; Kiushiu, Japan; IRSNB, Brussels.

Figures: Krivolutskaya 1984: 5, Michalski 1973a: pl. 38, 41, Yin, Huang, & Li 1984: 39.

Distribution: Asia (Hebei, Heilongjiang, Jilin, Liaoning, Neimeng, Shanxi, Sichuan in China/ Japan/ Korea/ E USSR).

Hosts: *Ulmus* spp., *Prunus* spp., *Pyrus* spp., *Fraxinus* spp., *Malus pimila*, *Acer mono*.

Notes: (3) Stark 1935: 24 (*fraxini*, nomen nudum, synonymy by Michalski 1973a: 122).

References: (**ay**) Butovitsch 1929: 58. (**cn**) Anonymous 1980g; Clausen 1931; Kurenzov 1935c: 192; Pfeffer 1979: 149; Shiraki 1952. (**ec**) Inouye et al. 1955: 92; Pfeffer 1979: 149; Yang 1989. (hb) Inouye et al. 1955: 92; Kurenzov 1935a: 22; Lindeman 1961: 100, 1978; Stark 1952: 143; Yin, Huang, & Li 1984: 38. (**ds**) Anonymous 1980g; Blandford 1894c; Butovitsch 1929: 58; Cho 1957; Choo 1983: 39; Choo & Woo 1985: 163; Choo, Woo, & Nobuchi 1983: 172, 1988a: 133; Clausen 1931; Hagedorn 1910d: 84; Kleine 1913b: 151, 1914b: 259, 1934a: 168; Ko 1969: 283; Krivolutskaya 1983; Krivolutskaya & Kupyanskaya 1970; Ku 1964; Kurenzov 1935a: 22, 1935c: 192, 1936a: 110, 1936b: 350; Michalski 1973a: 113; Murayama 1929b: 2, 1930b: 6, 1936b: 116, 1937b: 375, 1942a: 53, 1950b: 1290, 1954b: 155; Nakane et al. 1963: 381; Nobuchi 1973a: 22; Shiraki 1952; Sokanovskii 1960, 1966: 390; Stark 1935: 24, 1952: 143; Yanovskii & Tegshzhargal 1985: 404; Yin, Huang, & Li 1984: 38. (**tx**) Blandford 1894d: 80; Butovitsch 1929: 58; Chapuis 1875: 199; Choo 1983: 39; Eggers 1942c: 33; Hagedorn 1910a: 123; Michalski 1968b: 196–197, 1973a: 113–116, pl. 38; Murayama 1930b: 6, 10–11, 1937b: 375, 1950b: 1290, 1954b: 155; Nakane et al. 1963: 381, pl. 191; Niisima 1905: 67, 72–73, 1909: 121; Nobuchi 1973a: 22, pl. 2; Schedl 1934f: 1632, 1948b: 19; Sokanovskii 1954: 15, 1958: 37, 1960: 676, 1966: 386, 390; Stark 1935: 24, 1950: 229, 1952: 143; Tsai, Yin, & Huang 1962: 2–5, 12, 14; Yin & Huang 1980: 48. (**ms**) Mastumura 1931.

confusus Eggers 1922c: 13 (*Eccoptogaster*). Lectotype ♀; Wladiwostok, USSR; USNM, Washington, designated by Anderson & Anderson 1971: 10. Synonymy: Krivolutskaya 1985: 6.

References: (**ay**) Butovitsch 1929: 6. (**cn**) Kurenzov 1935c: 189. (**ec**) Krivolutskaya 1984: 4; Kurenzov 1934a: 57. (**hb**) Kurenzov 1935a: 19, 1948b: 117; Stark 1952: 141; Yin, Huang, & Li 1984: 41. (**ds**) Butovitsch 1929: 6; Kleine 1934a: 168; Krivolutskaya 1983, 1984: 4; Kurenzov 1935a: 19, 1935c: 189, 1936a: 110, 1936b: 350, 1938a: 58; Michalski 1973a: 102; Stark 1952: 141; Yin, Huang, & Li 1984: 41. (**tx**) Anderson, W. H. & Anderson 1971: 10; Butovitsch 1929: 6; Eggers 1922c: 13–14, 1941c: 123–124; Krivolutskaya 1985: 4–6; Kurenzov 1941a: 75, 101–103, 225–226, 1948b: 117; Michalski 1968b: 196, 1973a: 102–104, pl. 33; Schedl 1934f: 1632, 1948b: 21, 1979c: 62; Sokanovskii 1954: 15, 1966: 390; Stark 1952: 141–143; Tsai, Yin, & Huang 1962: 3; Yin, Huang, & Li 1984: 41.

mandli Eggers 1922c: 13 (*Eccoptogaster*). Holotype ♂; Werchne-Udinsk in Transbaikalien [= Ulhan-Ude, Zabaikalye, USSR]; USNM, Washington. Synonymy: Krivolutskaya 1985: 6.

References: (**ay**) Butovitsch 1929: 8, 47. (**hb**) Kurenzov 1935a: 19, 24; Stark 1952: 125. (**ds**) Butovitsch 1929: 8, 47; Kurenzov 1935a: 19, 24, 1936a: 109, 1938a: 58; Mandl 1931: 25; Michalski 1973a: 122; Sokanovskii 1966: 390; Stark 1936e: 142, 1952: 125. (**tx**) Anderson, W. H. & Anderson 1971: 19; Butovitsch 1929: 8, 47; Eggers 1922c: 13–14, 1942c: 28; Krivolutskaya 1985: 6; Kurenzov 1941a: 89–90; Michalski 1968b: 197, 1973a: 122–123, pl. 41; Schedl 1934f: 1633, 1948b: 20; Sokanovskii 1958: 37, 1960: 676, 1966: 390; Stark 1936: 142, 154, 1950: 229, 1952: 125–126.

ussuriensis Kurenzov 1941a: 102. Lectotype ♀; initio fluvii Suputinka, South-Ussuriiski Territory (Michalski 1973a: 102); IZL, Leningrad, designated by Michalski 1968b: 196. Synonymy: Michalski 1968b: 196, 1973a: 102.

References: (**hb**) Stark 1952: 144. (**ds**) Nobuchi 1973a: 23; Stark 1952: 144. (**tx**) Kurenzov 1941a: 102–103, 226; Michalski 1968a: 133, 1968b: 196, 1973a: 102; Nobuchi 1973a: 24, pl. 2; Schedl 1948b: 23; Stark 1952: 144.

subconfusus Eggers 1941c: 123. Syntypes 1 ♂, 2 ♀; Suchan (Primorye, USSR), Cicikar (northeast China); Eggers Collection, not mentioned by Anderson & Anderson 1971 or Schedl 1979c. Synonymy: Michalski 1973a: 102.

References: (**tx**) Eggers 1941c: 123; Michalski 1973a: 103; Schedl 1948b: 24; Sokanovskii 1954: 15.

starki Kurenzov 1941a: 101–102, 225. Lectotype ♀; initio fluvii Suputinka, South-Ussuriiskii Territory, USSR; IZL, Leningrad, designated by Michalski 1973a: 102. Synonymy: Michalski 1973a: 102.

References: (**hb**) Stark 1952: 142. (**ds**) Krivolutskaya & Kupyanskaya 1970; Stark 1952: 142. (**tx**) Kurenzov 1941a: 101–102, 225; Michalski 1968a: 113, 1968b: 196, 1973a: 102; Schedl 1948b: 22; Stark 1952: 142; Sokanovskii 1954: 15.

***jaroschewskii* Schevyrew** 1893: 90. Neotype ♂; Tbilisi, Georgia, USSR; IZL, Leningrad, designated by Michalski 1968b: 187, automatic.

Figures: Michalski 1973a:pl. 5, Sinadsky 1961: 1022.
Distribution: Europe (W USSR).
Hosts: *Eleagnus* sp., *Ulmus carpinifolia*.
References: (**ay**) Butovitsch 1929: 7, 24. (**hb**) Kostin 1960: 130; Sinadsky 1961. (**ds**) Arnoldi et al. 1955: 653; Butovitsch 1929: 7, 24; Hagedorn 1910d: 84; Heyden, Reitter, & Weise 1906: 708; Kadyrov 1988: 43, 1989; Kleine 1913b: 151; Kulinich 1965: 140; Lozovoi 1960: 9; Michalski 1973a: 34; Mitiaev 1960: 124; Schaufuss 1915: 1206; Semenov 1904: 38; Sokanovskii 1960, 1966: 383; Yagdyev 1984. (**tx**) Butovitsch 1929: 7, 24; Eggers 1914a: 38, 1914b: 185–186; Hagedorn 1910a: 123; Michalski 1968b: 186–188, 1973a: 34–36, pl. 5; Pfeffer 1965: 61; Reitter 1913a: 18–19; Schedl 1934f: 1632, 1948b: 57; Schevyrew 1890: 98–99, 1893: 90–91, 125, 1904: 38; Semenov 1904: 37–38; Sinadsky 1961: 1022; Sokanovskii 1954: 15, 1956: 44, 1958: 37, 1960: 674, 1961: 483–485; 1966: 383; Stark 1952: 86.

unispinosus Schevyrew 1890c: 98. Neotype ♂; Tbilisi, Georgia, USSR; IZL, Leningrad, preoccupied by LeConte 1876. Synonymy: Schedl 1948b: 57.
References: (**cn**) Kholodkovskii 1912: 288. (**hb**) Kholodkovskii 1912: 288. (**ds**) Butovitsch 1929: 10, 49; Kleine 1913b: 152; Schevyrew 1890c: 470; Semenov 1904: 37; Sokanovskii 1966: 383. (**tx**) Reitter 1913a: 23; Schedl 1934f: 1632, 1948b: 57; Schevyrew 1890c: 470; Semenov 1904: 37; Sokanovskii 1966: 383.

granulifer Reitter 1913a: 18–19. Syntypes, sex?; Transkaukasus: Elisabethpol [= Kirowabad], USSR; NHMB, Budapest. Synonymy: Arnoldi et al. 1955: 653.
References: (**ay**) Butovitsch 1929: 7, 24. (**hb**) Stark 1952: 146. (**ds**) Arnoldi et al. 1955: 653; Butovitsch 1929: 7, 24; Kleine 1934a: 168; Sokanovskii 1966: 383; Stark 1952: 146. (**tx**) Arnoldi et al. 1955: 653; Butovitsch 1929: 7, 24; Eggers 1914: 38; Reitter 1913a: 18–19; Schedl 1934f: 1632, 1948b: 57; Sokanovskii 1954: 13, 1960: 764, 1966: 383; Stark 1952: 146.

tauricus Eggers 1914: 185 (*Eccoptogaster*). Lectotype ♀; Krim (Sebastopol); USNM, Washington, designated by Anderson & Anderson 1971: 34. Synonymy: Michalski 1973: 34.
References: (**ay**) Butovitsch 1929: 10, 31, 33. (**hb**) Stark 1952: 109. (**ds**) Butovitsch 1929: 10, 31, 33; Kleine 1913a: 89, 1934a: 169; Pjatnitskii 1930a: 163; Schaufuss 1915: 1206; Stark 1927b: 86, 1952: 109. (**tx**) Anderson, W. H. & Anderson 1971: 34; Balachowsky 1949a: 81; Butovitsch 1929: 10, 31, 33; Eggers 1914: 185–186, 1922d: 114; Michalski 1973a: 34; Schedl 1934f: 1633, 1948b: 30; Sokanovskii 1954: 14; Stark 1952: 109.

kostini Sokanovskii 1954: 15. Holotype ♂; Russia: Ili River in Kazakhstan; Sokanovskii Collection. Synonymy: Michalski 1973a: 34.
Notes: (3) Sokanovskii 1958: 37 (described var. *rufostriatus*, no status in nomenclature).
References: (**tx**) Michalski 1968a: 107, 1973a: 34; Sokanovskii 1954: 15, 1958: 37.

***kashmirensis* Schedl** 1958g: 168. Lectotype ♂; Kashmir, Pahlgam, 7000 ft., Lidar Valley; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 131.
Distribution: Asia (Kashmir in India).
Hosts: *Ulmus wallichiana*.
Notes: (3) Syntypes supposedly were deposited in the FRI, Dehra Dun, but all specimens sent to Schedl are accounted for and none were returned to the FRI.
References: (**cn**) Mathur & Singh 1961: 64. (**ds**) Beeson 1961: 296; Mathur & Singh 1961: 64. (**tx**) Schedl 1958g: 168, 1979c: 131.

***kirschi* Skalitzky** 1876: 110. Syntypes, sex?; Prague, Czechoslovakia; not located.
Figures: Balachowsky 1949a: 58 (adult), Michalski 1973a:pl. 6.
Distribution: Asia (Iraq/ Turkey), Europe (Austria/ Bulgaria/ Czechoslovakia/ France/ Germany/ Italy/ Poland/ Sicily/ Spain/ Yugoslavia/ W USSR).
Hosts: *Ulmus* spp., *Prunus* spp., *Fraxinus excelsior, Populus alba*.
Notes: (3) Sokanovskii 1954: 14 (describes var. *ruguloides*).
References: (**ay**) Butovitsch 1929: 7, 28–29; Escherich 1923b: 477, 496. (**bv**) Andrianova & Makhmadzieev 1972b; Grune 1979: 33; Makhmadzieev 197b; Maksimovic 1979a: 285; Michalski 1959c: 167. (**cn**) Andrianova & Makhmadzieev 1972a, 1972b; Baeta Neves 1952c: 4–8; Brasier 1983: 100; Chararas 1972; Chorbadzhievo 1929; Escherich 1923b: 477, 496; Goidanich & Goidanich 1934; Halperin 1986; Pajares & Arevalo 1987; Kailidis 1969a; Kholodkovskii 1912: 291; Lokaj 1906: 21; Lozovoi 1948c: 364, 1960: 13; Packard 1890: 860; Pfeffer 1979: 148; Rhumbler 1927: 285; Schwerdtfeger 1944a: 172, 1957a: 181; Stefan 1961; Tubeuf 1936: 506; Vajda 1952: 114; Wachtl 1901: 381. (**ec**) Andrianova & Makhmadzieev 1972b, 1980; Brasier 1983: 100; Cooreman 1963: 46; Escherich 1935; Fry 1989: 18; Halperin 1986; Halperin & Holzschuh 1984: 23; Kailidis 1969a; Kleine 1908c: 177; Kopyl 1983; Kostenko 1929; Lozovoi 1948c: 364; Maksimovic 1979a: 285; Nosek 1959a: 118, 1959b: 87; Novak 1952: 411; Pfeffer 1931b: 73, 1943b: 180, 1979: 148; Schwerdtfeger 1944a: 172, 1957a: 181; Sedlaczek 1935a: 162; Semedo 1961: 119; Webber & Gibbs 1989. (**hb**) Andrianova & Makhmadzieev 1972a, 1972b; Chittenden 1890; Chorbadzhievo 1929; Dombrowsky 1887, 1892; Eggers 1906; Eichhoff 1881a: 41, 159; Escherich 1923b: 477, 496; Gyorfi 1957; Halperin & Holzschuh 1984:

23; Henschel 1895a: 156; Karpinski & Strawinski 1948: 153; Kholodkovskii 1912: 291; Kostin 1960: 130; Lengerken 1939: 49, 1954: 65; Lindeman 1964: 78–82, 1978; Makhmadzieev & Shukronaev 1983; Makhnovskii 1966: 92–93; Maksimovic 1979a: 285; Marcu 1941: 401; Maslov 1963c: 847, 1964: 80–100; Michalski 1959c: 167; Nosek 1959a: 118, 1959b: 87; Packard 1890: 860; Postner 1974: 384; Rhumbler 1927: 285; Rudnev & Stepanova 1960: 773–777, 1961; Schedl 1981b: 44; Schwerdtfeger 1944a: 172, 1957a: 181, 1981: 187; Sedlaczek 1935a: 162; Semedo 1961: 119; Shatilov 1985; Smith, J. B. 1886: 127; Spessivtsev 1913a: 32; Stark 1926a: 331, 1952: 99; Tschorbadjiev 1929: 159; Wachtl 1901: 381. (**ds**) Baeta Neves 1952a; Balachowsky 1943a, 1944b; Buresh & Lazarov 1956; Butovitsch 1929: 7, 28–29; Calwer 1893; Chittenden 1890; Chorbadzhievo 1929; Covassi 1983; Eggers 1906; Endrodi 1958b; Escherich 1923b: 477, 496, 1932b; Grune 1979: 33; Hagedorn 1910d: 85; Halperin 1986; Halperin & Holzschuh 1984: 23; Henschel 1895a: 156; Heyden, Reitter, & Weise 1883: 181, 1891: 670, 1906: 708; Horion 1951; Jacentkovsky 1935: 22; Jazentkovsky 1912: 286; Kadyrov 1988: 42–43, 1989; Kalandra & Pfeffer 1935; Karaman 1967; Karpinski 1948a: 173; Karpinski & Strawinski 1948: 153; Kleine 1912a: 305, 1913a: 34, 89, 1913b: 151, 1934a: 168; Kostenko 1929; Langhoffer 1915c: 156; Lomnicki 1913b: 147; Lucht 1987: 275; Michalski 1973a: 36; Negru 1957: 129, 1968a: 453; Negru & Rosca 1967: 141; Novak, P. 1952: 411, 1964; Nunberg 1928b: 87, 1954: 89; Pascovici 1962; Pfeffer 1930b: 119, 1931b: 73, 1936: 90, 1989a: 46; Pittioni 1943: 174; Postner 1974: 384; Reitter 1894a: 43, 1916: 272; Roubal 1935b: 72, 1941: 255; Sainte-Claire & Mequignon 1938: 443; Schaufuss 1915: 1206; Schedl 1971d: 426, 1980a: 2, 1981b: 44; Schevyrew 1890c: 470; Schilsky 1909: 187; Schnaider 1936: 366; Schwerdtfeger 1981: 187; Seidlitz 1891a: 557; Semedo 1961: 119; Shiperovich 1926: 472–475; Smith, J. B. 1886: 127; Sokanovskii 1966: 387; Stark 1926a: 331, 1926g: 153, 1927b: 86, 1952: 99; Stein & Weise 1877: 164; Stierlin 1898: 436; Tredl 1907: 6; Tschorbadjiev 1929: 159; Wichmann 1927a: 51–52; Zvierezomb & Zubosky 1918. (**tx**) Balachowsky 1943a, 1944b: 8–9, 1949a: 61–63; Butovitsch 1929: 7, 28–29; Desbrochers 1891; Dombrowsky 1887, 1892; Eggers 1912a: 148, 1914: 184–185, 1922d: 116–117, 1942c: 34; Eichhoff 1881a: 41, 159, 1883a: 105, 130; Endrodi 1957a: 307, 1957b: 420; Escherich 1923b: 477, 496; Formanek 1907: 10; Grune 1979: 32–33; Hagedorn 1910a: 123; Henschel 1895a: 156; Jacentkovsky 1935: 22; Karpinski & Strawinski 1948: 153; Kuhnt 1913: 1049; Lucht 1987: 275; Michalski 1959c: 160–173, 1962a: 54, 1962b: 199, 1967: 310, 1973a: 36–39, pl. 6; Nunberg 1954: 89; Pfeffer 1932b: 11, 1955a: 76–77, 1965: 61, 1989a:pl. 5; Postner 1974: 384; Quaschik 1953: 35; Reitter 1894a: 43, 1913a: 26, 1916: 272; Rhumbler 1927: 285; Schedl 1934f: 1632, 1948b: 51, 1980a: 2, 1981b: 44; Schevyrew 1893a: 69–74, 1893b: 114–116; Schmidt, G. 1980: 26; Seidlitz 1891a: 557, 1891b: 603; Semedo 1961: 119; Skalitzky 1876: 110; Sokanovskii 1954: 14, 1966: 384, 387–388; Spessivtsev 1913a: 32–33, 1931: 9–10; Stark 1926a: 331, 1952: 99–100, 107–108; Stierlin 1898: 436; Tsai & Li 1959: 75. (**ms**) Escherich 1932b; Schimitschek 1930b: 407.

fasciatus Reitter 1890c: 395. Holotype, sex?; Arexthal bei Ordubad [= Ordubad (Araks) Nakhichevan, USSR]; NHMB, Budapest. Synonymy: Schedl 1948b: 51.

Notes: (3) Michalski 1973a: 36 (treated as a variety of *kirschi*, not as a geographical race).

References: (**ay**) Butovitsch 1929: 22–30. (**cn**) Gentry, J. W. 1965: 90; Greckin 1956: 1486; Plotnikov 1914; Yagdyev 1979. (**hb**) Greckin 1956: 1486; Janjua 1950; Kostin 1960: 130; Stark 1952: 107. (**ds**) Butovitsch 1929: 22–30; Gentry, J. W. 1965: 90; Hagedorn 1910d: 84; Heyden, Reitter, & Weise 1891: 670, 1906: 708; Kadyrov 1988: 43, 1989; Kleine 1934a: 168; Kobakhidze 1957: 178; Schaufuss 1915: 1206; Sokanovskii 1966: 387; Stark 1952: 107. (**tx**) Butovitsch 1929: 22–30; Desbrochers 1891; Eggers 1912a: 48, 1914: 185; Hagedorn 1910a: 123; Iablokoff-Khnzorian 1961: 70; Michalski 1973a: 36; Reitter 1890c: 395, 1913a: 25; Schedl 1934f: 1632, 1948b: 51; Sokanovskii 1954: 14, 1966: 387; Stark 1952: 107; Wichmann 1915b: 215.

demaisoni Eggers 1912a: 47 (*Eccoptogaster*). Syntypes ♂; Sicilia, Algeria, Hispania; Eggers (USNM, Washington or NHMW, Wien?), Demaison Collection and Leonard Collection. Synonymy: Schedl 1948b: 51, Balachowsky 1949a: 61.

References: (**ay**) Butovitsch 1929: 7, 31, 33. (**ec**) Escherich 1935. (**ds**) Butovitsch 1929: 7, 31, 33; Kleine 1913b: 151, 1914a: 16; Luigioni 1929: 990; Normand 1949: 104; Pfeffer 1947d: 126; Ragusa 1922: 128, 1924: 114; Schaufuss 1915: 1206; Semedo 1961: 119; Sokanovskii 1966: 387. (**tx**) Butovitsch 1929: 7, 31, 33; Balachowsky 1949a: 61; Eggers 1912a: 47, 1914: 184–185; Endrodi 1957: 420; Luigioni 1929: 990; Kalandra & Pfeffer 1935; Reitter 1913a: 26; Schedl 1934f: 1633, 1948b: 51, 1979c: 77; Sokanovskii 1966: 387.

***koenigi* Schevyrew** 1890: 99. Syntypes, sex?; Kopet-Dagh, Turkmenia, USSR; not located.

Figures: Balachowsky 1949a: 80 (adult), Michalski 1973a:pl. 39.

Distribution: Africa (Algeria/ Morocco), Europe (Austria/ Bulgaria/ France/ Hungary/ Italy/ Romania/ Sicily/ W USSR/ Yugoslavia).

Hosts: Acer spp.

Notes: (3) Originally named as a variety of *dauricus*.
References: (**ay**) Butovitsch 1929: 7–8, 35–36. (**bv**) Grune 1979: 39. (**cn**) Zakharov & Levkovich 1951: 299. (**ec**) Otten 1940: 197; Tudor 1969: 34. (**hb**) Budkov 1897; Dejoz 1960: 510; Pfeffer 1989a: 49; Postner 1974: 387; Schedl 1981b: 42; Schwerdtfeger 1981: 188; Stark 1952: 129. (**ds**) Budkov 1897; Butovitsch 1929: 7–8, 35–36; Dejoz 1960: 510; Grune 1979: 39; Hagedorn 1910d: 85; Heyden 1898: 76; Horion 1935, 1951; Kadyrov 1989; Kleine 1913b: 151, 1914b: 246, 1934a: 168; Knotek 1892: 235–236; Lozovoi 1960: 14; Lucht 1987: 275; Luigioni 1929: 990; Michalski 1973a: 116; Pfeffer 1936: 90, 1989a: 49; Pjatnitskii 1930a: 96, 163, 1980a: 2; Postner 1974: 387; Ragusa 1924: 114; Reitter 1894a: 42; Rudnev 1929: 517–519; Schaefer 1959: 235; Schedl 1964j: 96, 1980a: 2, 1981b: 42; Sokanovskii 1966: 389; Stark 1952: 129; Yanovskii & Tegshzhargal 1985: 415. (**tx**) Balachowsky 1948: 35, 1949a: 82; Butovitsch 1929: 7–8, 35–36; Eggers 1908e: 193, 1910e: 35, 1913a: 285–286, 1914: 298, 1922d: 116–118, 1927d: 122–123; Grune 1979: 38–39; Hagedorn 1910a: 123; Lucht 1987: 275; Luigioni 1929: 990; Michalski 1968a: 111, 122, 1968b: 191, 1969c: 659, 1973a: 116–117, pl. 39; Pfeffer 1955a: 82; Postner 1974: 387; Reitter 1894a: 42, 1913a: 21–24; Schedl 1934f: 1633, 1948b: 35, 1962q: 486, 1964a: 96, 1980a: 2, 1981b: 42; Schevyrew 1890: 99; Semenov 1902: 266–267, 1903: 80; Sokanovskii 1929: 212, 1930: 803, 1954: 14, 1966: 386, 389; Spessivtsev 1931: 16–17; Stark 1941: 299–301, 1952: 129–130.

aceris Knotek 1892b: 235. Syntypes ♂ ♀; Bosnia, Herzegovina; Austria inferior; Sarajevo Museum. Synonymy: Eggers 1927d: 122.
References: (**ay**) Escherich 1923b: 476, 516. (**cn**) Chorbadzhievo 1929; Escherich 1923b: 478, 516; Pierce, W. D. 1917: 148; Schimitschek 1955a: 139; Schwerdtfeger 1944a: 175, 1957a: 182; Wachtl 1901: 381. (**ec**) Chararas 1957d; Kleine 1908c: 177, 1944: 78; Meyer 1934: 612; Schimitschek 1955a: 139; Schwerdtfeger 1944a: 175, 1957a: 182; Thompson, W. R. 1943: 105. (**hb**) Chorbadzhievo 1929; Escherich 1923b: 478, 516; Fuchs 1904a; Gyorfi 1957; Keller 1913: 242; Knotek 1894a: 553, 1897: 141, 1898b: 318; Lengerken 1939: 50, 1954: 69; Lepiney & Mimeur 1932: 44; Peyerimhoff 1919: 247; Rudnev 1929: 517–519; Schimitschek 1955a: 139; Schwerdtfeger 1944a: 175, 1957a: 182; Spessivtsev 1913a: 42; Wachtl 1901: 381. (**ds**) Balachowsky 1944b; Buresh & Lazarov 1956; Butovitsch 1929: 6–7; Chorbadzhievo 1924d, 1929; Escherich 1923b: 478, 516; Fuchs 1904a; Hagedorn 1910d: 83; Heyden, Reitter, & Weise 1906: 708; Kleine 1913a: 34, 1913b: 151; Knotek 1892a: 35, 1894a: 553, 1898b: 818; Kurir 1947c: 28; Lepiney & Mimeur 1932: 44; Peyerimhoff 1919: 247; Pierce, W. D. 1917: 148; Reitter 1894a: 42, 1916: 272, 349; Schilsky 1909: 187; Sokanovskii 1966: 389; Tredl 1907: 6; Tschorbadjiev 1929: 155. (**tx**) Balachowsky 1944b, 1949a: 82; Chorbadzhievo 1924d; Cieslar 1894; Csiki 1906; Eggers 1908e, 1927d: 122; Escherich 1923b: 478, 516; Hagedorn 1910a: 123; Knotek 1892a: 35, 1892b: 235, 1894b: 87; Reitter 1894a: 42, 1913a: 21, 1916: 272, 349; Schedl 1934f: 1633, 1948b: 35; Semenov 1902: 268; Sokanovskii 1966: 389; Spessivtsev 1913a: 42. (**ms**) Cieslar 1894; Knotek 1894b: 87.

siculus Eggers 1908: 193 (reprint p. 1). Holotype ♀; Siciliae insulae nontibus Maldoniensibus; Ragusa Collection, not located. Synonymy: Eggers 1922d: 117.
References: (**hb**) Cecconi 1924. (**ds**) Kleine 1913b: 152; Schaufuss 1915: 1206; Sokanovskii 1966: 389. (**tx**) Balachowsky 1949a: 32; Butovitsch 1929: 7; Eggers 1908: 193, 1911: 193, 1913a: 286, 1922d: 117–118, 1927: 122; Hagedorn 1910a: 124; Peyerimhoff 1919: 248; Schedl 1934f: 1633; Sokanovskii 1966: 389.

***koltzei* Reitter** 1894d: 128. Holotype ♂; Chingan (Amur), USSR; NHMB, Budapest.
Figures: Michalski 1973a:pl. 7.
Distribution: Asia ("Manchuria" [Heilongjiang?] in China/ Primorye in E USSR).
Hosts: *Tilia amurensis*, *T. mandshurica*.
References: (**ay**) Butovitsch 1929: 8, 47. (**hb**) Budkov 1897; Kurenzov 1948b: 125; Stark 1952: 123. (**ds**) Budkov 1897; Butovitsch 1929: 8, 47; Hagedorn 1910d: 85; Heyden 1898: 76; Kleine 1913b: 151, 1914b: 250; Krivolutskaya 1983; Kurenzov 1965; Michalski 1973a: 39; Reitter 1894a: 41; Sokanovskii 1966: 381; Stark 1952: 123. (**tx**) Butovitsch 1929: 8, 47; Eggers 1912a: 48, 1912c: 205, 1913a: 284–286; Hagedorn 1910a: 123; Kurenzov 1941a: 88–89, 105, 1948b: 125; Michalski 1969c: 660, 1973a: 39–41, pl. 7; Reitter 1894a: 4, 1894d: 128, 1913a: 19; Schedl 1934f: 1633, 1941a: 42, 1948b: 17; Sokanovskii 1954: 14, 1958: 37, 1966: 381–388; Stark 1936: 154, 1952: 123.

vexator Reitter 1913a: 23. Holotype ♀; East Siberia: Amur; NHMB, Budapest. Synonymy: Schedl 1948b: 17.
References: (**ay**) Butovitsch 1929: 10, 47. (**ec**) Kurenzov 1934a: 57. (**hb**) Kurenzov 1935a: 24. (**ds**) Butovitsch 1929: 10, 47; Kurenzov 1934a: 57, 1935a: 24. (**tx**) Butovitsch 1929: 47; Eggers 1913a: 285; Reitter 1913a: 23; Schedl 1934f: 1633, 1948b: 17.

***kozikowskii* Michalski** 1964: 663. Holotype ♂; prope Lugansk, Derkulskoe Forestry, Ukrain, USSR; IZL, Leningrad.
Figures: Michalski 1973a:pl. 7.
Distribution: Asia (Ukraine in W USSR).
Hosts: *Ulmus laevis*.
References: (**ds**) Michalski 1973a: 41; Sokanovskii 1966: 388. (**tx**) Michalski 1964: 663, 1968a: 109,

1968b: 188–189, 1973a: 41–43, pl. 8; Sokanovskii 1966: 388.

***laetus* Wood** 1975a: 25. Holotype ♂: 48 km N Rosamorada, Nayarit, Mexico; Wood Collection.
Distribution: North America (Nayarit in Mexico).
Hosts: *Inga paterno.*
References: (**hb**) Kirkendall 1984: 235; Wood, S. L. 1982b: 450. (**ds**) Wood, S. L. 1982b: 450. (**tx**) Wood, S. L. 1975a: 25, 1982b: 450.

***laevis* Chapuis** 1869: 54. Syntypes 4, sex?; Pyrenees, Bavaria, Steiermark (Austria); IRSNB, Brussels.
Figures: Balachowsky 1949: 75 (adult), Michalski 1973a:pl. 20, Pfeffer 1989a:pl. 5, Sokanovskii 1966: 386.
Distribution: Asia (E USSR), Europe (Austria/ Bulgaria/ Czechoslovakia/ Denmark/ France/ Germany/ Greece/ Hungary/ Norway/ Poland/ Spain/ Sweden/ W USSR/ Yugoslavia).
Hosts: *Ulmus* spp., *Acer* sp., *Alnus* sp., *Corylus* sp., *Fagus* sp., *Malus* sp., *Quercus* sp., *Tilia* sp.
Notes: (3) Butovitsch 1929: 44 (described var. *pomacearum,* no status in nomenclature, synonymy by Schedl 1948b: 36).
References: (**ay**) Anderbrant, O. & Schlyter 1987a; Butovitsch 1929: 8, 44–45; Escherich 1923b: 439, 478, 494; Negru 1968b: 802; Nusslin 1911a: 58, 129, 337; Scholz 1905: 144. (**bv**) Anderbrandt, O. & Schlyter 1987b; Barr, B. A. 1969: 643; Grune 1979: 37; Kirby, S. G. & Fairhurst 1983; Maksimovic 1979a: 285; Michalski 1959c: 170; Prell 1926: 69; Wichmann 1967. (**cn**) Atkins, O'Callaghan, & Kirby 1981; Austara et al. 1983; Bejer-Petersen 1978; Bevan 1987: 121; Chorbadzhievo 1929; Eckstein 1926: 577; Edelman & Malysheva 1959a, 1959b; Ehnstrom 1985; Eidmann & Klingstrom 1976: 236; Escherich 1923b: 439, 478, 494; Esterberg 1959; Falck 1916: 164; Fransen 1933: 39; Fystro 1960; Gabler 1955; Harding & Ravn 1982: 478; Hess & Beck 1914: 239, 1927: 295; Kaiser 1931; Leach 1940b: 227; Lekander 1951a: 73, 1954b: 7; Lekander et al. 1951: 3; Lustner et al. 1935: 81; Mathiesen 1950: 74; Nosek 1951: 106, 1952b: 98; Pfeffer 1979: 148; Pierce, W. D. 1917: 96; Readio 1935: 344; Rhumbler 1927: 285; Roll-Hansen 1963: 69; Schimitschek 1927: 279, 1951a: 101, 1955a: 155, 1955c: 73; Schwerdtfeger 1944a: 172, 1957a: 181; Tubeuf 1936: 500; Vajda 1952: 114; Wachtl 1901: 380; Yde-Anderson 1982; Zakharov & Levkovich 1951: 300. (**ec**) Anderbrandt, O. & Schlyter 1987b; Androic 1966: 46; Apel 1983; Atkins, O'Callaghan, & Kirby 1981; Balazy 1965a; Bejer-Petersen 1978; Cooreman 1963: 46; Crowson 1981a; Escherich 1925a, 1935; Fleischer 1911; Fransen 1933: 39, 1937b; Gabler 1947b; Harding & Ravn 1982: 478; Heqvist 1963; Hirschmann 1960; Hirschmann & Wisniewski 1982, 1983; Jamnicky 1957b: 20, 1957c; Kirby, S. G. & Fairhurst 1983; Kleine 1908c: 177, 1909a: 42; Leach 1940b: 227; Lindeman 1964: 78–82, 112; Maksimovic 1979a: 285; Nosek 1951: 106, 1952b: 87, 98, 1959a: 118; Pettersen 1976b; Pfeffer 1931b: 7, 74, 1943b: 179, 1979: 148; Prell 1926: 69; Rummukainen 1954: 24; Schimitschek 1930a: 288, 1955a: 155, 1964e; Schlyter et al. 1987; Schwerdtfeger 1944a: 172, 1957a: 181; Sedlaczek 1935a: 162; Sellnik 1931: 185; Vitzthum 1923: 110, 1926: 408; Webber & Gibbs 1989; Westerboer 1963: 254; Wichmann 1967; Yde-Andersen 1978, 1982, 1983a, 1983b. (**hb**) Apel 1983; Bevan 1987: 121; Bukowsky 1930; C. 1928; Chorbadzhievo 1929; Czech 1887; Dombrowsky 1887, 1892; Eckstein 1897, 1926: 577; Edelman & Malysheva 1959b; Eichhoff 1881a: 40, 152; Eidmann & Klingstrom 1976: 236; Escherich 1923b: 439, 478, 494; Falek 1916: 164; Fisher 1931; Fuchs 1904a; Gabler 1955; Gyorfi 1957; Harding & Ryan 1982: 478; Henschel 1895a: 156; Hess & Beck 1914: 239, 1927: 295; Kalandra & Pfeffer 1935; Karpinski & Strawinski 1948: 153; Keller 1913: 242; Kemner 1919: 171–176; Kirby, S. G. & Fairhurst 1982, 1983; Knotek 1894a: 553, 1897: 137, 1898b: 315; Lekander 1954b: 7; Maksimovic 1979a: 285; Marcu 1941: 401; Michalski 1959c: 170; Nosek 1959a: 118, 1959b: 87; Nunberg 1929c: 113; Palm 1958: 347; Parihar & Hayes 1987; Pfeffer 1942a: 10, 1989a: 47; Postner 1974: 383; Rhumbler 1927: 285; Rimski-Korsakov et al. 1949: 272; Samal 1928: 141; Schedl 1981b: 42; Schimitschek 1930a: 288, 1955a: 155; Schwerdtfeger 1944a: 172, 1957a: 181, 1981: 187; Sedlaczek 1935a: 162; Simmel 1919a: 34–36; Spessivtsev 1913a: 35; Stark 1926a: 331, 1952: 120; Tragardh 1939b: 165; Tschorbadjiev 1929: 154; Wachtl 1901: 380; Wichmann 1909a: 147–149, 164–165. (**ds**) Allen, A. A. 1985; Androic 1966: 46; Atkins, O'Callaghan, & Kirby 1981; Audras & Schaefer 1957; Balachowsky 1944b; Bangsholt 1975: 95; Barthe 1896; Bejer-Petersen 1978; Bejer-Petersen & Jorum 1977: 3; Brakman 1966b: 203; Bukowsky 1930; Buresh & Lazarov 1956; Butovitsch 1929: 8, 44–45; Calwer 1884, 1893; Chapuis 1869: 54, 1873: 262; Chorbadzhievo 1929; Csiki 1914; Dzambazivili 1961a: 751–757, 1961b: 1253–1254; Endrodi 1958b, 1986: 217; Escherich 1923b: 439, 478, 494, 1932b; Esterberg 1959; Fuchs 1904a, 1905a; Gabler 1949b; Gemminger & Harold 1872: 2695; Gozis 1875: 80; Grill 1895: 312; Grune 1979: 37; Hagedorn 1910d: 85; Hansen, V. 1939, 1956, 1964: 456; Hellen 1947; Henschel 1895a: 156; Heyden, Reitter, & Weise 1883: 181, 1891: 670, 1906: 708; Horion 1951; Jacentkovsky 1935: 22; Karpinski 1948b: 228; Karpinski & Strawinski 1948: 153; Kemner 1919: 171–176; Klefbeck & Sjoberg 1960; Kleine 1912a: 263, 267, 1913a: 34, 1913b: 151, 1934a: 169; Knotek 1892a: 35, 1894a: 553–555, 1898b: 315; Kozikowsky & Kuntze 1925: 18; Kurir 1947c: 24; Langhoffer 1915c: 156; Linder 1953: 71; Lucht 1987: 275; Luigioni 1929: 990; Lundgren

1988; Michalski 1973a: 70; Negru 1966b, 1968a: 454; Nunberg 1928b: 87, 91, 99–100, 1954: 89; Palm 1959: 28; Pascovici 1962; Pfeffer 1924b: 472, 1931b: 7, 74, 1935: 159, 1936: 89, 1989a: 47; Pierce, W. D. 1917: 96; Pittioni 1943: 176; Postner 1974: 383; Prossen 1913: 81; Reitter 1894a: 41, 1916: 270; Rimski-Korsakov et al. 1949: 272; Roubal 1908: 12–13, 1913: 146, 1941: 256; Sainte-Claire & Mequignon 1938: 443; Schaufuss 1915: 1204; Schedl 1948b: 36, 1981b: 42; Schilsky 1909: 186; Schimitschek 1937: 43, 1951a: 101; Schwerdtfeger 1981: 187; Stark 1926a: 331, 1926j: 123, 1952: 120; Stein & Weise 1877: 164; Strohmeyer 1912e: 250; Tragardh 1939b: 165; Tredl 1907: 6; Tschorbadjiev 1929: 154; Wichmann 1927a: 49; Winter, T. G. 1983: 46; Yde-Andersen 1978; Zinovjev 1955: 186, 191. (**tx**) Apel 1983; Balachowsky 1944b: 18–19, 1949a: 74–75; Butovitsch 1929: 8, 44–45; Chapuis 1869: 54, 1873: 262; Csiki 1906; Dombrowsky 1887, 1892; Eggers 1908: 12–13, 1912c: 202–203, 1913a: 286; Eichhoff 1881a: 40, 152, 1883a: 105, 129; Endrodi 1957a: 307, 1957b: 419; Escherich 1923b: 439, 478, 494; Formanek 1907: 9; Gabler 1949b, 1955; Grune 1979: 37; Hagedorn 1910a: 123; Hansen, V. 1956, 1964: 456; Henschel 1895a: 156; Iablokoff-Khnzorian 1961: 85; Jacentkovsky 1935: 22; Karpinski & Strawinski 1948: 153; Knotek 1892a: 35; Lovendal 1889b: 46, 1898: 58; Lucht 1987: 275; Luigioni 1929: 990; Lundgren 1988; Michalski 1959a: 171–174, 1962a: 53, 1962b: 202, 1967: 313, 1973a: 70–73, pl. 20; Negru 1966b; Nunberg 1929c: 113–116, 1954: 89, 99–100; Nusslin 1911a: 337, 58, 129; Pfeffer 1932b: 10, 1942a: 10, 1955: 87, 1989a:pl. 5; Portevin 1935: 309; Postner 1974: 383; Quaschik 1953: 35; Reitter 1894a: 40–41, 1913a: 17, 1916: 270; Rey 1892b: 30; Rhumbler 1927: 285; Schedl 1934f: 1633, 1948b: 36, 1980a: 2, 1981b: 42; Schevyrew 1893: 77; Schimitschek 1955c: 73; Sokanovskii 1966: 385–386; Spessivtsev 1913a: 35, 1921a: 316–326, 1922a: 456, 1925a: 152, 1931: 14–15; Stark 1952: 120–121. (**ms**) Escherich 1932b.

loevendali Eggers 1912c: 203 (*Eccoptogaster*). Syntypes ♂♀; Dyrehaven, Hadsund, Denmark; UZMC, Copenhagen. Synonymy: Balachowsky 1949a: 74.
References: (**hb**) Kemner 1919: 170–176; Nunberg 1929c: 113. (**ds**) Kleine 1913b: 151, 1934a: 169; Pfeffer 1935: 159. (**tx**) Balachowsky 1949a: 74; Eggers 1912c: 203–204; Endrodi 1957: 410; Nunberg 1929c: 113; Reitter 1913a: 17; Schedl 1934f: 1633, 1948b: 36.

***laricis* Blackman** 1934: 24. Holotype ♂; Moscow, Idaho [USA]; USNM, Washington.
Figures: Edson 1967: 41 (adult), 56 (galleries).
Distribution: North America (British Columbia in Canada/ Idaho, E Montana, Oregon, Washington in USA).
Hosts: *Larix occidentalis, L. lyalli*.
References: (**ay**) Schmitz, R. F. & Furniss 1968. (**cn**) Doane et al. 1936; Keen 1938: 129, 1952c: 167; Tunnock 1966: 22. (**ec**) Keen 1938: 129; Marsh 1979: 150; Schedl 1958d: 187. (**hb**) Bright 1976d: 36; Chamberlin 1939: 232, 1958: 49; Doane et al. 1936; Edson 1967: 11; Keen 1938: 129, 1952c: 157. (**ds**) Blackwelder 1939; Bright 1976d: 36; Chamberlin 1939: 232, 1958: 49; Edson 1967: 11; Esbjerg & Bejer-Petersen 1979; Furniss, M. M. & Furniss 1972; Furniss, R. L. & Carolin 1977: 403; Gast et al. 1989: 385; Keen 1938: 129, 1952c: 167; Patterson & Hatch 1945: 149; Schultz & Furniss 1968: 1626; Wood, S. L. 1972a: 397, 1982b: 433. (**tx**) Blackman 1934: 24–25; Bright 1976d: 36; Chamberlin 1939: 232, 1958: 49; Edson 1967: 11, 41; Wood, S. L. 1972a: 397, 1982b: 433.

***major* Stebbing** 1903a: 203. Syntypes 2 ♂; syntypes labeled Konian, Chakrata, U. P., published as North-West Himalaya; FRI, Dehra Dun.
Distribution: Asia (Himachal Pradesh, Kashmir, Punjab, Uttar Pradesh in India).
Hosts: *Cedrus deodara*, rare in *Pinus excelsa*.
References: (**ay**) Butovitsch 1929: 8; Gardner 1934b: 1–17. (**cn**) Beeson 1918: 114–124; Browne 1968: 644; Chatterjee 1917b: 1–4; Pierce, W. D. 1917: 52; Stebbing 1903a: 203, 1914: 568; Thapa & Pratap 1986. (ec) Beeson 1922c: 498; Khan 1975; Stebbing 1914: 568; Thapa & Pratap 1986; Thompson, W. R. 1943: 105. (**hb**) Beeson 1914: 1–5, 1918: 114–124, 1922c: 498; Browne 1968: 644; Stebbing 1903a: 203, 1909b: 21, 1911a: 5, 1914: 568; Thapa & Pratap 1986. (**ds**) Beeson 1922c: 498, 1961: 296; Browne 1968: 644; Butovitsch 1929: 8; Hagedorn 1910d: 85; Kleine 1913b: 151, 1914b: 270, 1934a: 169; Pierce, W. D. 1917: 52; Peyerimhoff 1933b: 392; Schedl 1974a: 85; Stebbing 1903a: 203. (**tx**) Butovitsch 1929: 8; Gardner 1934b; Hagedorn 1910a: 123; Schedl 1958g: 166; Stebbing 1903: 203, 1909a: 9, 1909b: 21, 1911a: 10, 1914: 568; Thapa & Pratap 1986.

minor Stebbing 1903a: 207, 1909b: 22. Holotype ♂; type labeled Kainthali, Chamba, published as North-West Himalaya, India; FRI, Dehra Dun. Synonymy: Beeson 1941 (1961: 296).
References: (**ay**) Butovitsch 1929: 8. (**cn**) Pierce, W. D. 1917: 52; Stebbing 1903a: 207, 1914: 577. (**ec**) Beeson 1922c: 498; Stebbing 1914: 577. (**hb**) Beeson 1922c: 498; Stebbing 1903a: 207, 1908a: 104, 1909b: 22, 1911a: 5, 1914: 577. (**ds**) Beeson 1922c: 498; Butovitsch 1929: 8; Hagedorn 1910d: 85; Kleine 1913b: 151, 1914b: 270; Peyerimhoff 1933b: 392; Pierce, W. D. 1917: 52; Stebbing 1903a: 207. (**tx**) Beeson 1941 (1961: 296); Butovitsch 1929: 8; Hagedorn 1910a: 123; Stebbing 1903a: 207, 1909b: 22, 1911a: 18, 1914: 577.

deodara Stebbing 1903a: 220. Syntypes, sex?;

India: N. W. Himalayas: Simla Hill States Divisions: Jamsar, Punjab: Chamba Division Simla: Cheog Forest; not at FRI, Dehra Dun, lost? Synonymy: Beeson 1941 (1961: 296).
References: (**ay**) Butovitsch 1929: 7. (**cn**) Beeson 1915: 1–5; Chatterjee 1917b: 1–4; Pierce, W. D. 1917: 52; Stebbing 1903a: 220. (**ec**) Beeson 1922c: 498. (**hb**) Beeson 1922c: 498; Stebbing 1903a: 220, 1908a: 108, 1909b: 23, 1911a: 5. (**ds**) Beeson 1922c: 498; Butovitsch 1929: 7; Hagedorn 1910d: 84; Kleine 1913b: 151, 1914b: 270, 277; Peyerimhoff 1933b: 392; Pierce, W. D. 1917: 52; Stebbing 1903a: 220. (**tx**) Beeson 1941 (1961: 296); Butovitsch 1929: 7; Hagedorn 1910a: 123; Stebbing 1903a: 220, 1909b: 23, 1909c, 1910: 37, 1914: 363–365.

***mali* (Bechstein)** 1805: 882 (*Bostrichus*). Syntypes, sex?; Meiningen (?), Germany; not located.
Figures: Balachowsky 1963a: 1269, Michalski 1973a: pl. 40, Pfeffer 1989a:pl. 5, Sokanovskii 1966: 384.
Distribution: Africa (Algeria/ Egypt/ Morocco), Asia (Turkey/ E USSR), Europe (Austria/ Belgium/ Bulgaria/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Hungary/ Ireland/ Italy/ Luxemburg/ Netherlands/ Norway/ Poland/ Romania/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia), North America (introduced into: Ontario, Quebec in E Canada/ Maryland, New Jersey, New York, Ohio in USA).
Hosts: *Malus* spp., *Prunus* sp., *Pyrus* sp., *Cotoneaster* sp., *Crataegus* spp., *Sorbus* spp., *Ulmus* spp.
Notes: (3) Reitter 1913a: 19 (described abberation *strigilatus*, no status in nomenclature).
References: (**ay**) Butovitsch 1929: 8, 46; Escherich 1923b: 478, 511; Fisher 1954; Negru 1968b: 806; Nunberg 1928a: 140; Nusslin 1911a: 377; Scherb 1971; Thomas, J. B. 1967. (**bv**) Barr, B. A. 1969: 643; Grune 1979: 37; Hellen 1921; Klimetzek & Kopp 1983; Michalski 1959c: 170; Prell 1930c: 631; Rudinsky, Vallo, & Ryker 1978; Wichmann 1967. (**cn**) Acatay 1943a: 58; Anonymous 1962j, 1963r; Baggiolini & Wildbolz 1965: 252; Brandt 1952, 1957; Chorbadzhievo 1929; Drooz 1985: 354; Escherich 1923b: 478, 511; Esterberg 1959; Fiori 1950; Fisher 1937c: 110–128; Garcia-Tejero 1955: 228; Gentry, J. W. 1965: 90; Ghillini 1948; Gradojevic 1938; Grigorovich 1960; Gyorfi 1946: 195, 1959; Hagedorn 1910c; Hahmann 1938: 116; Hellen 1921; Hill, D. S. 1983: 630; Kholodkovskii 1912: 290; Kleine 1932a: 304; Kotte 1941: 63–64, 1948: 69, 1958: 116; Lees 1926: 506–515; Lindquist, O. H. & Syme 1981: 99; Majernik 1957: 72; Marcu 1926c: 59; Martin 1959: 174; Masse 1934: 170, 1959: 118; Mokrzecki 1931a: 68; Muller 1912: 184; Nusslin 1913: 232; Pierce, W. D. 1917: 24; Reay 1969: 50; Rhumbler 1922: 274, 1927: 285; Richards 1935: 81–86; Roepke 1931: 162; Russ 1958: 113; Samal 1931: 98–103; Savary 1946: 93; Schimitschek 1935b: 146, 1955a: 144, 147, 1955c: 73; Schmidt 1949a: 54; Schneider-Orelli 1917a: 6; Schreier 1950: 393; Schwerdtfeger 1944a: 174, 1957a: 182; Sippell, Gross, & Rose 1969: 62; Soenen & Paternotte 1972; Syme & Nystrom 1988: 94; Vostrikow 1913: 40–41; Vukasovic 1932: 20–47; Wichmann 1927a: 358; Wilson, G. F. & Becker 1960: 86. (**ec**) Arambourg 1964: 115; Baggiolini & Wildbolz 1965: 252; Balazy & Michalski 1964b; Boucek 1957b: 80; Chararas 1957d; Devdariani 1971; Fisher 1954; Fuchs 1930; Gauss 1954a: 423; Heqvist 1963; Hirschmann 1971b: 40; Hirschmann & Zirngiebl-Nicol 1961; Jamnicky 1957b: 20, 1957c; Karg 1988; Kleine 1909a: 42, 1944: 73; Kostenko 1929; Lindeman 1964: 112; Michalski 1976; Michalski & Ratajczak 1989; Nikitsky 1978; Nosek 1956: 204, 1959a: 118, 1959b: 87; Novak, P. 1952: 411; Nunberg 1930: 204; Nunberg & Wiackowski 1958: 130; Nuorteva 1957b: 52; Nusslin 1927: 285; Pfeffer 1923a: 329, 1931b: 7, 1943b: 179; Poinar 1975: 168; Ruhm 1956b: 3, 1969; Schimitschek 1930a: 340, 1936a: 560, 1946: 9, 1955a: 144, 147, 1964c; Schwerdtfeger 1944a: 174, 1957a: 182; Sedlaczek 1935a: 162; Szczepanski 1960a: 409; Tenkacova & Mituch 1987; Thompson, W. R. 1943: 105; Thompson, W. R. & Simmonds 1964: 36, 1965: 4; Tudor 1969: 34; Wichmann 1967. (**hb**) Acatay 1943a: 58; Adeli 1972: 14; Anonymous 1920: 63; Baker, W. L. 1972: 237; Balachowsky 1963a: 1263; Balachowsky & Mesnil 1935; Beffa 1949, 1961; Bonnemaison 1953; Bright 1976d: 31; Chorbadzhievo 1926: 175–241; 1929; Deyrup & Atkinson 1987a: 65; Drooz 1985: 354; Escherich 1923b: 478, 511; Fisher 1954; Gavalov 1927: 8–16; Gyorfi 1957; Hagedorn 1910c; Hennings 1908c: 212; Hill, D. S. 1983: 679; Jamnicky 1957d: 18; Kamp 1951a; Karpinski 1933b: 23; Karpinski & Strawinski 1948: 153; Kholodkovskii 1912: 290; Kleine 1932a: 304; Korolkov 1929; Kotte 1941: 63–64; Kovacevic 1928: 33–41; Lengerken 1939: 50, 1954: 69; Loos 1913: 409; Luchnik 1925: 9–15; Madon 1930: 99; Majernik 1957: 72; Mercet 1929: 19–22; Michalski 1959c: 170; Mokrzecki 1931: 67–68; Nosek 1956: 204, 1959a: 118, 1959b: 87; Nunberg 1929a: 92, 1929c: 113, 1947c: 100; Nusslin 1913: 232, 1927: 285; Obarski 1931: 14–23; Orelli 1917: 416–426; Palm 1954b: 28; Petri 1929: 1–66; Pfeffer 1942a: 16; Postner 1974: 387; Prell 1930c: 631; Rakushev 1916: 139–145; Rhumbler 1922: 274, 1927: 285; Robek 1930: 95–98; Roepke 1940: 168–174, 1947: 114–116; Saalas 1913a: 69; Sakharov 1925: 83–84; Schedl 1981b: 41; Schimitschek 1930a: 340, 1946: 7, 1955a: 144, 147; Schwerdtfeger 1944a: 174, 1957a: 182; Sedlaczek 1935a: 162; Spessivtsev 1913a: 40; Stanek 1969: 255; Stark 1926a: 331, 1952: 123; Sureva 1929: 117; Tschorbadjiev 1929: 154; Wahl 1926: 21–48; Wichmann 1927b: 358; Wilson, G. F. & Becker 1960: 86; Wood, S. L. 1982b: 426. (**ds**) Adeli 1972: 14; Ammann & Knabl 1913, 1923; Anonymous 1962j,

1963r; Audras & Schaefer 1957; Baggiolini & Wildbolz 1965: 252; Balachowsky 1944b, 1963a: 1263; Bangsholt 1975: 95; Beffa 1949; Bejer-Petersen & Jorum 1977: 3; Borchert 1951; Brakman 1966b: 203; Bright 1976d: 31; Brown, W. J. 1950: 203; Bucking 1932; Buresh & Lazarov 1956; Butovitsch 1929: 8, 46; Carpentier & Delaby 1908; Chorbadzhievo 1924d, 1929; Deyrup 1981b: 5; Deyrup & Atkinson 1987a: 65; Drooz 1985: 354; Dzhambazishvili 1961a: 751–757, 1961b: 1253–1254; Eder 1934; Endrodi 1958b; Escherich 1923b: 478, 511; Esterberg 1928, 1959; Everts 1925; Fagel & Guilleaume 1935: 335; Gentry, J. W. 1965: 90; Grune 1979: 37; Hagedorn 1910d: 85; Hansen, V. 1939, 1956, 1964: 456; Hellen 1947; Helliesen 1916: 83; Heyden, Reitter, & Weise 1906: 708; Hill, D. S. 1983: 679, 1987: 337; Horion 1949, 1951; Jazentkovsky 1912: 286; Karpinski 1925: 215, 1926: 81, 1931: 21, 36, 1933b: 23, 1948b: 228; Karpinski & Strawinski 1948: 153; Keler 1925b: 270; Kersten 1933: 72; Kiefer et al. 1942: 528; Klefbeck & Sjoberg 1960; Kleine 1912a: 263, 267, 1913a: 34, 1913b: 151, 1914b: 248, 1932a: 304, 1934a: 169; Kobakhidze 1957: 178; Kostenko 1929; Kozikowsky 1921: 179; Krivolutskaya 1983; Krogerus 1942: 168; Langhoffer 1915c: 156; Leclercq 1971; Lindquist, O. H. & Syme 1981: 99; Lomnicki 1913b: 147; Loos 1913: 409; Lucht 1987: 275; Luigioni 1929: 990; Lundberg 1963b; Mahler 1987: 232; Marcu 1926c: 59; Michalski 1973a: 119; Munster 1922b: 134; Negru 1957: 129, 1966b, 1968a: 454; Novak, P. 1952: 411, 1964; Nunberg 1928b: 88, 92, 1947a: 29, 1954: 92; Orest 1926c: 59; Palm 1954b: 28, 1959: 60, 212, 348; Pascovici 1962; Pfeffer 1931b: 7, 76, 1989a: 50; Pierce, W. D. 1917: 24; Pittioni 1943: 174; Pjatnitskii 1930a: 162; Postner 1974: 387; Prossen 1913: 82; Rapp 1934: 717; Redtenbacher 1874: 373; Reitter 1916: 271; Robek 1930: 96; Roubal 1913: 146, 1935b: 72, 1941: 256; Saalas 1913a: 69, 1931: 67; Sainte-Claire & Mequignon 1938: 443; Schaefer 1959: 235; Schaufuss 1915: 1204; Schedl 1961b: 186, 1980a: 2, 1981b: 41; Scheerpeltz & Winkler 1930: 255; Schilsky 1909: 186; Sifroshvili & Akhaladze 1966: 358; Sokanovskii 1966: 381; Stark 1926a: 531, 1926b: 101, 1926j: 123, 1927b: 85, 1952: 123; Syme & Nystrom 1988: 94; Tschorbadjiev 1929: 154; Wichmann 1927a: 49–50; Winter, T. G. 1983: 44; Wood, S. L. 1977a: 72, 1982b: 415; Yanovskii & Tegshzhargal 1985: 415; Zoufal 1920: 20. (**tx**) Balachowsky 1944b: 19–21, 1949a: 76, 1963a: 1263; Balachowsky & Mesnil 1935: 21; Bechstein 1805: 822, 1818: 76, 217; Bechstein et al. 1805: 882; Beffa 1949, 1961; Bright 1976d: 28, 37; Butovitsch 1929: 8, 46; Carpentier & Delaby 1908; Ceballos 1945; Chapuis 1869: 59, 1873: 267; Chorbadzhievo 1924d; Duffy 1953; Eggers 1922c, 1929e: 42, 1933: 75–76, 1941c: 124, 1942d: 280–281; Eichhoff 1881: 154–155, 1883: 129–133; Endrodi 1957b: 420; Escherich 1923b: 478, 511; Formanek 1907: 9; Grigorovich 1960: 37; Hagedorn 1910a: 123; Hansen, V. 1956, 1965: 456; Iablokoff-Khnzorian 1961: 71; Kalina 1970: 129; Karpinski & Strawinski 1948: 153; Kuhnt 1913: 1048; Kurenzov 1941: 228; Lindquist, O. H. & Syme 1981: 99; Lucht 1987: 275; Luigioni 1929: 990; Michalski 1959c: 171–175, 1973a: 119–122, pl. 40; Negru 1966b; Nunberg 1928a: 140, 1928b: 114–115, 1929c: 113, 1930: 200–208, 1954: 92; Nusslin 1911a: 377; Pfeffer 1932b: 10, 1942a: 16, 1955a: 87–89, 1989a:pl. 5; Portevin 1935: 310; Postner 1974: 387; Quaschik 1953: 35; Ratzeburg 1837: 186–187; Redtenbacher 1874: 373; Reitter 1894a: 41, 1913a: 19, 1916: 271; Rey 1892: 32; Rhumbler 1922: 274, 1927: 285; Saalas 1913a: 69; Schedl 1934f: 1633, 1947c: 62, 1948b: 27, 1952f: 86, 1980a: 2, 1981b: 41; Scherb 1971; Schevyrew 1893a: 121–122, 1893b: 85–88; Schimitschek 1937: 43, 1955c: 73; Schreier 1950: 393; Semenov 1904: 38; Sokanovskii 1954: 14, 1966: 381–389; Spessivtsev 1913a: 40, 1921a: 316, 1922a: 457, 1925a: 153, 1931: 14–16; Stark 1952: 123–125; Stresemann et al. 1989: 353; Syme & Nystrom 1988: 94; Thomas, J. B. 1967; Wood, S. L. 1982b: 426. (**ms**) Hellen 1921; Merino-Rodriguez 1966: 42.

pruni Ratzeburg 1837: 186 (*Eccoptogaster*). Syntypes, sex?; apparently Germany; ZIFH, Eberswalde. Synonymy: Bedel 1906: 93, Reitter 1913a: 19.

References: (**ay**) Gahan 1900; Lekander 1959d: 92; Marcus 1930: 644; Nusslin 1911a: 51; Schneider-Orelli 1913: 17; Scholz 1905: 144; Sedlaczek 1902b: 244. (**cn**) Archer 1866; Barbey 1902: 164; Baudys 1920: 55–58; Berlese 1915; Fisher 1937c; Gehin 1857b: 63; Goureau 1861: 107, 1865: 19; Hess 1900: 54; Hess & Beck 1914: 243, 1927: 298; Hoffmann 1913: 218–220, 1916: 260; Judeich & Nitsche 1895: 444, 485; Kemner 1916; Kollar 1841: 266; Koppen 1882: 250; Krainsky 1914: 329–339; Letzner 1880: 355; Lokaj 1906: 22; Lustner 1913a: 4; Martelli 1914: 165–170, 677, 1915: 165; Packard 1890: 860; Picard 1921: 15; Pierce, W. D. 1917: 24; Roark & McIndoo 1941: 29; Schneider-Orelli 1907: 289, 1915a: 66, 1915b: 47; Tubeuf 1936: 500; Vajda 1952: 114; Wachtl 1901: 380; Weber 1926: 577; Wellhouse 1922: 1106; Zirngiebl 1901: 57; Zurn 1902: 19. (**ec**) Barbey 1902: 164; Elliot & Morley 1907; Fintzescu 1930a: 245; Francke-Grosman 1931; Gabler 1947b; Gillanders 1906; Giraud & Laboulbene 1877: 427; Grossmann 1931a; Gyorfi 1941b, 1952b; Hinton 1945: 222; Hormuzaki 1893: 108; Hubenthal 1902: 291; Kleine 1908c: 177; Klimesch 1914c: 59; Perris 1856a: 243; Rondani 1873: 162; Schneider-Orelli 1912a: 324, 1913: 27, 1915: 65–67, 1916: 5–9, 17–21; Vietinghoft 1924: 337. (**hb**) Bach 1864; Barbey 1901: 10, 16, 40; Bargmann

1906; Bandys 1929; Berlese 1915; Budkov 1897; Chapman 1869c: 126–131; Chittenden 1890; Dallimore & Munro 1922; Dombrowsky 1887, 1892; Eckstein 1889, 1897; Eichhoff 1881a: 41, 154; Everts 1900, 1903: 741; Fisher 1931; Fuchs 1904a, 1905c: 340; Gahan 1900; Gillanders 1906, 1908; Girard 1873; Hagedorn 1903a; Henschel 1876a: 202, 242, 1895a: 156; Hess 1900: 54; Hess & Beck 1914: 243, 1927: 298; Hilter 1909; Judeich 1880: 160; Judeich & Nitsche 1895: 444, 485; Knoche 1905: 354; Knotek 1894a: 553, 1897: 140, 1898b: 318; Kollar 1840: 266; Letzner 1845: 37, 1846: 76; Lindemann 1881b: 171–173, 1887: 197; Lunardoni & Leonardi 1889: 452; Lustner 1913a: 4; Munro 1926: 46; Nordlinger 1856: 43, 1869: 335; Nusslin 1898: 276; Packard 1890: 860; Perris 1856a: 243; Prochazka 1929: 36; Ratzeburg 1837: 186, 1839: 229; Robek 1930: 96; Rupertsberger 1880: 228; Schneider-Orelli 1913: 27; Smith, J. B. 1886: 127; Taschenberg 1880: 240, 245, 1901: 106; Wachtl 1901: 380; Weber, H. 1926: 577; Wichmann 1909a: 148, 165; Zirngiebl 1901: 57; Zurn 1902: 19. (**ds**) Acloque 1896; Andersch 1851; Barthe 1896; Bau 1888; Bedel 1888b: 387, 405; Bielz 1851, 1887; Blanchere & Robert 1889; Brancsik 1871, 1906; Budkov 1897; Calwer 1884, 1893; Chapman 1870b, 1900; Chapuis 1869: 59, 1873: 267; Chapuis & Candeze 1853; Chittenden 1890; Credler 1868; Crotch 1863; Dallimore & Munro 1922; Debatisse 1945; Eggers 1904; Ericson & Sandin 1893; Everts 1900, 1922: 637; Eyquem 1891; Favre 1890; Fleischer 1888; Forster 1849: 440; Fowler 1891; Fricken 1889: 283; Fuchs 1904a, 1905a, 1905c: 340; Gaubil 1849: 127; Gehin 1857a: 392; Gemminger & Harold 1872: 2695; Gozis 1875: 80; Gredler 1866: 372, 1869: 73; Grill 1895: 312; Gyorfi 1941b; Hagedorn 1903a; Heinemann 1908a; Henschel 1895a: 156; Heyden 1876: 295, 1881: 177, 1893: 177; Heyden, Eppelsheim, & Reitter 1885: 300; Heyden, Reitter, & Weise 1883: 171, 1891: 670; Hickin 1963; Hormuzaki 1888: 156, 1891: 174; Judeich & Nitsche 1895: 444, 485; Kaltenbach 1874: 154, 178; Kestercanek 1881: 12; Knotek 1892a: 35, 1894a: 553, 1898b: 315; Koltze 1901: 152; Koppen 1882: 250; Kotula 1873b: 80; Kraatz 1869: 59; Lacordaire 1866: 387; Lentz 1857: 140; Lesne 1917: 222–224; Letzner 1880: 355–356; Lindemann 1884b: 264, 1887: 197; Lokaj 1868: 63; Lomnicki 1886a: 241; Lunardoni & Leonardi 1889: 452; Matthews & Fowler 1883: 42; Meinert 1887: 70; Moritz 1920; Nusslin 1898: 276; Pacher 1865: 152; Perris 1876a: 254, 1877a: 414; Pierce, W. D. 1917: 24; Ratzeburg 1837: 186, 1839: 229; Redtenbacher 1858: 838; Reitter 1869b: 153, 1888b: 280, 1894a: 41; Robek 1930: 96; Sacharov 1914, 1915; Schaum 1859: 95, 1862: 100; Schevyrew 1890c: 469; Schilsky 1909: 186; Schiodte 1873: 105; Seidlitz 1872: 390, 1891a: 557, 1891b: 602; Semenov 1904: 38; Sharp & Fowler 1893: 34; Smith, J. B. 1886: 127; Sokanovskii 1966: 389; Stein 1868: 144; Stein & Weise 1877: 164; Stierlin 1898: 436; Stierlin & Gautard 1871: 294, 1906: 205; Sturm 1843: 229; Thomson 1865: 374, 1868: 224; Tredl 1907: 6; Wahl 1914; Wahl et al. 1914; Westhoff 1882: 238; Wiepken 1883: 89; Wille 1925b: 422. (**tx**) Acloque 1896; Bach 1854, 1864; Balachowsky 1949a: 76; Barbey 1901: 10, 16, 37; Bedel 1888b: 387, 405, 1906: 93; Bertolini 1872; Brancsik 1871; Chapuis 1869: 59, 1873: 267; Chapuis & Candeze 1853; Csiki 1906; Desbrochers 1891; Dombrowsky 1887, 1892; Eggers 1942d: 280–281; Eichhoff 1864b: 32, 1881a: 41, 154, 1883a: 105, 129; Escherich & Escherich 1897; Everts 1903: 741, 1922: 637; Fauvel 1887; Ferrant 1911; Fleischer 1905; Fricken 1889: 283; Gillanders 1908; Girard 1873; Henschel 1876a: 202, 242, 1895a: 156; Heyden 1893: 177; Judeich & Nitsche 1895: 444, 485; Knotek 1892a: 35; Lacordaire 1866: 387; Letzner 1846: 76, 1891: 374; Leunis 1886: 183; Lindemann 1881b: 171; Lovendal 1889b: 48, 1898: 59; Lunardoni & Leonardi 1889: 452; Nordlinger 1848: 253, 1856: 43; Nusslin 1911a: 51; Perris 1877a: 414; Pfeil 1862: 436; Ratzeburg 1837: 186, 1839: 229; Redtenbacher 1849: 361, 1849b: 27, 1858: 838; Reitter 1894a: 41, 1894d: 128, 1908b: 23, 1913a: 19; Rey 1892b: 30; Rupertsberger 1880: 228; Schedl 1934f: 1633, 1948b: 27; Schlechtendal & Wunsche 1879: 125; Seidlitz 1872: 390, 1891a: 557, 1891b: 602; Semenov 1904: 38; Simmel 1918: 288; Sokanovskii 1966: 389; Spessivtsev 1921: 315–326; Stierlin 1898: 436; Taschenberg 1880: 240, 245, 1901: 106; Thomson 1865: 374, 1868: 224. (**ms**) Heinemann 1908a; Klimesch 1914c: 59.

pyri Ratzeburg 1837: 186 (*Eccoptogaster*). Syntypes, sex?; Wage- und Lothgangen, Germany; ZIFH, Eberswalde. Synonymy: Ratzeburg 1839: 229, Michalski 1973a: 119.

References: (**cn**) Fiske 1830; Letzner 1880: 355; Schimitschek 1947g: 168, 1955a: 144, 148. (**ec**) Kleine 1908c: 177; Schimitschek 1946: 9, 1955a: 144, 148. (**hb**) Bach 1864; Buddenberg 1885; Budge 1949; Dombrowsky 1892; Eckstein 1897; Henschel 1876a: 200, 242; Letzner 1845: 37, 1846: 76; Nordlinger 1855: 186, 1856: 43, 1869: 335; Ratzeburg 1837: 186, 1839: 229; Schimitschek 1946: 9, 1955a: 144, 148; Taschenberg 1901: 107. (**ds**) Andersch 1851; Bach 1849c; Chorbadzhievo 1924d; Fleischer 1888; Forster 1849: 440; Gaubil 1849: 127; Heyden 1876: 296; Lentz 1857: 140; Lomnicki 1886a: 241; Negru 1966b: 398; Perris 1876a:

254, 1877a: 414; Prossen 1913: 82; Ratzeburg 1837: 186, 1839: 229; Redtenbacher 1874: 373; Reitter 1894a: 41; Roubal 1908: 13, 1941: 256; Schaum 1859: 95, 1862: 100; Schilsky 1909: 186; Seidlitz 1891a: 557; Semenov 1904: 39; Sokanovskii 1966: 389; Stein 1868: 114; Stein & Weise 1877: 164; Stierlin 1898: 436; Stierlin & Gautard 1906: 205; Sturm 1843: 229; Westhoff 1882: 238; Zoufal 1920: 20. (**tx**) Bach 1864; Chorbadzhievo 1924d; Dombrowsky 1892; Eggers 1942d: 280–282; Henschel 1876a: 200, 242; Letzner 1846: 76, 1891: 374; Michalski 1973a: 119; Nordlinger 1848: 253, 1856: 43; Perris 1877a: 414; Pfeil 1862: 436; Ratzeburg 1837: 186, 1839: 229; Redtenbacher 1874: 373; Reitter 1894a: 41; Schedl 1934f: 1633, 1947c: 63–64; 1948b: 27; Seidlitz 1891a: 557; Semenov 1904: 38; Sokanovskii 1966: 389; Stierlin 1898: 436; Taschenberg 1901: 107.

castaneus Ratzeburg 1837: 187 (*Eccoptogaster*). Syntypes, sex?; Germany; ZIFH, Eberswalde. Synonymy: Eichhoff 1881a: 154, Schedl 1948b: 27.

References: (**cn**) Berlese 1915. (**hb**) Berlese 1915; Dombrowsky 1892; Ratzeburg 1837: 186, 1839: 230. (**ds**) Blanchere & Robert 1889; Calwer 1884, 1893; Chapuis 1869: 59, 1873: 267; Eyquem 1891; Gaubil 1849: 127; Gemminger & Harold 1872: 2695; Gozis 1875: 80; Heyden 1876: 296; Kraatz 1869: 59; Lacordaire 1886a: 387; Leder 1871: 131; Lomnicki 1886a: 241; Ratzeburg 1837: 186, 1839: 230; Redtenbacher 1858: 838, 1874: 373; Reitter 1849a: 41; Roubal 1941: 257; Schaum 1859: 95, 1862: 101; Schilsky 1909: 156; Semenov 1904: 38; Stein 1868: 114; Stein & Weise 1877: 164; Stierlin 1898: 436; Stierlin & Gautard 1871: 294; Sturm 1826: 102, 1843: 229; Westhoff 1882: 258. (**tx**) Bach 1854; Balachowsky 1949a: 76; Bertolini 1872; Chapuis 1869: 59, 1873: 257; Dombrowsky 1892; Eggers 1942: 280–281; Eichhoff 1881a: 154; Lacordaire 1866: 387; Letzner 1891: 374; Ratzeburg 1837: 186–187, 1839: 230; Redtenbacher 1849: 792, 1849b: 27, 1858: 838, 1874: 373; Reitter 1894a: 41; Schedl 1934f: 1633, 1948b: 27; Semenov 1904: 38; Stierlin 1898: 436.

sulcatus LeConte 1868: 167. Holotype ♀; New York [USA]; MCZ, Cambridge. Synonymy: Brown 1950: 203.

Notes: (3) Blackman 1934: 12 (redescribed).

References: (**ay**) Butovitsch 1929: 9. (**cn**) Blackman 1950; Britton 1933: 390; Collins 1940: 130–139, 1941: 370; Friend 1942a: 466; MacNay & Creelman 1958: 13; Martin 1936: 300; Pechuman 1943: 119; Pomerleau 1946: 13; Smucker 1942: 441–442; Wallace 1942: 540–541; Wallace & Beard 1942: 86–87. (**ec**) Buchanan 1940b: 250–251; Bushing 1965: 467; Smucker 1942: 441; Westerboer 1963: 391. (**hb**) Blackman 1950; Buchanan 1940b: 250–251; Chamberlin 1939: 227; Pechuman 1938: 537. (**ds**) Anonymous 1926c: 515; Blackman 1950; Blackwelder 1939; Blatchley & Leng 1916: 590; Butovitsch 1929: 9; Chamberlin 1939: 227; Dietrich 1936b: 217; Gemminger & Harold 1872: 2696; Hagedorn 1910d: 89; Henshaw 1882: 269, 1885; Hoffmann 1942: 12; Kaston 1938: 240; Kleine 1913b: 152; Leng 1920: 337; Leonard 1928: 515; MacNay 1949: 72; MacNay & Creelman 1958: 13; Pechuman 1937: 13; Swaine 1909: 107, 1910a: 33. (**tx**) Blackman 1934: 12–13; Blatchley & Leng 1916: 590; Brown, W. J. 1950: 203; Butovitsch 1929: 9; Chamberlin 1939: 227; Hagedorn 1910a: 124; LeConte 1868: 167, 1976: 371, 373; Muesebeck 1950: 137; Pechuman 1938: 537–543; Swaine 1909: 107, 1910a: 33, 1918a: 52.

nitidulus Chapuis 1869: 59. Holotype ♀; France meridionale; IRSNB, Brussels. Synonymy: Hagedorn 1910d: 85, Schedl 1948b: 27.

References: (**ds**) Calwers 1884, 1893; Gemminger & Harold 1872: 2695; Gozis 1875: 80; Heyden, Reitter, & Weise 1883: 181; Semenov 1904: 38. (**tx**) Balachowsky 1949a: 76; Chapuis 1869: 59, 1873: 267; Eggers 1942d: 280–281; Hagedorn 1910d: 85; Schedl 1934f: 1633, 1948b: 27; Semenov 1904: 38.

bicallosus Eggers 1933: 75. Holotype ♂; Sagvar, Ungarn; USNM, Washington. Synonymy: Eggers 1942d: 283.

References: (**ec**) Schimitschek 1964. (**tx**) Anderson, W. H. & Anderson 1971: 6; Balachowsky 1949a: 77; Eggers 1933: 75, 1941: 124, 1942d: 280, 283; Endrodi 1957: 420; Schedl 1947c: 62, 1948b: 27; Sokanovskii 1954: 14.

***marginatus* Chapuis** 1869: 56. Holotype ♀; Yucatan, Mexico; IRSNB, Brussels.

Distribution: North America (Guatemala/ Yucatan in Mexico), South America (Venezuela).

References: (**ds**) Blackwelder 1947: 788; Blandford 1896e: 121–122; Butovitsch 1929: 8; Ferrer 1942; Gemminger & Harold 1872: 2695; Hagedorn 1910d: 85; Kleine 1913b: 151, 1914b: 353, 365; Wood, S. L. 1982b: 449. (**tx**) Blandford 1896e: 121–122; Butovitsch 1929: 8; Chapuis 1869: 56, 1873: 56; Eggers 1933b: 1; Hagedorn 1910a: 123; Schedl 1937h: 155, 163, 1940a: 329; Wood, S. L. 1982b: 449.

productus Hagedorn 1905: 547. Holotype ♂; San Esteban, Venezuela; MNHN, Paris. Synonymy: Eggers 1933b: 1.

References: (**ay**) Butovitsch 1929: 9. (**ds**) Butovitsch 1929: 9; Hagedorn 1910d: 85; Kleine 1913b: 152, 1914b: 340. (**tx**) Butovitsch 1929: 9; Eggers 1933b: 1; Hagedorn 1905: 547, 1910a: 123.

***monticolae* (Swaine)** 1917: 32 (*Eccoptogaster*). Lectotype ♀; Arrowhead, British Columbia [Canada]; CNCI, Ottawa, designated by Bright 1967b: 674.

Figures: Edson 1967: 46 (adult), 57 (galleries).

Distribution: North America (British Columbia in Canada/ W Montana, Washington in USA).

Hosts: *Pseudotsuga menziesii*, rare in *Pinus monticola*.

References: (**ay**) Butovitsch 1929: 8. (**cn**) Doane et al. 1936; Essig 1926: 512, 1958: 512; Hatch 1938: 193; Keen 1952c: 158; Swaine 1918a: 53. (**ec**) Bedard 1933a; Chamberlin 1918a: 28. (**hb**) Chamberlin 1939: 228, 1958: 44; Doane et al. 1936; Edson 1967: 18; Essig 1926: 512, 1958: 512; Keen 1952c: 158; McMullen & Atkins 1959b: 416; Swaine 1918a: 53; Wood, S. L. 1982b: 435. (**ds**) Bedard 1938a; Blackwelder 1939; Butovitsch 1929: 8; Chamberlin 1918a, 1939: 228, 1958: 44; Edson 1967: 18; Essig 1926: 512, 1958: 512; Gast et al. 1989: 385; Hopping 1922; Keen 1929a: 13, 1952c: 158; Kleine 1934a: 169; Leng 1920: 337; McComb et al. 1953: 4; McMullen & Atkins 1962a: 22; Patterson & Hatch 1945: 148; Schuder 1969: 81; Thatcher 1935: 261; Wood, S. L. 1948: 10, 1951a: 127, 1982b: 435. (**tx**) Blackman 1934: 6–7, 15–16; Bright 1967b: 674; Butovitsch 1929: 8; Chamberlin 1939: 228, 1958: 44; Edson 1967: 18, 46; Hoebeke 1978; Keen 1929a: 13; de Ruette 1970: 101; Swaine 1917: 32, 1918a: 52–53; Wood, S. L. 1966b: 30, 1970: 101, 1982b: 435. (**ms**) Hatch 1938: 193.

***morawitzi* Semenov** 1902: 267. Holotype ♀; Petrovsk-Zabaikalye, in syst. fluvii Baleaga, Zabaikalye, USSR; not located.

Figures: Michalski 1973a:pl. 42, Tsai & Li 1959: 78, Yin, Huang, & Li 1984: 37.

Distribution: Asia (Heilongjiang in China/ E USSR).

Hosts: *Larix gmelinii, L. siberica, L.* spp., *Pinus koraiensis*.

References: (**ay**) Butovitsch 1929: 8, 48–49. (**bv**) Grune 1970: 39; Rozhkov 1970: 133. (**cn**) Esterberg 1959; Kontkanen 1932: 62; Kurenzov 1935c: 188; Plorov 1948: 55; Yanovskii & Korotkov 1984. (**ec**) Kurenzov 1934a: 57; Lindeman 1961: 99; Yanovskii & Korotkov 1984. (**hb**) Isaev 1966: 53–58; Kurenzov 1935a: 19, 24, 1948b: 102, 1950d: 195; Lindeman 1978; Postner 1974: 387; Rimski-Korsakov et al. 1949: 300; Rozhkov 1970: 133; Stark 1952: 137; Vitomskii 1928a: 178–184; Yin, Huang, & Li 1984: 36. (**ds**) Butovitsch 1929: 8, 48–49; Esterberg 1959; Grune 1979: 39; Hagedorn 1910d: 85; Hansen, V. 1939; Hellen 1947; Klefbeck & Sjoberg 1960a: 228; Kleine 1913b: 151, 1914b: 250, 1934a: 169; Kontkanen 1932: 62; Krivolutskaya 1983; Kurenzov 1934a: 57, 1935a: 19, 24, 1935c: 188, 1936a: 114, 1936b: 351, 1938a: 65, 1965, 1967; Michalski 1973a: 124; Nuorteva 1971: 71; Postner 1974: 387; Rimski-Korsakov et al. 1949: 300; Rozhkov 1970: 133; Shirskaya 1961; Sokanovskii 1966: 390; Stark 1931a: 21, 1931d: 542, 1946: 595, 1952: 137; Strand 1946: 595; Yanovskii 1974, 1977a; Yanovskii & Dmitrienko 1983; Yanovskii & Tegshzhargal 1985: 405; Yin, Huang, & Li 1984: 36; Zinovjev 1955: 191. (**tx**) Butovitsch 1929: 8, 48–49; Eggers 1942c: 33–34; Grune 1979: 38–39; Hagedorn 1910a: 123; Kurenzov 1941a: 76–77, 1948b: 102; Michalski 1973a: 124–126, pl. 42; Postner 1974: 387; Reitter 1913a: 20; Schedl 1934f: 1632, 1948b: 16; Schmidt, G. 1980: 20; Semenov 1902: 267; Sokanovskii 1966: 390; Spessivtsev 1931: 18–19; Stark 1950: 224, 1952: 137–138; Tsai & Li 1959: 78; Tsai, Yin, & Huang 1962: 5, 9; Yin & Huang 1980: 48; Yin, Huang, & Li 1984: 36.

pini Eggers 1942c: 33. Holotype ♀; Ussuri (Samarga); Eggers Collection, in NHMW, Wien. Synonymy: Michalski 1973a: 124.

References: (**cn**) Archer 1866. (**ec**) Reid 1957c: 111. (**hb**) Stark 1952: 137. (**ds**) Sokanovskii 1966: 390; Stark 1952: 137. (**tx**) Eggers 1942c: 33–34; Michalski 1973a: 124; Pfeffer 1944a: 131; Schedl 1948b: 31, 1979c: 195; Sokanovskii 1966: 390; Stark 1952: 137. (**ms**) Pfeffer 1944a: 131.

***multistriatus* (Marsham)** 1802: 54 (*Ips*). Syntypes, sex?; England; not located, possibly in BMNH, London.

Figures: Balachowsky 1949a: 23, Barbey 1925: 601, Bevan 1987: 115, Borror & DeLong 1954: 423, Michalski 1973a:pl. 9.

Distribution: Africa (Algeria/ Morocco), Asia (Iran/ Turkey/ E USSR), Australia (introduced), Europe (Austria/ Belgium/ Bulgaria/ Czechoslovakia/ Denmark/ England/ France/ Germany/ Greece/ Hungary/ Ireland/ Italy/ Luxemburg/ Netherlands/ S Norway/ Poland/ Portugal/ Romania/ Sardinia/ Spain/ S Sweden/ Switzerland/ W USSR/ Yugoslavia), New Guinea (intercepted, introduced?), North America (introduced into S Canada and all states of USA).

Hosts: *Ulmus* spp., rare in other hosts.

Notes: (3) Eichhoff 1880: 41, 160 (named an aberration or var. *triornatus*, no status in nomenclature). From 1920 to 1990, hundreds of articles that are not listed here appeared in popular and semi-scientific journals and treated this species and Dutch elm disease; most of these are listed in the Experiment Station Record and the Insect Pest Review.

References: (**ay**) Angst 1981; Baker & Estrin 1974; Beard et al. 1941; Blight, Henderson, & Wadhams 1983; Butovitsch 1929: 8, 24–25; Cernigliaro & Kocienski 1977; Chararas 1956a; Chararas, Chipoulet, & Courtois 1979; Chatterjee 1971b; Choudhury 1979; Doskotch, Mikhail, & Chatterjee 1973; Elliott, W. J. & Fried 1976; Esch-

erich 1923b: 477, 494; Ferkovich & Norris 1971; Francke-Grosmann 1959; French, D. W. & Marinos 1970; Gahan 1900; Galford 1972; Grant, A. J. & Lanier 1982; Grove 1983; Henderson & Wadhams 1981; Jefferies & Fairhurst 1982; Jumper & Cannon 1975, 1976; Kaston 1936; Kudon & Berisford 1981; Meyer 1975; Norris 1987; Page, R. E. & Willis 1983; Pantyukhov 1958; Peacock & Kleiner 1968; Scholz 1905: 144; Sinanuvong, Knowles, & Kearby 1971; Thomas, J. B. 1967. (**bv**) Al-Azawi 1960; Angst et al. 1982; Baker, J. E. 1969, 1970; Baker, J. E. & Norris 1967, 1968a, 1968b; Baker, J. E. et al. 1968; Barger 1979; Barger & Cannon 1987; Barger, Cuthbert, & Robertson 1971; Barger, Cuthbert, & Seegrist 1973; Barr, B. A. 1969: 643; Bartels & Lanier 1974; Beck 1978; Bevan & Davies 1972: 102; Birch 1979; Birch et al. 1979; Blight 1981; Blight, Fielding et al. 1982, 1983; Blight, Henderson, & Wadhams 1983; Blight, Henderson et al. 1982; Blight, King et al. 1980; Blight, Ottridge et al. 1980; Blight, Wadhams et al. 1981; Borden 1984; Borg & Norris 1971a, 1971b; Bosman & Weyeraan 1969; Bouchard 1975; Boutz, Brewer, & Bishop 1985; Brasier 1983: 100; Brues 1946; Bucher 1963: 134; Burdekin 1978, 1979; Burks 1979: 798, 1019; Bushing 1965: 466; Byers, Svihra, & Koehler 1980; Cannon, Jr. 1985; Cernigliaro & Kocienski 1977; Chararas 1980b: 562; Chararas et al. 1982: 1094; Chatterji 1971b; Choudhury 1979; Choudhury & Kennedy 1980; Collins 1938; Cuthbert & Peacock 1975, 1977, 1978, 1979; Cuthbert, Peacock, & Wright 1983; Dahle 1965b; Daterman 1979; Davidson et al. 1964; Dethier 1947; Dixon, E. B. 1964; Doskotch, Chatterji, & Peacock 1970; Doskotch, Mikhail, & Chatterji 1973; Du 1987; Elliott, E. W., Lanier, & Simeone 1975; Elliott, W. J. et al. 1979; Elliott, W. J. & Fried 1976; Ferkovich & Norris 1971; Frater 1979; French, J. R. J., Robinson, et al. 1984; French, J. R. J., Rose, & Robinson 1977; Gardiner 1979; Gerken et al. 1978; Gilbert & Norris 1968; Gilbert, Baker, & Norris 1967; Goeden & Norris 1964a: 146; Gore 1975b; Gore & Armitage 1976; Gore, Pearce, & Silverstein 1975, 1976; Gore et al. 1977b; Grant, A. J. & Lanier 1982; Grove 1983; Grune 1979: 33; Hajek & Dahlsten 1985a; Hart, J. H. et al. 1967; Helbig 1984; Hoffmann & Helbig 1981; Hoffmann & Moses 1940; Hynum & Berryman 1980: 185; Inscoe 1982; Jacobson 1972; Jefferies & Fairhurst 1982; Kaston & Riggs 1938: 467; Kennedy, B. H. 1984; Kirby, S. G. & Fairhurst 1981b, 1983; Klassen, Ridgway, & Inscoe 1982; Klimetzek & Kopp 1983; Koehler, C. S. et al. 1979; Kozlowski 1969; Lagrange et al. 1982; Lanier 1978, 1981a, 1983b; Lanier & Burns 1978; Lanier & Jones 1985; Lanier, Silverstein, & Peacock 1976; Lanier et al. 1977; Loschiavo 1963; Loschiavo, Beck, & Norris 1963; Lyons & van Baren 1984; Maksimovic 1979a; Manojlovic 1986b; Marino & Abe 1981; McMullens & Atkins 1962a: 24; Meixner 1937: 1217; Meyer 1975; Meyer & Norris 1967a, 1967b, 1974; Michalski 1959c: 167; Millar et al. 1986; Minks & van Deventer 1978; Mori 1976b, 1977a; Mori & Iwasawa 1980a, 1980b; Norris 1964: 117–124; Norris & Baker 1967; O'Callaghan 1982a; O'Callaghan, Gallagher, & Lanier 1978, 1980; Paine, Birch, & Miller 1984; Payne & Wood 1981: 492; Peacock 1971, 1974, 1975, 1979; Peacock, Kennedy, & Fisk 1967, 1968; Peacock, Wright, & Ford 1984; Peacock et al. 1971, 1973, 1975; Pearce 1975b; Pearce, Gore, & Silverstein 1976; Pearce et al. 1975; Pignatello & Grant 1983; Pirone, Dodge, & Rickett 1980: 705; Plummer et al. 1976; Pougny & Sinay 1982; Rabaglia & Lanier 1983, 1984; Raffa & Berryman 1982a: 98; Riedl & Butcher 1975a; Roelofs 1978; Roling & Kearby 1975b, 1977; Silverstein & Young 1976: 21; Stewart, T. E. et al. 1977; Svihra 1981, 1983, 1987; Svihra & Clark 1980; Svihra & Koehler 1981, 1982; Svihra & Volney 1983; Turnbow & Franklin 1980; Vite et al. 1976; Wadley & Wolfenbarger 1944: 299; Walker, C. 1974; Walker, C. & Ross 1975; Weaver, N. 1978b; Weber, R. & Schurig 1984; Wester & Jylkka 1963; Wolfenbarger 1946: 59; Wollerman 1979a, 1979c; Wood, D. L. 1967b, 1978, 1979a. (**cn**) Abell 1935: 82; Acatay 1943a: 56; Acloque 1914; Aerts 1921; Al-Azawi 1960; Al-Azawi & Casida 1958; Al-Azawi & Norris 1959; Al-Azawi, Norris, & Casida 1961; Alexander 1944: 41; Allington 1958, 1959; Anderson, R. F. 1960: 238; Andrew et al. 19..; Andrianova 1950; Androic 1966: 46; Annand 1941, 1942, 1943, 1944: 39, 1945, 1946, 1947a, 1947b; Anonymous 1921j: 72, 1931d: 45, 1937b: 8, 1939: 644, 1940i: 580, 1941i: 811, 1954a: 1, 1955e: 32, 1955f: 3, 1955j: 12, 1958e: 154, 1960j: 22, 1960q, 1961h, 1961m, 1961p, 1961t, 1962h, 1962n, 1962z, 1963j, 1963y, 1964h, 1964u, 1965b, 1965f, 1965r, 1965t, 1966d, 1966f, 1966k, 1966m, 1966u, 1967f, 1967j, 1967k, 1967t, 1968g, 1968k, 1968p, 1969e, 1969m, 1970h, 1970t, 1971e, 1971g, 1971n, 1971v, 1972f, 1972t, 1973b, 1974d, 1974e, 1975d, 1975p, 1976e, 1976f, 1976h, 1976m, 1977i, 1977x, 1978e, 1979d, 1982c, 1985: 29; Appleby 1976: 47; Archer 1866; Arciero 1979; Arnoldi et al. 1955: 656; Austara et al. 1983; Baader 1981; Baker, R. M. 1936: 4; Baker, W. C. 1941; Baker, W. L. 1972: 235; Balachowsky 1951; Banfield 1968; Barbey 1925: 601; Barger 1948, 1950, 1976, 1978a, 1978b, 1979, 1984; Barger & Cuthbert 1971; Barger, Cuthbert, & Cannon 1984; Barger & Hock 1971; Barker 1958: 269; Bates 1949; Beal 1958; Beattie 1931, 1934: 569–570; Becker, W. B. 1936: 50, 1937b: 56, 1944, 1945a, 1945b, 1946a, 1946b, 1947, 1948, 1949, 1950, 1953b, 1955b, 1960, 1964b, 1965, 1967a, 1967b, 1968; Becker, W. B. & Mankowsky 1965; Becker, W. B. & Tomlinson 1938; Becker, W. B. et al. 1956; Beckmann 1959; Beckwith & Anderson

1956: 25; Beckwith & MacAlonely 1954, 1955: 8; Bellevoye 1896; Benton 1951; Berisford et al. 1980; Bevan 1987: 121; Bevan & Davies 1972: 102; Birch 1979; Birch, Miller, & Paine 1982; Birch, Paine, & Miller 1981; Birch et al. 1977; Blackman 1950; Blagbrough 1952; Blatchford 1983: 29; Bliss 1981; Bloch 1937: 1, 4, 7, 1938: 169–177; Bongberg 1957; Boullard 1973, 1976; Boutz, Brewer, & Bishop 1985; Boyce 1938; Brasier 1983: 100; Bretz et al. 1945; Britton 1933: 388, 1934: 256; Britton et al. 1935: 296; Bromley 1944a, 1948, 1949, 1950, 1951b; Brown, R. C. 1954: 44; Browne 1968: 645; Buchanan 1964, 1965: 36; Bucholz 1943; Buisman 1928, 1931, 1933a, 1933b, 1934; Burdekin 1981; Burton 1937: 54; Bussmann 1949; Buth & Ellis 1981a; Butovitsch 1934; Byers, Svihra, & Koehler 1980; Cahill & Lister 1971; Campana 1953, 1954, 1955; Campana & Carter 1955; Campana & Stipes 1981; Cannon 1982; Cannon, Barger, & Groth 1985; Cannon & Worley 1976; Caroselli 1949; Carter 1951; Carter & Carter 1974; Ceballos & Cordoba 1945a; Chambers 1953; Chararas 1972; Chodjai 1963; Chorbadzhievo 1929; Claasen et al. 1935: 96; Clinton & McCormick 1935, 1936: 68; Collins 1935: 128–132, 1935: 193, 1938: 192–195, 1938b: 196–200, 1940, 1941; Collins et al. 1936: 169–176, 1942: 130; Comtois 1988: 173; Conklin 1951; Conners & Savile 1945; Connola et al. 1947b; Copley 1981; Coulson & Witter 1984: 539; Craighead 1941, 1942a, 1942b; Cuthbert & Peacock 1975; Cuthbert et al. 1970, 1973; Dance 1964; Daterman 1979; Daviault 1945a, 1945b; Davidson & Lyon 1979: 371, 1987: 401; Davidson et al. 1958, 1964; Dietrich 1949, 1956; Dimond 1954, 1955; Dimond et al. 1949; Doane 1958a, 1958b, 1962c; Doane et al. 1936; Dodd 1938, 1946; Dolph & Hadfield 1971; Dolph & Pettinger 1969: 10; Donley 1959a; Draghetti 1947; Drooz 1985: 352; Dvoreckaja 1952; Eckstein 1926: 576; Edelman & Malysheva 1959a, 1959b; Ehrenberg 1954; Eichhorn & Pschorn-Walcher 1971; Elliot & Mobley 1938; Elliott, K. R. & Hildahl 1963: 83; Engledow 1953; English 1954, 1958: 31; English & Decker 1954; Ermusch 1928; Escherich 1923b: 477, 494, 1959; Esterberg 1959; Euale et al. 1978; Fairhurst & Fairhurst 1981; Felt 1926: 47, 1933a, 1934b: 315–319, 1935: 231–236, 1937b: 458–461, 1937c: 1, 10, 1940, 1942, 1943; Felt & Bromley 1938: 124, 1941b, 1942, 1943, 1944; Felt & Rankin 1932: 219; Fettes 1964, 1967; Fiddick & van Sickle 1979: 16; Finnegan 1957; Finnegan & Sippell 1967; Fisher 1937c; Fox 1959; Fransen 1931b, 1933: 38, 1935a, 1935b, 1939a, 1939b; Fransen & Buisman 1935; Franz 1948e; French, D. W. & Marinos 1970; French, J. R. J., Robinson, & Minko 1982; French, J. R. J., Rosel, & Robinson 1977; Friend 1940, 1941: 322, 1942a: 466, 1943, 1944: 237, 1945; Fystro 1960; Gabler 1955; Gagnon 1964, 1967; Galford & Schreiber 1972; Garcia-Tejero 1955: 227; Gardiner 1976a, 1979; Gentry, G. R. et al. 1979: 778; Georgescu et al. 1957: 356, 444; Gibbs 1974; Gibbs, Brasier, & Burdekin 1973; Gibbs, Burdekin, & Brasier 1977; Goeden & Norris 1964b; Goidanich 1937; Goidanich & Goidanich 1934; Gold & Kiesling 1977; Gradojevic 1938; Grandi 1951; Gregg & Hadfield 1978: 21; Gyorfi 1946: 195, 1959; Hafstad 1958; Hafstad & Reynolds 1961a, 1961b; Halliday 1955; Hamel 1980: 759; Hamilton 1936: 159, 1937: 10, 1948; Hanson 1937; Hanula & Berisford 1982; Harris 1950; Hart, J. H. & Kennedy 1981; Hart, J. H. et al. 1967; Hasek 1961; Hastings, A. R. & Beroza 1961; Hastings, A. R. & O'Brien 1973: 62; Hedger 1979; Helberg 1979; Henderson & Mickle 1948; Hermann 1931; Herr 1955; Herrick 1935: 71–74; Hess 1900: 51; Hess & Beck 1914: 239, 1927: 294; Himelick & Neely 1961a, 1961b; Hiratsuka et al. 1982: 7; Holland 1971; Hord & Quicke 1956; Hostetler & Brewer 1976b; Hoyt 1950: 63, 1951b, 1953: 23; Hurford 1950: 36, 1951a: 4, 1951b: 39, 1952a: 103, 1952b: 5; Inglis 1937: 193; Ives & Wong 1988: 227; Jacobs 1937: 36; Johnson, D. W. & Minnemeyer 1976, 1977: 32; Johnson, W. T. & Lyon 1976: 218; Jones, P. 1977; Jones, T. H. 1939, 1947; Judeich & Nitsche 1895: 444, 472; Kailidis 1969a; Kaiser 1931; Kalandra & Pfeffer 1935: 6; Karnosky 1979; Kauschinger 1893: 193; Keenan 1946: 10–18; Keenan et al. 1948: 54; Kennedy, B. H. 1979; Kholodkovskii 1912: 290; King, C. J. 1979; King, C. J. & Fielding 1983; Kohler & Dooling 1978; Kondo 1977; Kondo & Huntley 1973; Kondo & Moody 1987: 29; Kondo & Taylor 1985: 19; Koning 1939: 2014; Koppen 1882: 250; Kovacevic 1957: 67, 69; Kowal 1959b: 162; Kraemer & Thompson 1959: 811; Krawczyk et al. 1982; Krivosheina & Tokgaev 1985; Kudela 1946b: 347; Lamdin, Eikenbary, & Sturgeon 1969; Langford 1950: 139; Lanier 1978, 1981a, 1982, 1989; Lanier & Jones 1985; Lanier, Silverstein, & Peacock 1976; Lavallee & Benoit 1978: 40; Lavallee, Bensoit, & Lachance 1981: 43; Laver 1935: 257; Leach 1940b: 227; Lehker 1957: 174; Lewis 1952: 134; Liese 1952: 59; Liese & Butovitsch 1931: 1111; Liming 1948: 18; Liming et al. 1949: 7; Lincoln 1967b: 4830; Lindgren et al. 1983: 311; Lindquist, O. H. & Syme 1981: 100; Lohrenz 1907: 48; Lokaj 1906: 21; Lustner et al. 1935: 81; MacAloney & Evan 1964; MacLaine 1934: 41; Magasi 1977, 1980, 1981a: 26, 1982, 1983, 1984, 1987: 26, 1988, 1989: 31; Magasi, Sterner, & Forbes 1977: 19; Magasi, Sterner, & Newell 1978: 27; Mahieu 1979; Maksimovic & Motal 1983; Maksimovic et al. 1971; Maloy & Inglis 1978; Marcu 1926c: 59, 1960; Marsden 1953; Marshall 1947: 6, 1950a: 62, 1950b: 62, 1951: 131; Martin 1936: 297–306, 1938a: 195; Martineau 1984: 220; Martineau & Lavallee 1971: 41, 1973: 44, 1974: 42, 1975: 47, 1977: 44; Martineau & Ouellette 1970: 41; Maslov 1971; Mathiesen

1950: 74; Matthysse 1959: 3; Matthysse et al. 1954: 739; May 1930: 142, 1934: 3, 1953: 60; May & Collins 1936: 51–54; Mazzone & Peacock 1985; Mazzone et al. 1981; McCallum et al. 1951: 4; McDaniel 1935: 142; McGuyan et al. 1952: 52, 1953: 56; McKenzie 1937: 11, 1945: 656; McKenzie & Becker 1937: 11–14; McNabb 1956: 355; Meserve 1947: 160; Metcalf & Flint 1939: 720, 1951: 798; Middleton 1934: 264, 1935: 82; Middleton et al. 1935: 138; Minks & van Deventer 1978; Mokrzecki 1926b: 4; Moody, B. H. 1988: 28; Moody, B. H. & Cerezke 1983: 10, 1984, 1985; Morling 1952: 339; Morris 1951: 52; Mumford 1960: 37; Munro 1936: 64; Myczkowski 1954: 635; Najda 1952: 114; Nash 1952: 123 in ed. 2; Neal 1979: 778; Neely 1978, 1984; Nickle 1967a; Nielson 1959, 1963; Nordin 1964; Norris 1959: 60, 1960: 1034, 1964, 1987; Nosek 1951: 110; Novak, V., Hrozinka, & Stary 1976: 109; Nusslin 1913: 232; O'Callaghan, Atkins, & Fairhurst 1984; O'Callaghan & Fairhurst 1981, 1983; O'Callaghan, Gallagher, & Lanier 1978, 1980; Ollieu & Mason 1968: 14; Osman 1937: 6; Ouellette 1984; Packard 1890: 860; Pady 1958: 402; Page, M. & Greene 1978; Paine, Birch, & Miller 1984; Pajares & Arevalo 1987; Pajares & Lanier 1989; Parker & Wilford 1948; Parker et al. 1941: 657, 1947: 5, 1948: 175; Patmore 1961; Paulian 1943: 316; Payne & Wood 1981: 492; Peace 1954: 155; Peacock 1974, 1975, 1981; Peacock & Cuthbert 1974, 1975; Peattie 1948: 23; Pechuman 1937: 12; Peterson, G. W. & Wysong 1965; Pfeffer 1979: 148; Pierce, W. D. 1917: 96; Pirone, Dodge, & Rickett 1960: 705; Plumb 1950a: 110, 1950b: 8; Poinar 1971; Pomerleau 1945: 116, 1947a: 102, 1961: 361; Potts 1949: 6; Quackenbush 1949: 354; Quattlebaum 1981; Randall et al. 1968: 349; Rankin 1949: 11; Rankin et al. 1941a: 548; Ratzeburg 1871a: 403, 1871c: 84; Readio 1935: 342; Reay 1969: 50; Reed 1947: 8, 1951: 103; Renlund 1971: 5, 1975: 5, 1976: 5; Rex 1943: 1, 1948: 1, 1952a: 110, 1952b: 1; Rex & May 1943: 89; Rexrode 1974; Rhumbler 1922: 274, 1927: 285; Richter 1934: 105; Riley 1952: 11; Robert 1947b: 1, 1958: 433; Robinson, L. A. & Dooling 1978: 12; Roelofs 1978; Roepke 1931: 162; Rose, Mrs. 1953: 58; Rose, A. H. 1967; Rose, A. H. & Lindquist 1982a, 1982b: 187; Rosel & French 1974; Roy 1948: 235; Roy et al. 1988; Rudinsky 1960a; Scanlon 1948: 13; Schimitschek 1927: 279, 1935b: 145–146, 1951a: 101, 1955a: 153, 1955c: 72; Schindler 1861: 18; Schlyter et al. 1987; Schmiege & Anderson 1958: 21, 1960: 16; Schread 1953: 29; Schroder 1974; Schuder 1953: 69; Schwartz 1975b: 14, 1979: 204, 1980: 201, 1982: 206; Schwerdtfeger 1944a: 172, 1957a: 181; Scott, King, & Walker 1974; Scott & Walker 1975; Scudder 1959: 62; Severin 1906: 401; Shaw 1958: 21; Shepard & Hurford 1952: 26; Sinclair, W. A. 1978; Sippel 1966; Sippel, Dance, & Rose 1966: 54, 1967: 63; Sippel, Gross, & Rose 1969: 62, 1971: 54; Sippel & MacDonald 1954b: 61, 1957: 49, 1958: 45; Sippel, MacDonald, & Rose 1960: 58, 1962: 70, 1963: 56, 1964: 56, 1965: 62; Sippel, Rose, & Gross 1970: 63, 1972: 61, 1974: 57, 1975: 66; Sippel, Rose, & Larsen 1968: 60; Sippel et al. 1954a: 66; Slander 1947b: 215; Smith, A. H. & Johnson 1985; Smith, C. C. & Forbes 1968; Smith, P. J. 1976; Smith, P. W. 1957: 9; Smucker 1942: 441; Spaic 1956: 88; St. George 1949: 98; Stefan 1961; Stefanov 1947: 8, 1951: 52; Stein, J. D. & Kennedy 1972: 119; Sterner & Davidson 1981: 34, 1983: 20; Stevens 1981; Strobel & Lanier 1981: 63; Strojny 1970; Strong 1935: 23, 1936: 28, 1937: 21, 1938: 19, 1939: 24, 1940: 25; Strong, Janes, & Morofsky 1955; Sueur 1954: 118; Sundaram 1976; Svihra 1980; Swaine 1918a: 51; Swingle 1950: 113, 1951: 56; Swingle & Whitten 1967; Swingle, Whitten, & Brewer 1949: 451; Swingle, Whitten, & Young 1949: 1–11; Syme & Nystrom 1988: 94; Takai, Kondo, & Thomas 1979; Thatcher, T. O. 1961; Thompson, H. E. 1965; Thompson, H. E., Pady, & Keen 1961; Thompson, H. E., Willis, & Keen 1978; Tilford 1958: 29; Torjan & Howard 1953: 486; Touhey & Bray 1961; True & Slowata 1939: 529; Trullinger 1949: 83; Tubeuf 1935: 72; Van Yahres 1948: 24; Vorontsov et al. 1987; Wachtl 1901: 381; Wade 1961; Walker, C. 1973a, 1974; Wallace 1941: 374, 1942: 537, 1943a: 288; Wallace & Beard 1943: 291; Wallace & Zentmyer 1944: 299; Wallner 1975; Wallner & Leeling 1968; Wallner, Leeling, & Zabik 1969; Walter et al. 1943: 5; Warner 1952: 55; Watson & Raizenne 1948: 45, 1949: 50; Webb 1948: 277; Webber 1981, 1982; Weber, H. 1926: 576; Weber, R. 1969; Weidhaas 1965, 1967; Weir & Applejohn 1972: 9; Weir & Lawrence 1975: 12; Weiser 1963b; Welch 1953: 641; Welch & Collins 1940: 10; Welch & Matthysse 1955: 3; Welch et al. 1934: 9, 1945: 7; Wells 1955: 15; Wester & Jylkka 1963; White 1933: 106, 1936: 323, 334; Whitten 1941: 2, 1942: 1, 1949: 6, 1953: 2, 1954: 36, 1956a: 1, 1956b: 3, 1956c: 9, 1960, 1964, 1967; Whitten & Baker 1939: 630, 1948: 43; Whitten & Parker 1946: 16; Whitten & Swingle 1939: 630, 1946: 16, 1948: 114, 1958: 3; Wichmann 1927b: 355; Wilcoxon & Hartzel 1935: 153; Williams, L. H. & Brown 1969; Willis, W. C., Kramer, & Thompson 1963, 1964, 1965; Wilson, C. L. 1961, 1962, 1963; Wilson, C. L., McDaniel, & Seymour 1961; Wilson, C. L. & Tucker 1966; Wilson, C. L., Tucker, & McDaniel 1967; Wilson, M. C., Schuder, & Provonsha 1982: 91; Wolfenbarger 1946: 59; Wolfenbarger & Buchanan 1939: 377; Wolfenbarger & Jones 1943: 399; Wolff & Krausse 1922: 70; Wollerman 1979c; Wood, D. L. 1979a; Wood, L. S. 1966; Wood, L. S., Kantack, & Helwig 1967; Wootten 1962; Worthley 1935a: 175, 1935b: 2, 1936: 177; Worthley & Liming 1935: 526; Wykoff et al. 1947: 33; Wyman 1948: 17; Wysong 1951: 34; Wysong,

D. S. 1967; Wysong, D. S. & Peterson 1966; Wysong, D. S. & Willis 1968; Yagdyev 1979, 1987; Yasinski & Pierce 1957: 15; Yde-Andersen 1982; Zakharov & Levkovich 1951: 300; Zentmyer et al. 1944: 1025; Zieger 1950b: 38; Zimmermann, G. & Bathon 1983; Zivojinovic 1963. (**ec**) Al-Azawi 1960; Andrew et al. 19..; Anonymous 1967w, 1968b, 1970f, 1971g, 1971s, 1974d; Apel 1983; Ashe 1934; Ashraf & Berryman 1969: 12; Baker, R.M. 1936; Baker, W. C. 1941; Baker, W. L. 1972: 235; Balazy 1965a; Balazy & Michalski 1960; Balazy et al. 1977; Beattie 1934b; Beaver 1967a, 1967c, 1974b; Becker, W. B. 1940a, 1943, 1945b, 1946b; Benson 1974; Benson & Walker 1974; Berisford et al. 1980; Boucek 1958; Bromley 1944b; Buchanan 1940b; Buchanan & Smucker 1942; Burks 1959; Buth & Ellis 1981a, 1981b; Callaham & Shifrine 1960: 146; Cannon, Jr. 1985; Carter 1952; Chararas 1956b, 1957d; Chodjai 1963; Claflin & Dooling 1973; Clausen 1978: 292; Collins 1935; Comtois 1988: 173; Cooreman 1963: 46; Crowson 1976, 1981a; Cuthbert & Peacock 1977, 1978; DeWitt 1958; Doane 1960; Doberski 1961; Donisthorpe 1933a; Drooz 1985: 352; Dvoreckaja 1952; Eichhorn & Pschorn-Walcher 1971; Elliot & Morley 1907; Elton 1970; Escherich 1935; Espanol 1967a; Euale et al. 1977, 1978, 1980; Fairhurst & King 1983; Finnegan & Sippel 1964; Francke-Grosmann 1931, 1959; Fransen 1933: 38, 1935b, 1937b, 1939a; Fry 1989: 18; Furniss, R. L. & Carolin 1977: 403; Gagnon 1964, 1967; Galford 1967a, 1967b, 1971; Galford & Schreiber 1972; Galoux 1947b; Gaumann 1946: 157; Gemma, Wasti, & Hartmann 1985; Gibbs 1974; Gibbs, Brasier, & Burdekin 1973; Gibbs, Burdekin, & Brasier 1977; Gillanders 1906; Giraud & Laboulbene 1877: 411, 427; Goeden & Norris 1964b; Gold & Kiesling 1977; Gouger, R. J. & Bray 1968; Graham 1956, 1967: 115, 1969: 877; Grootaert, Haghebaert, & Pollet 1987; Grove 1983; Gyorfi 1943: 83; Haeselbarth 1967; Hafstad 1958; Hajek & Dahlsten 1981, 1985a, 1985b; Hanover 1975; Heqvist 1963, 1967: 68; Hirschmann 1971b: 40; Hirschmann & Wisniewski 1982, 1983; Hirschmann & Zirngiebl-Nicol 1961; Hoffard & Coster 1976: 130; Holmes 1980; Hostetler & Brewer 1976a, 1976b; Houle, Hartmann, & Wasti 1987; Hubenthal 1902: 291; Hunt, D. J. 1972; Hunt, D. J. & Hague 1974a, 1974b; Hurlbutt 1967; Jacot 1934, 1936; Jamnicky 1957b: 18, 20, 1957c; Janes & Strong 1961; Janes, Strong, & Hart 1963; Jones, P. 1977; Jones, T. H. & Moses 1943; Jones, W. W. & Lanier 1977; Kailidis 1969a; Karnosky 1979; Kaston 1939: 3; Kaya 1984; Kennedy, B. H. 1970, 1974, 1979, 1981, 1984; Kennedy, B. H. & Galford 1972; Kennedy, B. H. & Roberto 1974; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1980a, 1983; Kirby, S. G. & Fairhurst 1981a, 1981b, 1982, 1983; Kleine 1908c: 177, 1909a: 43, 78, 1944: 73; Koehler, C. S. et al. 1979; Kokueva 1900: 569; Kolubajiv & Kalandra 1954: 30; Kondo & Huntley 1973; Kopyl 1983; Kostenko 1929; Kreig 1961: 200; Krezal 1959: 574; Kudon & Berisford 1981; Laidlaw 1932: 117; Lanier 1983b, 1989; Lanier, Schubert, & Manion 1988; Laumond & Ritter 1971; Lea & Brasier 1983; Leach 1940a: 15, 1940b: 227; Liming et al. 1951: 146; Lipa 1968; Lipa & Chmielewski 1977; Loschiavo 1963; Lozinskij 1966; MacVean & Brewer 1981; Madelin 1963: 244; Mahieu 1979; Maksimovic 1979a, 1979b, 1986a; Maksimovic & Motal 1981, 1983; Maksimovic et al. 1971; Maloy & Inglis 1978; Manojlovic 1986c; Marsh 1979: 148; Marshall 1978; Martin 1946a: 481; Massey 1960a, 1960c, 1969b, 1970; May 1934: 3; Mazzone et al. 1981; Mendel 1985; Merlin 1984; Metcalf & Flint 1939: 720, 1951: 798; Meyer 1934: 612; Meyer & Norris 1973; Michalski & Ratajczak 1989; Middleton 1935: 82; Moody, B. H. 1982; Mook et al. 1943: 76; Morton 1984; Moses et al. 1940: 201; Mozolevskaya et al. 1987; Norris 1977; Nosek 1951: 110, 1959a: 118, 1959b: 86; Novak, P. 1952: 411; Nunberg 1930: 204; Nuorteva 1957b: 66; Nusslin 1927: 285; O'Callaghan 1982a; O'Callaghan, Atkins, & Fairhurst 1984; O'Callaghan, Gallagher, & Lanier 1980; Oldham 1930: 241; Otten 1940: 197; Ouellette 1962; Ouellette et al. 1984; Pantyukhov 1958; Parker et al. 1941: 657, 1948: 175; Peace 1960: 5; Peacock 1975; Perris 1852: 497, 1856a: 243; Pesson et al. 1955: 316; Pfeffer 1928b: 2, 1943b: 179, 1979: 148; Phillipsen, Ascerno, & Landwehr 1986; Pirone, Dodge, & Rickett 1960: 705; Poinar 1971, 1975: 168; Poinar & Deschamps 1981; Pomerleau 1947a: 102, 1961: 361; Purrini 1977a; Rafes 1962; Rainey 1968; Rankin et al. 1941a: 548; Riedl & Butcher 1975b; Robert 1947b: 1; Roden 1981; Roepke 1946: 545; Rondani 1873: 162; Rossem 1979; Ruhm 1955c: 176, 1956b: 3; Rummukainen 1954: 27; Saunders & Norris 1961; Schaarschmidt 1959: 803; Schauff 1988; Scheidter 1936: 234; Schimitschek 1955a: 153, 1964e; Schlyter et al. 1987; Schreiber, Conway, & Peacock 1986; Schreiber & Peacock 1985; Schroder 1974; Schwerdtfeger 1944a: 172, 1957a: 181; Scott & Walker 1975; Sedlaczek 1935a: 156; Semedo 1961: 120; Sengonca & Leisse 1984; Severin 1899: 383; Shafer & Liming 1950: 1035; Silvestri 1911: 389; Sinclair, W. A. 1978; Singh 1977: 102; Sitowski 1930: 2; Smiley & Moser 1985; Smucker 1937: 140, 1940: 1052, 1942: 441; Stackman 1957: 245; Stark, R. W. 1982; Stefanov 1949a: 107; Steinhaus 1963: 354, 1967: 108; Stepanov 1951: 52; Strobel & Lanier 1981: 63; Svihra & Koehler 1981, 1982; Sweetman 1936: 108; Swingle & Whitten 1967; Szczepanski 1960a: 414; Tanada 1963: 440; Tehon 1940: 24; Teocchi 1964: 4; Thomas, J. B. 1972; Thomas, J. B. & Sullivan 1971; Thompson, H. E., Pady, & Keen 1961; Thompson, H. E., Willis, &

Keen 1978; Thompson, W. R. 1943: 106; Truchan 1970b; Truchan & Butcher 1970; Tudor 1969: 33; Turnau 1984; Vitzhum 1921b: 76, 1926: 463; Wadley & Wolfenbarger 1944: 299; Walker, C. 1973a, 1974; Walker, C. & Ross 1975; Walker, J. C. 1957: 318; Wallace & Beard 1943: 291; Walter 1935: 37; Watson & Sippel 1961; Webber 1969, 1981, 1982; Webber & Gibbs 1989; Welch, H. E. 1963; Wester & Jylkka 1963; Westerboer 1963: 391; Whitten 1948: 45, 1960, 1964, 1967; Wiackowski 1957a: 85; Wichmann 1916: 14, 1955a: 92; Wisniewski 1979b; Witcher & Zehr 1971; Wolfenbarger & Buchanan 1939: 377–381; Woodring 1966c: 133; Yde-Andersen 1982, 1983; Zimmermann, G. & Bathon 1983. (**hb**) Acatay 1943a: 56; Adeli 1972: 14; Aerts 1921; Allington 1958; Altum 1881c: 247, 1889c; Anderson, R. F. 1960: 238; Anonymous 1920: 125, 1971g, 1985: 29; Apel 1983; Ashe 1923; Baker, J. E. & Norris 1968b; Baker, R. M. 1936; Baker, W. L. 1972: 235; Balachowsky & Mesnil 1935; Barbey 1901: 16, 40, 1925: 601, 1942; Bargmann 1906; Bartels & Lanier 1974; Beard et al. 1941; Beaver 1967b: 159; Becker, W. B. 1935b, 1936, 1937b; Beffa 1949, 1961; Bevan 1987: 121; Birch et al. 1977; Blackman 1950; Bonnemaison 1953; Bosman & Weyeraan 1969; Brandt 1948; Bright 1976d: 38; Bright & Stark 1973: 14; Brown, L. R. 1965b; Browne 1968: 645; Brues 1947; Buchanan 1940b; Budge 1949; Budkov 1897; Buth & Ellis 1981a; C. 1928; Camurano 1884; Cannon, Jr. 1985; Cecconi 1906, 1924; Chamberlin 1939: 234, 1958; Chapman 1869c, 1911; Chararas 1972; Chittenden 1890; Chodjai 1963; Chorbadzhievo 1929; Choudhury & Kennedy 1980; Clausen 1978: 292; Clinton & McCormick 1935, 1936; Collins 1935, 1938a, 1938b; Collins et al. 1936; Comtois 1988: 173; Coulson & Witter 1984: 539; Cuthbert & Peacock 1979; Dallimore & Munro 1922; Davidson & Lyon 1979: 371, 1987: 401; Davidson et al. 1964; Decaux 1890d, 1890e, 1890f; Deyrup & Atkinson 1987a: 65; Dixon, E. B. 1964; Doane et al. 1936; Dombrowsky 1887, 1892; Drooz 1985: 352; Eckstein 1889, 1897, 1926: 576; Edelman & Malysheva 1959b; Eichhoff 1881a: 41, 159, 1882b: 707, 1882e: 322; Escherich 1923b: 477, 494; Everts 1900, 1903: 739; Fairhurst & King 1983; Felt 1926: 47; Felt & Rankin 1932: 219; Fisher 1931; Fox 1958; Fransen 1932, 1948; Fuchs 1904a; Furniss, R. L. & Carolin 1977: 403; Furst 1888: 626; Gabler 1955; Gahan 1900; Galford 1969a, 1971, 1976a; Gardiner 1981; Gibbs 1974; Gibbs, Burdekin, & Brasier 1977; Gillanders 1906, 1908; Girard 1873; Goeden & Norris 1964b; Goidanich 1946; Gouger, R. J. & Bray 1968; Grandi 1951; Grove 1983; Guran 1933; Gyorfi 1957; Hanula & Berisford 1984p; Hart, J. H. & Kennedy 1981; Henderson & Mickle 1948; Hennings 1908c: 211; Henschel 1876a: 205, 242, 1895a: 156; Herrick 1935: 71; Hess 1900: 51; Hess & Beck 1914: 239, 1927: 294; Hoffmann & Moses 1940; Hufnagl & Puzyr 1951: 103; Ives & Wong 1988: 227; Janes & Strong 1961; Janes, Strong, & Hart 1963; Joly 1950; Jones, T. H. 1939; Jones, W. W. & Lanier 1977; Judeich & Nitsche 1895: 444, 472; Kapler 1967; Karpinski 1933b: 23; Karpinski & Strawinski 1948: 153; Kaston 1939: 3; Kaston & Riggs 1938: 467–469; Kauschinger 1893: 193; Keller 1913: 242; Kholodkovskii 1912: 290; Kirby, S. G. & Fairhurst 1981a, 1981b, 1982, 1983; Kirkendall 1984: 237; Kleiner & Peacock 1971; Knotek 1894a: 557; Kondo & Huntley 1973; Kostin 1960: 129, 130; Kozlowski 1969; Krausse 1915: 156; Laidlaw 1932: 117; Lamdin, Eikenbary, & Sturgeon 1969; Lanier 1983b; Lengerken 1939: 50, 1954: 65; Lichtenstein 1918: 93; Lindemann 1881b: 171–173; Lohreng 1907: 48; Lozinskij 1966; Lunardoni & Leonardi 1889: 455; MacAloney & Ewan 1964; MacDougall 1900a: 359–364, 1917: 131; Madon 1930: 99; Makhmadzieev & Shukronaev 1983; Maksimovic 1979a, 1979b; Maksimovic & Motal 1981; Manojlovic 1986b, 1986c; Marcu 1941: 401; Martineau 1984, 1985: 220; Maslov 1963c; Masutti 1964; McDaniel 1935: 142; Merlin 1984; Metcalf & Flint 1939: 720, 1951: 798; Meyer & Norris 1973; Michalski 1959b: 162, 1959c: 167; Mozolevskaya et al. 1987; Munro 1926: 45; Nash 1952: 123 in ed. 2; Neumann & Minko 1985; Nordlinger 1856: 42; Norris 1961b, 1977; Nosek 1959a: 118, 1959b: 86; Novak, V., Hrozinka, & Stary 1976: 109; Nunberg 1929: 94; Nusslin 1898: 276, 1913: 232, 1927: 285; Orest 1926b: 81; Packard 1890: 860; Paine, Birch, & Miller 1984; Paulian 1943: 316; Pechuman 1938: 539; Perris 1852: 497, 1856a: 243; Peyerimhoff 1919: 249; Pfeffer 1942: 10, 1989a: 45; Pirone, Dodge, & Rickett 1960: 705; Postner 1974: 383; Rafes 1962; Ratzeburg 1837: 186, 1839: 228, 1871a: 403, 1871c: 84; Rhumbler 1922: 274, 1927: 285; Rimski-Korsakov et al. 1949: 301; Rose, A. H. & Lindquist 1982a, 1982b: 187; Rosel & French 1974; Rupertsberger 1880: 228; Schedl 1981b: 45; Scheidter 1936: 234; Schimitschek 1939c: 274, 1955a: 153; Schindler 1861: 18; Schwerdtfeger 1944a: 172, 1957a: 181, 1981: 187; Sedlaczek 1935a: 156; Semedo 1961: 120; Silvestri 1911: 389; Smith, J. B. 1886: 127; Spessivtsev 1913a: 30; Stark 1926a: 331, 1952: 97; Stark, R. W. 1982; Stefanov 1949a: 107; Stein, J. D. & Kennedy 1972: 119; Stellwaag 1931: 94; Strojny 1970; Strong, Janes, & Morofsky 1955; Svihra 1981, 1987; Svihra & Koehler 1982; Svihra & Volney 1983; Swain 1948: 155; Swaine 1918a: 51; Taschenberg 1880: 243; Thatcher, T. O. 1961; Thomas, J. B. & Sullivan 1971; Thompson, H. E., Pady, & Keen 1961; Thompson, H. E., Willis, & Keen 1978; Tschorbadjiev 1929: 158; Wachtl 1901: 381; Wallace 1940: 293, 1943b: 290; Wallace & Beard 1942: 86; Weber, H. 1926: 576; Weber, R. 1969; White, R. E. 1983; Whitten 1953: 2, 1960, 1964, 1967; Wichmann 1916: 14, 1927b: 355; Williams, L. H. & Brown

1969; Wolff & Krausse 1922: 70; Wollerman 1974; Wood, S. L. 1982b: 430. (**ds**) Acciavatti & Walters 1977; Acloque 1896, 1914; Adeli 1972: 14; Andersch 1851; Anderson & Schmiege 1959; Anderson, R. F. 1960: 238; Androic 1966: 46; Annand 1944: 39; Anonymous 1961m, 1961p, 1961t, 1962n, 1962z, 1963j, 1963y, 1964h, 1964u, 1965b, 1965f, 1965r, 1966d, 1966f, 1966k, 1966m, 1966u, 1967f, 1967j, 1967k, 1967t, 1968g, 1968p, 1969e, 1969m, 1970h, 1972t, 1973b, 1974e, 1975d, 1975p, 1976e, 1976h, 1976m, 1977i, 1977x, 1978e, 1979d, 1982c; Armitage 1951: 115, 1952: 183, 1953: 171, 1954: 136; Audras & Schaefer 1957; Balachowsky 1944b, 1951; Balachowsky & Mesnil 1935: 22; Balazy & Michalski 1960; Barger & Hock 1971; Barthe 1896; Bau 1888; Beattie 1934a, 1934b, 1935; Becker, W. B. 1935a: 833, 1936, 1938, 1939a, 1940a, 1941, 1943, 1944; Becker & Tomlinson 1938: 323; Beckwith 1953: 973; Bedel 1888a, 1888b: 388, 406; Beffa 1949; Benavides 1961: 17; Bielz 1851, 1887; Blackman 1950; Blackwelder 1939; Blanchere & Robert 1889; Blandford 1895b; Blatchley & Leng 1916: 588; Bongberg 1957; Borchert 1951; Borg 1970b; Borg & Norris 1971a, 1971b; Brakman 1966b: 203; Brancsik 1871, 1906; Bretz et al. 1945; Bright 1976d: 38; Bright & Stark 1973: 14; Brown, R. C. 1954; Browne 1968: 645; Buck 1949, 1955b: 191; Bucking 1932; Budkov 1897; Buisman 1931, 1932a, 1932b; Buresh & Lazarov 1956; Burgess 1912; Buth & Ellis 1981b; Butovitsch 1929; Calwer 1884, 1893; Campana 1953, 1954, 1955; Campana & Carter 1955; Carpentier & Delaby 1908; Carter 1951, 1952; Cecconi 1906; Chamberlin 1939: 234, 1958; Chapman 1870b, 1910: 63–68; Chapuis 1869: 55, 1873: 263; Chapuis & Candeze 1853; Chittenden 1890; Chodjai 1963; Chorbadzhievo 1929; Chrystal 1937; Claflin & Dooling 1973; Clinton & McCormick 1936; Cola 1973; Cooper 1935; Correa de Barros 1907; Crotch 1863; Crowson & Hunter 1964: 200; Cuthbert & Peacock 1975; Dallimore & Munro 1922; Davidson et al. 1958; DeWitt 1958; Deyrup 1981b: 5; Deyrup & Atkinson 1987a: 65; Dietrich 1936a: 217; Drooz 1985: 352; Easton 1936: 611–615; Eder 1934; Eggers 1904, 1912f; Endrodi 1958a, 1958b; Ericson & Sandin 1893; Escalera 1919; Escherich 1923b: 477, 494, 1932b; Esterberg 1928, 1959; Everts 1900, 1922: 636, 1925; Eyquem 1891; Felt 1926: 47, 1937a; Felt & Rankin 1932: 219; Forster 1849: 440; Fowler 1891; Fuchs 1904a, 1905a; Furniss, R. L. & Carolin 1977: 403; Gabler 1949b; Gast et al. 1989: 385; Gaubil 1849: 127; Gemminger & Harold 1872: 2695; Gentry 1955; Gerhardt 1911b; Goeden & Norris 1964b; Gozis 1875: 80; Gredler 1866: 372; Grill 1895: 313; Grune 1979: 33; Guran 1933; Hagedorn 1910d: 85; Hamilton 1936: 159; Hansen, V. 1939, 1956; Hellen 1947; Henschel 1895a: 156; Heyden 1898: 76; Heyden, Reitter, & Weise 1883: 181, 1891: 670, 1906: 708; Hickin 1963; Hill, D. S. 1987: 337; Hoffmann 1940: 54, 1942: 12; Hoffmann & Moses 1940: 818–819; Hollister 1920: 145; Holmes 1956, 1958; Hord & Quike 1956; Horion 1935, 1951; Hormuzaki 1891: 174; Hostetler & Brewer 1976; Jacentkovsky 1912: 286, 1933: 18; Johnson, W. T. & Lyon 1976: 218; Jones, P. 1977; Judeich & Nitsche 1895: 444, 472; Kaltenbach 1874: 535; Karpinski 1925: 215, 1931: 18, 21, 1932b: 52, 1933b: 23; Karpinski & Strawinski 1948: 153; Kaston 1938: 240; Kestercanek 1881a: 11–12; Kirk 1969, 1970; Klefbeck & Sjoberg 1960; Kleine 1912a: 262, 267, 1913a: 34, 1913b: 151, 1914a: 16, 19, 1914b: 249, 399, 1934a: 169; Knotek 1892a: 36, 1894a: 557; Knull 1934a: 865–866; Koca 1905: 192; Kolubajiv 1934: 65; Koppen 1882: 250; Kostenko 1929; Kovacevic 1957: 67, 69; Kraatz 1869: 59; Kraemer & Thompson 1959: 511; Kudon & Berisford 1981; Kurir 1947c: 24; Lacordaire 1866: 387; Langhoffer 1915c: 156; Leclercq 1971; Lehker 1957: 174; Leng 1920: 337; Lentz 1857: 140; Liegel 1886: 43; Liming 1932: 17; Lindemann 1884b: 264; Lindquist, O. H. & Syme 1981: 100; Lomnicki 1913b: 147; Lucht 1987: 275; Lunardoni & Leonardi 1889: 455; Marcu 1926c: 59; Marlatt 1912: 76; Mast 1962; Matthews & Fowler 1883: 42; Meinert 1887: 70; Michalski 1957a: 73, 1959c: 162, 1973a: 43; Morris 1951: 52; Mumford 1960: 40; Negru 1957: 129, 1966b: 398, 1968a: 453; Negru & Rosca 1967: 141, 147; Norris 1970; Norris et al. 1970; Nosek 1958b: 93; Novak, P. 1952: 411, 1964; Nunberg 1928b: 87, 93, 1954: 89; Nusslin 1898: 276; O'Callaghan 1982b; O'Callaghan, Gallager, & Lanier 1980; Orest 1926c: 59; Palm 1959: 28–29; Pascovici 1962; Pechuman 1937: 13; Perris 1876a: 254, 1877a: 414; Peyerimhoff 1919: 249; Pfeffer 1928b: 2, 1931b: 73, 1947d: 126, 1989a: 45; Pierce, W. D. 1917: 96; Pittioni 1943: 174; Pomerleau 1961: 361; Postner 1974: 383; Powell, J. A. & Hogue 1979: 313; Ragusa 1924: 114; Randall et al. 1968: 349; Rapp 1934: 718; Ratzeburg 1837: 186, 1839: 228; Readio 1935: 341–352; Redtenbacher 1858: 838, 1874: 372; Reed 1951: 103, 1955: 882; Reed & Bruer 1956: 756; Reitter 1869b: 153, 1894a: 44, 1916: 272; Revy & Siroki 1942: 82; Rimski-Korsakov et al. 1949: 301; Rohrig 1955: 37; Rosel & French 1974, 1975; Roubal 1935b: 72, 1941: 254; Ruskov 1928c: 60; Sainte-Claire & Mequignon 1938: 443; Schaufuss 1915: 1205; Schaum 1859: 95, 1862: 100; Schedl 1964j, 1967c: 68, 1971b: 529, 1971d: 427, 1977d: 281, 1979a: 161, 1980a: 3, 1981b: 45; Schevyrew 1890c: 470; Schilsky 1891: 157, 1909: 187; Schimitschek 1937: 43, 1951a: 101; Schiodte 1873: 105; Schmiege & Anderson 1960: 16; Schneider & Farrier 1969: 412; Schroeder & French 1961; Schwerdtfeger 1981: 187; Seidlitz 1872: 390, 1891a: 557, 1891b: 603; Semedo 1961: 120; Sharp & Fowler 1893: 34; Smith, J. B. 1886: 127; Soka-

novskii 1966: 381, 387; Stark 1926a: 331, 1926b: 101, 1926j: 123, 1927b: 86, 1952: 97; Stein 1868: 113; Stein & Weise 1877: 164; Stellwaag 1931: 94; Stephens 1829a: 146; Sterner, Newell, & Tibus 1976; Stierlin 1898: 436; Svihra 1980; Svihra & Volney 1983; Syme & Nystrom 1988: 94; Teocchi 1965b; Thatcher, T. O. 1961; Thomas, J. B. 1971a; Thomas, J. E. & Bower 1962; Thomas W. D. et al. 1948: 317; Thomson 1865: 375, 1868: 224; Tredl 1907: 6; Tschorbadjiev 1929: 158; Turnbow & Franklin 1980; Wallace 1940: 293; Watson & Sippel 1961; Westhoff 1882: 238; Wichmann 1927a: 51–52, 1955a: 92; Willis, W. C., Kramer, & Thompson 1963, 1964, 1965; Wilson, C. L., Tucker, & McDaniel 1967; Winter, T. G. 1983: 44; Wood, S. L. 1972a: 396, 1977a: 72, 1982b: 430; Wysong, D. S. & Peterson 1966; Wysong, D. S. & Willis 1968; Zinovjev 1955: 191. (**tx**) Acloque 1898; Anderson, R. F. 1960: 238; Anderson, W. H. & Anderson 1971: 23; Anonymous 1974d; Apel 1983; Bach 1854; Baker, W. L. 1972: 236; Balachowsky 1944a: 167, 1944b: 8–10, 1949a: 63; Barbey 1901: 16, 40; Beaver 1970b; Bedel 1888b: 388, 406; Beffa 1949, 1961; Benoit 1986: 238; Bertolini 1872; Blackman 1934: 10; Blandford 1895b; Blatchley & Leng 1916: 588; Borron & DeLong 1954; Brancsik 1871; Bright 1976d: 28–29, 38; Burton et al. 1968: 191; Butovitsch 1929: 5, 24–27; Calwer 1858; Carne et al. 1980; Carpentier & Delaby 1908; Ceballos 1945; Chamberlin 1939: 234, 1958; Chapman 1910; Chapuis 1869: 55, 1873: 263; Chapuis & Candeze 1853; Chevrolat 1838; Copley 1981: 62; Csiki 1906; Davidson & Lyon 1979: 372; Davidson et al. 1964: 4; Desbrochers 1891; Dombrowsky 1887, 1892; Duffy 1953; Edwards 1959; Eggers 1910f: 557–558, 1912f: 29, 1913a: 285–286, 1914: 39, 108–109, 184–185, 1922d: 116–117; Eichhoff 1864b: 32, 1881a: 41, 159–160, 1883a: 105, 130; Endrodi 1957b; Erichson 1836: 59; Escherich 1923b: 477, 494; Escherich & Escherich 1892; Everts 1903: 739, 1922: 636; Fauvel 1889; Ferrant 1911; Finnegan & Sippel 1964: 4; Fleischer 1905; Formanek 1907; Fransen 1948; Furniss, R. L. & Carolin 1977: 405; Gabler 1949b, 1955; Gentry 1954: 136; Gibbs 1974: 5; Gibbs, Burdekin, & Brasier 1977: 7; Gillanders 1908; Girard 1873; Grune 1979: 32–33; Hagedorn 1910a: 123; Hansen, V. 1956; Hart & Kennedy 1981: 3; Hasek 1961: 5; Henry 1892: 13; Henschel 1876a: 205, 242, 1895a: 156; Hoffmann 1939: 36–37; Iablokoff-Khnzorian 1961: 70; Ives & Wong 1988: 226; Jacentkovsky 1935: 18; Johnson, W. T. & Lyon 1976: 219; Judeich & Nitsche 1895: 444, 472; Karpinski & Strawinski 1948: 153; Knotek 1892a: 36; Kuhnt 1913: 1049; Lacordaire 1866: 387; Letzner 1844: 64, 1891: 374; Leunis 1886: 183; Lindemann 1881b: 171; Lindquist, O. H. & Syme 1981: 100; Lovendal 1898: 66; Lucht 1987: 275; Lunardoni & Leonardi 1889: 455; Marsham 1802: 54; Martineau 1984: 205; Meixner 1937: 1217; Metcalf 1942: 797; Michalski 1958: 162, 1962b: 201, 1967: 308–310, 1973a: 43–46, pl. 9; Muesebeck 1942: 100, 1950: 137; Murayama 1930: 9–10; Negru 1966b: 398; Nordlinger 1848: 252, 1856: 42; Novak, V., Hrozinka, & Stary 1976: 109; Nunberg 1954: 89; Pfeffer 1932b: 11, 1942a: 10, 1955a: 74–76, 1965: 61–62, 1989a:pl. 5; Porter 1932: 106; Portevin 1935: 311; Postner 1974: 383; Powell, J. A. & Hogue 1979: 313; Quaschik 1953: 35; Ratzeburg 1837: 186, 1839: 228; Redtenbacher 1849a: 361, 1849b: 27, 1858: 838, 1874: 372; Reitter 1894a: 44, 1913a: 24, 1916: 272; Rey 1892b: 30; Rhumbler 1922: 274, 1927: 285; Rose, A. H. & Lindquist 1982b: 188; Rupertsberger 1880: 228; Schedl 1934f: 1632, 1936: 8–9, 1948b: 61, 1952f: 86, 1962p: 201, 1964: 221–222, 1967: 68, 1980a: 3, 1981b: 45; Schevyrew 1893a: 109–111, 1883b: 51–64; Schimitschek 1955c: 72; Seidlitz 1872: 390, 1891a: 557, 1891b: 603; Semedo 1961: 120; Skalitzky 1876: 110; Sokanovskii 1954: 13, 1958: 37, 1966: 381–382, 387; Spessivtsev 1913a: 30–31, 1922a: 455, 491, 1931: 8; Stark 1952: 97–98; Stein, J. D. & Kennedy 1972: 121; Stephens 1829a: 146; Stierlin 1898: 436; Strong, Janes, & Morofsky 1955: 5; Svihra & Clark 1980; Swaine 1918a: 51; Syme & Nystrom 1988: 94; Taschenberg 1880: 243; Thomas, J. B. 1967; Thompson, H. E., Willis, & Keen 1978: 5; Thomson 1865: 375, 1868: 224; Titus, Meikle, & Harrison 1985: 116; Whitten 1960: 2; Wichmann 1913b: 210–211, 1916: 14; Wood, S. L. 1972a: 396, 1982b: 430. (**ms**) Anonymous 1965, 1985: 29; Ashby 1967; Bartlet 1948; Beal 1958; Beattie 1931; Birch 1979; Blight, Henderson, & Wadhams 1983; Block 1938a, 1938b; Borgreve 1882; Bromley 1951a; Bruggeman 1952; Buchanan & May 1941; Burdekin 1983; Burton 1937; Burton et al. 1968: 190; Cannon & Worley 1976; Chamberlin 1939: 234–235, 1958: 50; Chambers 1953; Craighead 1942b; Cuthbert, Peacock, & Wright 1983; Ehrenberg 1954; Escherich 1932b; Galford 1969a, 1971, 1976a; Gore & Armitage 1976; Gore, Pearce, & Silverstein 1975; Halliday 1955; Hamilton 1948; Helbig 1979, 1984; Herr 1955; Hoffmann & Helbig 1981; Holland 1971; King, C. J. & Fielding 1983; Lagrange et al. 1982; Liming 1948: 18; Liming et al. 1949: 7; Marino & Abe 1981; Matteson, Sadhu, & Peterson 1986; Merino-Rodriguez 1966: 42; Millers 1961; Mix 1952: 364; Moody, B. H. 1982; Mori 1976b, 1977a; Mori & Iwasawa 1980a, 1980b; Mori & Seu 1988; Morling 1952: 339; Nakagawa & Mori 1984; Patmore 1961; Peacock 1971; Peacock, Kennedy, & Fisk 1967, 1968; Pearce 1975b; Pearce, Gore, & Silverstein 1976; Pearce et al. 1975; Peattie 1948: 23; Plumb 1950b: 8; Pougny & Sinay 1982; Quackenbush 1949: 354; Quisumbing & Kydonieus 1982: 228; Redfern 1977: 108; Rex 1943: 1; Rose 1953: 58; Roy 1948: 235; Roy et al. 1988; Shaw 1958: 21; Stewart, T. E. et al. 1977;

Touhey & Bray 1961; Wallner 1975; Walter 1935: 37; Weber, R. & Schurig 1984; Wurster, Wurster, & Strickland 1965.

flavicornis Chevrolat 1829: 181. Syntypes, sex?; Pavis (Lombardy), Italy; presumably at Liege, not located. Synonymy: Hagedorn 1910d: 86, Schedl 1948b: 9.

References: (**hb**) Dombrowsky 1892. (**ds**) Dejean 1837; Schedl 1966f: 80, 1967d: 1, 1970e: 80, 1973a: 366, 1973d: 151, 1979e: 57; Stein & Weise 1877: 164. (**tx**) Butovitsch 1929: 9; Chevrolat 1829: 181; Dombrowsky 1892; Hagedorn 1910d: 86; Schedl 1948b: 9, 61.

ulmi Redtenbacher 1849a: 361. Syntypes, sex?; Austria; not located. Synonymy: Schedl 1948b: 9.

Notes: (3) Balachowsky 1949a: 64 (treated as a good species).

References: (**cn**) Marcu 1926c: 60. (**ec**) Fleischer 1911; Kleine 1908c: 177; Perris 1856a: 243; Pfeffer 1928b: 2. (**hb**) Dombrowsky 1892; Perris 1856a: 243; Rupertsberger 1880: 228; Stark 1952: 99. (**ds**) Calwer 1884, 1893; Eggers 1904; Gaubil 1849: 127; Gemminger & Harold 1872: 2696; Hagedorn 1910d: 89; Kestercanek 1881a: 12; Kleine 1913a: 34, 1913b: 152; Kraatz 1869: 59; Lacordaire 1866: 387; Marcu 1926c: 60; Orest 1926b: 81–87, 1926c: 60; Pascovici et al. 1963: 153–175; Perris 1872a: 254, 1877a: 414; Pfeffer 1928b: 2, 1931b: 73; Redtenbacher 1858: 838, 1874: 373; Reitter 1894a: 44; Roubal 1941: 254; Schaum 1859: 95, 1862: 100; Schilsky 1890: 196, 1909: 187; Stark 1952: 99; Stein 1868: 113; Stein & Weise 1877: 164; Tredl 1907: 7. (**tx**) Balachowsky 1949a: 64; Butovitsch 1929: 7, 25; Dombrowsky 1892; Hagedorn 1910a: 124; Lacordaire 1866: 386; Redtenbacher 1849a: 361, 1849b: 27, 1858: 838, 1874: 373; Reitter 1894a: 44; Rey 1892b: 30; Rupertsberger 1880: 228; Schedl 1934f: 1632, 1948b: 9, 61, 1952f: 99; Spessivtsev 1913: 32.

javanus Chapuis 1869: 56. Holotype, sex?; Java; IRSNB, Brussels. Synonymy: Schedl 1954a: 137.

References: (**ay**) Butovitsch 1929: 7. (**cn**) Kalshoven 1932: 242. (**ds**) Butovitsch 1929: 7; Gemminger & Harold 1872: 2695; Hagedorn 1910d: 84; Kalshoven 1932: 242; Kleine 1913b: 151. (**tx**) Butovitsch 1929: 7; Chapuis 1869: 56, 1873: 264; Hagedorn 1910a: 123; Schedl 1954a: 137.

orientalis Eggers 1910f: 557 (*Eccoptogaster*). Lectotype ♂; Elisabetpol, Caucasiae rossicae; USNM, Washington, designated by Anderson & Anderson 1971: 23. Synonymy: Schedl 1948b: 61.

References: (**ay**) Butovitsch 1929: 9. (**cn**) Arnoldi et al. 1955: 657; Chorbadzhievo 1929; Lozovoi 1948c: 364; Pfeffer 1979: 148; Yagdyev 1987. (**ec**) Lozovoi 1948c: 364; Mendel 1985; Pfeffer 1979: 148. (**hb**) Chorbadzhievo 1929; Kurenzov 1948c: 364; Tschorbadjiev 1929: 158. (**ds**) Buresh & Lasarov 1956; Butovitsch 1929: 9; Chorbadzhievo 1929; Iukhosvich 1958: 105; Kadyrov 1989; Kleine 1934a: 169; Pfeffer 1936: 90; Pjatnitskii 1930a: 163; Schaufuss 1915: 1206; Sokanovskii 1966: 387; Tschorbadjiev 1929: 158. (**tx**) Anderson, W. H. & Anderson 1971: 23; Butovitsch 1929: 9; Eggers 1910f: 557–558, 1913a: 285, 1914: 108, 184–185; Reitter 1913a: 25; Schedl 1934f: 1632, 1948b: 61, Schedl 1979c: 180–181; Sokanovskii 1954: 13, 1966: 387; Wichmann 1913b: 211.

nodifer Reitter 1913a: 24. Holotype ♂; Walachei, Romania; NHMB, Budapest. Synonymy: Schedl 1948b: 61.

References: (**ay**) Butovitsch 1929: 9. (**ds**) Butovitsch 1929; Schaufuss 1915: 1206; Sokanovskii 1966: 387. (**tx**) Butovitsch 1929: 9; Eggers 1913a: 285–286, 1914: 109; Reitter 1913a: 24; Schedl 1934f: 1632, 1948b: 61; Sokanovskii 1966: 387; Wood, S. L. 1982b: 430.

abhorrens Wichmann 1913b: 210 (*Eccoptogaster*). Holotype, sex?; Umgebung von Zara, Yugoslavia; (?) Muller Collection, Trieste. Synonymy: Schedl 1948b: 61.

References: (**ay**) Butovitsch 1929: 9, 27. (**ec**) Novak 1952: 411. (**ds**) Butovitsch 1929; Kleine 1913b: 151; Langhoffer 1915c: 156; Novak 1952: 411; Sokanovskii 1966: 387. (**tx**) Butovitsch 1929: 9, 27; Eggers 1914: 185; Schedl 1934f: 1632, 1948b: 61; Sokanovskii 1954: 13, 1966: 387; Wichmann 1913b: 210.

affinis Eggers 1914: 108 (*Eccoptogaster*). Holotype ♂; Mazedonien; USNM, Washington. Synonymy: Schedl 1948b: 61.

References: (**ay**) Butovitsch 1929: 6–7, 27, 43. (**cn**) Clinton & McCormick 1936; Leach 1940b: 227; Vajda 1952: 114. (ec) Escherich 1935; Leach 1940b: 227. (hb) Clinton & McCormick 1936. (**ds**) Buresh & Lazarov 1956; Butovitsch 1929: 6–7, 27, 43; Clinton & McCormick 1936; Kalandra & Pfeffer 1935: 1–17, 1936: 89; Schaufuss 1915: 1206; Sokanovskii 1966: 387; Sturm 1826: 194. (**tx**) Anderson, W. H. & Anderson 1971: 3; Butovitsch 1929: 6–7, 27, 43; Eggers 1914: 108–109, 184–185; Schedl 1934f: 1632, 1948b: 61; Sokanovskii 1954: 13, 1966: 387; Wichmann 1915b: 215.

therondi Hoffmann 1939: 36. Holotype, sex?; Nimes (Gard), France; MNHN, Paris. Synonymy: Schedl 1948b: 61.

Notes: (3) Balachowsky 1949a: 64 (treated as a good species).

References: (**ds**) Nosek 1958: 93; Sokanovskii 1966: 387. (**tx**) Balachowsky 1949a: 64; Hoffmann 1939: 36; Schedl 1948b: 61, 1954: 137; Sokanovskii 1954: 13, 1966: 387.

papuanus Schedl 1936d: 8. Syntypes, sex?; Kap Koenig Wilhelm, New Guinea; MNB, Berlin. Synonymy: Schedl 1962p: 201.

References: (**tx**) Schedl 1936d: 8–9, 1962p: 201, 1979c: 184.

***mundus* Wood** 1968b: 13. Holotype ♂; 18 km N Tlaxco (Tlaxcala), Puebla, Mexico; Wood Collection.
Figures: Wood 1968b: 12.
Distribution: North America (Mexico, Puebla in Mexico).
Hosts: *Abies religiosa*.
References: (**hb**) Atkinson et al. 1986: 26. (**ds**) Atkinson & Equihua 1985a: 80, 1985b: 232; Atkinson et al. 1986: 26. (**tx**) Wood, S. L. 1968b: 12–13.

***muticus* Say** 1824: 323. Syntypes, sex?; Missouri; Say Collection, lost.
Figures: Blackman 1922b:pl. 3, figs. 18, 23–24, Bright 1976d: 28, Wilson, Scuder, & Provonsha 1982: 67, 157.
Distribution: North America (District of Columbia, Florida, Illinois, Kansas, Kentucky, Maryland, Michigan, Mississippi, Missouri, New Jersey, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, West Virginia in USA).
Hosts: *Celtis occidentalis*, accidental in *Quercus* sp.
References: (**ay**) Boving & Craighead 1931; Butovitsch 1929: 8; Hopkins 1894g, 1906b: 145, 148. (**cn**) Anonymous 1960x; Beal & Massey 1945: 70–71; Blackman 1950; Chamberlin 1924; Doane et al. 1936; Herrick 1935: 107; Hopkins 1899b: 15; Johnson, D. W. & Creasap 1978a; LeBaron 1872(August): 10; Packard 1890: 612, 860; Riley 1873: 105, 108; Swaine 1918a: 51; Walsh 1867b: 58; Wilson, M. C., Schuder, & Provonsha 1982: 67. (**ec**) Burks 1979: 856; Bushing 1965: 466; Felt 1906: 725; Hopkins 1891b: 259; Galford 1969b; Marsh 1979: 158; Matthews 1970; Pierce 1908: 386; Post 1947: 129; Richerson, J. V. & Borden 1972a. (**hb**) Baker, W. L. 1972: 239; Beal & Massey 1945: 70–71; Blackman 1922b: 42–43, 1950; Bright 1976d: 32; Chamberlin 1939: 226; Chittenden 1890; Deyrup & Atkinson 1987a: 65; Doane et al. 1936; Drooz 1985: 356; Galford 1969b; Fox 1897; Herrick 1935: 107; Hopkins 1894g, 1899b: 15, 1904b: 320; Klages 1896: 12, 282, 1897: 90; Packard 1890: 612, 860; Pierce 1907: 293; Post 1947: 129; Smith, J. B. 1886: 127; Swaine 1918a: 51; Wood, S. L. 1982b: 426. (**ds**) Anonymous 1960x; Atkinson et al. 1991: 157; Beal & Massey 1945: 70–71; Blackman 1922b, 1950; Blackwelder 1939; Blatchley & Leng 1916: 590; Bright 1976d: 32; Butovitsch 1929: 8; Chamberlin 1939: 226; Chapuis 1869: 58, 1873: 266; Chittenden 1890; Deyrup 1981b: 5; Deyrup & Atkinson 1987a: 65; Dodge 1938; Drooz 1986: 356; Gemminger & Harold 1872: 2695; Hagedorn 1910d: 85–86; Hamilton 1895a: 378; Henshaw 1885: 149; Hoffmann 1942: 12; Hopkins 1892: 257, 259, 1893a: 140, 146, 1893b: 212, 1894: 280, 1903: 320, 1905: 145; Kirk 1969, 1970; Klages 1896: 11–12, 282, 1897: 90; Kleine 1913b: 152, 1914b: 396, 1934a: 169; Leng 1920: 337; Melsheimer 1853: 87; Smith, J. B. 1886: 127, 1910: 403; Swaine 1909: 104; Weber & McPherson 1991: 54; Wood, S. L. 1982b: 426. (**tx**) Beal & Massey 1945: 70–71; Benoit 1986: 238; Blackman 1922b: 42–43; Blatchley & Leng 1916: 590; Boving & Craighead 1931; Bright 1976d: 28, 32; Butovitsch 1929: 8; Chamberlin 1939: 226; Chapuis 1869: 58, 1873: 266; Dodge 1938: 21–22; Hagedorn 1910a: 123; LeConte 1868: 166, 1876: 372; Muesebeck 1942: 100, 1950: 137; Say 1824: 182, 323; Schedl 1971f: 148; Swaine 1909: 104–105, 1910a: 33, 1918a: 51; Wilson, M.C., Schuder, & Provonsha 1982: 67, 157; Wood, S. L. 1982b: 426.

***nakanei* Nobuchi** 1967: 16. Holotype ♂?; Alisan, 2300 m, Nantou Hsien, Taiwan; Natural Science Museum, Tokyo.
Distribution: Asia (Taiwan).
References: (**tx**) Nobuchi 1967: 16, pl. 1.

***neofacialis* Schedl** 1976a: 60. Holotype ♀; Varginha, M. Gerais; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1976a: 60.

***nevermanni* Schedl** 1935f: 272. Lectotype ♂; Hamburgfarm on Rio Reventazon, Ebene Limon, Costa Rica; Schedl Collection in NHMW, Wien, designated by Wood 1982b: 449.
Distribution: North America (Costa Rica).
Notes: (1) Schedl 1979c: 165 (citation of holotype invalid [lectotype is a male, not a female as stated]).
References: (**ds**) Blackwelder 1947: 788; Wood, S. L. 1982b: 449. (**tx**) Schedl 1935f: 272, 1979c: 165; Wood, S. L. 1982b: 449.

***nitidus* Schedl** 1936d: 8. Holotype ♀; Himalaya; Schedl Collection in NHMW, Wien.
Figures: Yin & Huang 1980: 48, 1981: 555.
Distribution: Asia (Himachal Pradesh, Kashmir, Uttar Pradesh in India/ Xizang [Tibet] in China).
Hosts: *Juglans regia, Prunus armeniaca, Pyrus malus, Cotoneaster microphylla*.
Notes: (3) Beeson 1922c: 498, 1941 (1961: 296) (*juglandis*, nomen nudum), Schedl 1958g: 167 (described male).
References: (**cn**) Hill, D. S. 1983: 679; Kleine 1932a: 304; Mathur & Singh 1960b: 80. (**hb**) Beeson 1922c: 498; Hill, D. S. 1983b: 679; Kleine 1932a: 304. (**ds**) Hill, D. S. 1983: 679; Mathur & Singh 1960b: 80; Schedl 1971c: 361, 1974a: 85; Yin & Huang 1981: 555; Yin, Huang, & Li 1984: 23. (**tx**) Beeson 1922c: 498, 1941 (1961: 296); Kleine 1932a: 304; Schedl 1936d: 8, 1958g: 165–167, 1979c: 170–171; Yin & Huang 1980: 47–48, 1981: 555; Yin, Huang, & Li 1984: 23.

***nodatus* Wood** 1969b: 12. Holotype ♂; Santa Ana, San Jose, Costa Rica; Wood Collection.
Figures: Wood 1969b: 12.

Distribution: North America (Costa Rica/ Panama).
Hosts: Liana.
References: (**hb**) Wood, S. L. 1982b: 446. (**ds**) Wood, S. L. 1982b: 446. (**tx**) Wood, S. L. 1969b: 12, 1982b: 446.

***nodulus* (Wichmann)** 1915a: 102 (*Eccoptogaster*). Holotype ♀; Petropolis (nordlich von Rio de Janeiro), Brazil; not given.
Distribution: South America (Brazil).
References: (**ay**) Butovitsch 1929: 9. (**ds**) Butovitsch 1929: 9. (**tx**) Butovitsch 1929: 9; Schedl 1937h: 155, 157, 162; Wichmann 1915a: 102–104.

nodicornis Wichmann 1915b: 216 (*Eccoptogaster*). Syntypes, sex?; Brazil: Ypanema; Natterer Collection and NHMW, Wien. Synonymy: Schedl 1937h: 155, 157, 162.
References: (**ay**) Butovitsch 1929: 8. (**ds**) Blackwelder 1947: 788; Butovitsch 1929: 8. (**tx**) Butovitsch 1929: 8; Schedl 1937h: 155, 157, 162, 1952a: 444, 1958f: 36; Wichmann 1915b: 216–217.

***novateutonicus* Schedl** 1937h: 162. Syntypes ♂ ♀; Brasilien, Nova Teutonia; Schedl Collection in NHMW, Wien, Plaumann Collection, and Strohmeyer Collection, Eberswald.
Distribution: South America (Brazil).
Notes: (1) Schedl 1979c: 172 (citation of holotype invalid).
References: (**ds**) Blackwelder 1947: 788; Schedl 1966f: 81, 1970e: 79. (**tx**) de Ruette 1970: 113; Schedl 1937h: 157, 162–163, 1948d: 36, 1951h: 288, 1979c: 172.

***numidicus* Brisout** 1883: 147. Syntypes, sex?; Algeria (Foret de Batna); not given.
Figures: Balachowsky 1969: 651, Michalski 1973a: 10.
Distribution: Africa (Algeria/ Morocco).
Hosts: *Cedrus atlantica*.
References: (**ay**) Butovitsch 1929: 9. (**cn**) Chararas 1977c. (**ec**) Peyerimhoff 1934: 52; Pfeffer 1960. (**hb**) Balachowsky 1969: 650; Lepiney & Mimeur 1932: 44; Peyerimhoff 1919: 247. (**ds**) Balachowsky 1969: 650; Butovitsch 1929: 9; Hagedorn 1910d: 85; Kleine 1913b: 152, 1914a: 16, 1934a: 169; Lepiney & Mimeur 1932: 44; Michalski 1973a: 46; Normand 1937: 267–268; Peyerimhoff 1919: 247, 1933b: 303, 1934: 52; Pfeffer 1947d: 128, 1960; Reitter 1894a: 42; Schedl 1964a: 95, 1971d: 426. (**tx**) Balachowsky 1969: 650–651; Brisout de Barneville 1883: 147; Butovitsch 1929: 9; Eggers 1911a, 1913a: 286, 1914: 184–185; Hagedorn 1910a: 128; Michalski 1973a: 46–47, pl. 10; Reitter 1894a: 42, 1913a: 20; Schedl 1934f: 1634, 1948b: 14, 1964a: 95; Semenov 1902: 268; Sokanovskii 1954: 15.

***nunbergi* Michalski** 1964: 665. Holotype ♀; Solnechny Kluch, near Shkotovo, southern Primorye, USSR; IZL, Leningrad.
Figures: Michalski 1973a:pl. 21.
Distribution: Asia (Primorye in E USSR).
References: (**ds**) Krivolutskaya 1983; Michalski 1973a: 73; Sokanovskii 1966: 389. (**tx**) Michalski 1964: 665, 1968a: 113, 1968b: 194, 1973a: 73–74, pl. 21; Sokanovskii 1966: 389.

***obelus* Wood** 1962: 81. Holotype ♂; Payson Canyon, Utah [USA]; Wood Collection.
Figures: Edson 1967: 55 (adult), 58 (galleries).
Distribution: North America (N Arizona, Colorado, E Nevada, New Mexico, Utah in USA).
Hosts: *Abies concolor*.
References: (**hb**) Edson 1967: 31; Wood, S. L. 1982b: 442. (**ds**) Edson 1967: 31, Furniss, R. L. & Carolin 1977: 404; Wood, S. L. 1982b: 442. (**tx**) Edson 1967: 31, 55, 58; Wood, S. L. 1962: 81, 1982b: 442.

***opacus* Blackman** 1934: 20. Holotype ♂; Ouray, Colorado [USA]; USNM, Washington.
Figures: Edson 1967: 50–51 (adult), 57–58 (galleries).
Distribution: North America (Alberta in Canada/ N Arizona, N California, Colorado, Idaho, Montana, Oregon, Utah, Washington, Wyoming in USA).
Hosts: *Abies concolor, A. grandis, A. lasiocarpa, Picea engelmannii*.
References: (**ec**) Schedl 1958d: 187. (**hb**) Bright 1976d: 34; Bright & Skidmore 1991: 368; Chamberlin 1939: 230; Edson 1967: 25; Wood, S. L. 1982b: 441. (**ds**) Bright 1976d: 34; Chamberlin 1939: 230; Edson 1967: 25; Furniss, R. L. & Carolin 1977: 404; Gast et al. 1989: 385; Wood, S. L. 1948: 11, 1951a: 127, 1982b: 441. (**tx**) Blackman 1934: 20; Bright 1976d: 34; Bright & Skidmore 1991: 368; Chamberlin 1939: 230; Edson 1967: 25, 50–51, 57–58; Wood, S. L. 1951a: 127, 1977c: 388, 1982b: 441.

abietis Blackman 1934: 21. Holotype ♂; Sandpoint, Idaho [USA]; USNM, Washington. Synonymy: Wood 1977c: 388.
References: (**ec**) Burks 1979: 856; Furniss, R. L. & Carolin 1977: 403; Hertert, Miller, & Partridge 1975: 901; Marsh 1979: 157; Matthews 1970. (**hb**) Bright 1976d: 34; Bright & Stark 1973: 14; Chamberlin 1939: 230, 1958: 46; Edson 1967: 24; Furniss, R. L. & Carolin 1977: 403. (**ds**) Blackwelder 1939; Bright 1976d: 34; Bright & Stark 1973: 14; Chamberlin 1939: 230, 1958: 46; Edson 1967: 24; Furniss, R. L. & Carolin 1977: 403; Hertert, Miller, & Partridge 1975: 901; Thatcher 1935: 261; Wood, S. L. 1972a: 397. (**tx**) Blackman 1934: 21–22; Bright 1976d: 34; Chamberlin 1939: 230, 1958: 46; Edson 1967: 24, 50; de Ruette 1970: 113; Wood, S. L. 1972a: 397, 1977c: 388.

***oregoni* Blackman** 1934: 18. Holotype ♂; Ashland, Oregon [USA]; USNM, Washington.
Figures: Edson 1967: 47 (adult), 57 (galleries).
Distribution: North America (California, Oregon, Washington in USA).

Hosts: *Pseudotsuga macrocarpa, P. menziesii*.
References: (**cn**) Doane et al. 1936. (**hb**) Bright 1976d: 33; Bright & Stark 1973: 14; Chamberlin 1939: 229, 1958: 45; Doane et al. 1936; Edson 1967: 20; Wood, S. L. 1982b: 438. (**ds**) Blackwelder 1939; Bright 1976d: 33; Bright & Stark 1973: 14; Chamberlin 1939: 229, 1958: 45; Edson 1967: 20; Furniss, R. L. & Carolin 1977: 404; Wood, S. L. 1972a: 397, 1982b: 438. (**tx**) Blackman 1934: 18–19; Bright 1976d: 33; Chamberlin 1939: 229, 1958: 45; Edson 1967: 20, 47; de Ruette 1970: 113; Wood, S. L. 1972a: 397, 1982b: 438.

***parviclaviger* Yin & Huang** 1980: 49, 52. Holotype ♂; Shansi: Jiangxian; IZAS, Beijing.
Figures: Yin & Huang 1980: 49.
Distribution: Asia (Shanxi in China).
Hosts: *Ulmus dividiana, U. pumila*.
References: (**ds**) Yin, Huang, & Li 1984: 21. (**tx**) Yin & Huang 1980: 49, 52, Yin, Huang, & Li 1984: 21.

***peruensis* Schedl** 1937h: 157, 160. Lectotype ♂; Peru, Rio Toro, La Merdet Chanchamayo; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 192.
Distribution: South America (Peru).
References: (**ds**) Blackwelder 1947: 788. (**tx**) Schedl 1937h: 157, 160–161, 1952h: 67, 1979c: 192.

***piceae* (Swaine)** 1910a: 34 (*Eccoptogaster*). Lectotype ♂; Ste Ann's [Ste. Anne de Bellevue, Quebec, Canada]; Cornell University, Ithaca, designated by Bright 1967b: 674.
Figures: Bright 1976d: 200, 205, Edson 1967: 40 (adult), 56 (galleries).
Distribution: North America (Alaska/ all provinces in Canada/ California, Colorado, Idaho, Maine, Massachusetts, Michigan, Montana, New Mexico, New York, North Dakota, Oregon, South Dakota, Utah, Washington, Wisconsin, Wyoming in USA).
Hosts: *Picea* spp., uncommon in *Larix laricina*.
References: (**ay**) Butovitsch 1929: 9, 49; Kirtibutr & Schenk 1977: 381; Thomas, J. B. 1967; Thomas, J. B. & Krywienczyk 1966. (**bv**) Hosking & Knight 1975. (**cn**) Beckwith 1972b; Blackman 1950; Carroll & Parrott 1960; Chamberlin 1924; Chenier & Philogene 1989a; Felt 1926: 250, 271, 1930a: 247, 271; Hopkins 1904a: 26; Keen 1952c: 165; Kondo & Taylor 1985: 33; Lindgren 1980a: 70; Lindquist, O. H. & Syme 1981: 100; Massey & Wygant 1954: 21; Ruppel 1967: 87; Schuder 1969: 76; Smith, G. J. & Melvin 1974b; Swaine 1918a: 53; Swaine & Craighead 1924: 1–27; Woods 1969. (**ec**) Beckwith 1972b; Blackman & Stage 1918: 9–115; Bushing 1965: 466; Furniss, R. L. & Carolin 1977: 404; Marsh 1979: 158; Massey & Wygant 1954: 21; Matthews 1970; Reid 1957b: 7; Tomalak, Welch, & Galloway 1989: 3; Werner & Holsten 1984. (**hb**) Baker, W. L. 1972: 239; Beckwith 1972b; Blackman 1919a, 1950; Blackman & Stage 1918, 1919a; Bright 1976d: 39; Bright & Stark 1973: 14; Chamberlin 1939: 233, 1958: 49–50; Drooz 1985: 356; Edson 1967: 10; Felt 1924: 271, 1926: 250, 271, 1930a: 247, 271; Furniss, R. L. & Carolin 1977: 404; Gara & Holsten 1975; Hopkins 1904a: 26; Keen 1952c: 165; Kirkendall 1984: 235; Lindgren 1980a: 70; Massey & Wygant 1954: 21; Swaine 1918a: 53; Vitomskii 1928a: 178; Wolcott & Montgomery 1933: 164; Wood, S. L. 1982b: 431; Woods 1969. (**ds**) Anonymous 1926c: 515; Ashworth 1980; Ashworth & Brophy 1972: 2984; Ashworth & Cvancara 1983; Ashworth et al. 1981; Beaulne 1956; Beckwith 1972a; Blackman 1919: 149, 1950; Blackwelder 1939; Blatchley & Leng 1916: 589; Bright 1964: 170, 1971a: 125, 1976d: 39; Bright & Stark 1973: 14; Butovitsch 1929: 9, 49; Chamberlin 1925, 1939: 233, 1958: 49–50; Deyrup 1981b: 5; Dodge 1938: 21–22; Edson 1967: 10; Elias 1982b, 1982d, 1983, 1985: 39; Elias, Short, & Clark 1986; Evans, D. 1983: 36; Evans, D., Lowe, & Hunt 1978; Felt 1926: 250, 271, 1930a: 247, 271; Furniss, R. L. & Carolin 1977: 404; Gara & Holsten 1975; Gast et al. 1984: 385; Hubbard & Schwarz 1878b: 626; Keen 1952c: 165; Kleine 1913b: 152, 1934a: 169; Knull 1932: 65; Kusch 1967; Leng 1920: 337; Leonard 1928: 515; Lindquist, O. H. & Syme 1981: 100; McGugan 1959; Miller, Fitzgerald, & Buhay 1987; Miller, R. F. & Morgan 1982; Morgan, A. J. & Morgan 1979, 1980: 1110; Morgan, Anne, Morgan, & Elias 1985; Ruppel 1967: 87; Schuder 1969: 76; Smith, G. J. & Melvin 1974b; Still, Tidsbury, & Melvin 1974a, 1974b; Werner & Holsten 1984; Wolcott & Montgomery 1933: 164; Wood, S. L. 1951a: 127, 1972a: 396, 1982b: 431; Woods 1969. (**tx**) Beckwith 1972a; Blackman 1934: 10, 26–27; Blatchley & Leng 1916: 589; Bright 1967b: 674, 1976d: 39, 200, 205; Butovitsch 1929: 9, 49; Chamberlin 1939: 233, 1958: 49–50; Dodge 1938: 21–22; Edson 1967: 10, 40; Evans, D. 1983: 36; Hoebeke 1978; Kusch 1967; Lindquist, O. H. & Syme 1981: 100; Pardy 1974, 1977, 1983; Schedl 1979c: 193; Swaine 1909: 34, 1910a: 33–35, 1918a: 53; Thomas, J. B. 1967; Thomas, J. B. & Krywienczyk 1966; Titus, Meikle, & Harrison 1985: 116; Wood, S. L. 1972a: 396, 1982b: 431. (**ms**) Chenier & Philogene 1989a.

***pilosus* Yin & Huang** 1980: 49, 52. Holotype ♂; Szechwan: Kangding, 1700 m; IZAS, Beijing.
Figures: Yin & Huang 1980: 50.
Distribution: Asia (Sichuan in China).
References: (**ds**) Yin, Huang, & Li 1984: 27. (**tx**) Yin & Huang 1980: 49–50, 52; Yin, Huang, & Li 1984: 27.

***pinnatus* Eggers** 1928c: 94. Holotype ♀; Brasil, Blumenau; Eggers Collection, in NHMW, Wien.
Distribution: South America (Brazil).
References: (**ds**) Blackwelder 1947: 788. (**tx**) Eggers 1928c: 94, 1931b: 36; Schedl 1937h: 155, 158, 1979c: 195.

***pomi* Yin & Huang** 1980: 50, 53. Holotype ♂; Tibet: Pomi, 2750 m; IZAS, Beijing.
Distribution: Asia (Yunnan, Xizang [Tibet] in China).
Hosts: *Prunus persica, P. tomentosa, Malus baccata, M. yunnanensis, M.* spp.
References: (**tx**) Yin & Huang 1980: 50–53; Yin, Huang, & Li 1984: 39.

***praeceps* LeConte** 1876: 373. Lectotype ♀; Calaveras, California [USA]; MCZ, Cambridge, designated by Wood 1982b: 439.
Figures: Edson 1967: 54 (adult), 58 (galleries).
Distribution: North America (British Columbia in Canada/ California, N Idaho, Oregon, Washington in USA).
Hosts: *Abies concolor.*
Notes: (3) Blackman 1934: 6, 18, 20 (redescription).
References: (**ay**) Butovitsch 1929: 9. (**cn**) Doane et al. 1936; Essig 1926: 511, 1958: 511; Hatch 1938: 193; Hopkins 1899b: 16, 26–27, 1904a: 21; Keen 1952c: 158; Leach 1940b: 224; Struble 1937d: 10, 1957: 12–14; Swaine 1918a: 52. (**ec**) Ashraf & Berryman 1969: 12; Berryman 1968a: 66; Burks 1979: 778; Bushing 1965: 466; Furniss, R. L. & Carolin 1977: 404; Kinn 1971; Leach 1940b: 224; Marsh 1979: 148; Muesebeck 1938: 281–287; Struble 1957: 12; Tehon 1942: 238; Wright 1938: 759–773. (**hb**) Bright & Stark 1973: 14; Chamberlin 1939: 229, 1958: 45; Doane et al. 1936; Edson 1967: 30; Essig 1926: 511, 1958: 511; Furniss, R. L. & Carolin 1977: 404; Hopkins 1899b: 16, 26, 1904a: 21; Keen 1952c: 158; Pierce 1907: 293; Struble 1937d: 10, 1957: 12; Swaine 1918a: 52; Wood, S. L. 1982b: 439. (**ds**) Blackwelder 1939; Bright & Stark 1973: 14; Butovitsch 1929: 9; Chamberlin 1925, 1939: 229, 1958: 45; Cockerell et al. 1907; Currie 1905: 76; Edson 1967: 30; Essig 1926: 511, 1958: 511; Face 1906: 202; Fall & Cockerell 1907: 217; Furniss, R. L. & Carolin 1977: 404; Hagedorn 1910d: 85; Henshaw 1882: 269, 1885: 149; Hopping 1922; Keen 1929a: 12, 1952c: 158; Kleine 1913b: 152, 1914b: 391, 1934a: 169; Leng 1920: 337; Snow 1907: 188; Swaine 1909: 105; Wood, S. L. 1948: 11, 1951a: 127, 1972a: 397, 1982b: 439. (**tx**) Blackman 1934: 5–6, 18, 20; Butovitsch 1929: 9; Chamberlin 1939: 229, 1958: 45; Edson 1967: 30, 54; Hagedorn 1910a: 123; Keen 1929a: 12; LeConte 1876: 373; Swaine 1909: 105, 1910a: 33, 1918a: 52; Wood, S. L. 1972a: 397, 1982b: 439. (**ms**) Hatch 1938: 193.

***propinquus* Blandford** 1896e: 121. Syntypes, sex?; Mexico, Veracruz and Teapa in Tabasco, and Guatemala, Chacoj; BMNH, London.
Figures: Atkinson et al. 1986: 57.
Distribution: Antilles Islands (Cuba), North America (Costa Rica/ Guatemala/ Chihuahua, Nayarit, Tabasco, Veracruz in Mexico).
Hosts: *Inga paterno, Lonchocarpus* sp.
References: (**ay**) Butovitsch 1929: 9. (**bv**) Kirkendall 1984. (**ec**) Equihua & Atkinson 1986: 627. (**hb**) Atkinson et al. 1986: 54; Equihua & Atkinson 1986: 627; Kirkendall 1984; Wood, S. L. 1982b: 447. (**ds**) Atkinson et al. 1986: 54; Blackwelder 1947: 788; Butovitsch 1929: 9; Equihua & Atkinson 1986: 627; Estrada & Atkinson 1988: 204; Ferrer 1942; Hagedorn 1910d: 85; Kleine 1913b: 152, 1914b: 353, 365; Schedl 1963c: 156, 1972g: 38; Wood, S. L. 1982b: 447. (**tx**) Atkinson et al. 1986: 57; Blandford 1896e: 121; Butovitsch 1929: 9; Hagedorn 1910a: 123; Muskus, A. 1984: 66; Schedl 1940a: 329; Wood, S. L. 1977b: 210, 1982b: 447.
penicillus Schedl 1973d: 165. Holotype ♂; Veracruz, Mexico; Schedl Collection in NHMW, Wien. Synonymy: Wood 1977b: 210.
References: (**ds**) Escalera 1919. (**tx**) Schedl 1973d: 165; Wood, S. L. 1977b: 210.

***proximus* Chapuis** 1869: 57. Holotype ♀; Nouvelle Granada; IRSNB, Brussels.
Distribution: South America (presumably Colombia/ Venezuela).
Notes: (3) Reports of this species from Argentina by Schedl (1951h: 286, 1952a: 445, 1958f: 35) require confirmation.
References: (**ay**) Butovitsch 1929: 9. (**ds**) Blackwelder 1947; Butovitsch 1929: 9; Gemminger & Harold 1872: 2695; Hagedorn 1910d: 85; Kleine 1913b: 152, 1914b: 342; Schedl 1966f: 81, 1970e: 79. (**tx**) Butovitsch 1929: 9; Chapuis 1869: 57, 1873: 265; Hagedorn 1910a: 123; Schedl 1937h: 155, 164, 1951h: 286, 1952a: 445, 1958f: 35.

***pseudocostellatus* Schedl** 1937h: 159. Holotype ♀; Sao Paulo, Brasilien; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**ds**) Blackwelder 1947: 788; Schedl 1966f: 81, 1970e: 80, 1972g: 41, 1973d: 150. (**tx**) Schedl 1937h: 156, 159, 1979c: 201.

***pubescens* Stark** 1936e: 153. Lectotype ♂; Suchan, Primorye, USSR; IZL, Leningrad, designated by Michalski 1968b: 188.
Figures: Michalski 1968a: 109, 1973a:pl. 11.
Distribution: Asia (E USSR).
Hosts: *Ulmus propinqua, U. japonica, Carpinus cordata.*
References: (**cn**) Kurenzov 1935c: 189 (**ec**) Kurenzov 1934a: 50, 57. (**hb**) Kurenzov 1935a: 20, 23, 1948b: 121. (**ds**) Krivolutskaya 1983; Kurenzov 1934a: 50, 57, 1935a: 20, 23, 1935c: 189, 1936b: 350; Michalski 1973a: 47; Sokanovskii 1966: 388; Stark 1936e: 153. (**tx**) Balachowsky 1949: 65; Eggers 1942: 34–35; Kurenzov 1935: 24, 1941a: 98, 1948b: 121; Michalski 1968a: 109, 1968b: 188, 1969c: 661, 1973a: 47–49, pl. 11; Pfeffer 1944a: 131; Schedl 1948b: 59, 1952k: 158, 1979c: 203, 1981b: 43; Sokanovskii 1966: 388; Stark 1936e: 153, 1951: 229, 1952: 106–107; Tsai, Yin, & Huang 1962: 6. (**ms**) Pfeffer 1944a: 131.

pubescens Eggers 1942c: 34. Holotype, sex?; Suchan, Primorye, USSR; Eggers Collection, preoccupied, type not mentioned by Anderson & Anderson 1971 or Schedl 1979c. Synonymy: Pfeffer 1944a: 131, Schedl 1948b: 59.
References: (**hb**) Stark 1952: 106. (**ds**) Stark 1952: 106. (**tx**) Eggers 1942c: 34, 1951: 158; Pfeffer 1944a: 131; Schedl 1948b: 59, 1952k: 158; Stark 1951: 229, 1952: 106.

***pygmaeus* (Fabricius)** 1787: 37 (*Bostrichus*). Syntypes 2, sex?; Halae Saxoniae, Germany; UZMC, Copenhagen.
Figures: Michalski 1973a:pl. 22, Pfeffer 1989a:pl. 5, Sokanovskii 1966: 382.
Distribution: Asia (Turkey/ E USSR), Europe (Austria/ Belgium/ Bulgaria/ Czechoslovakia/ France/ Germany/ Greece/ Hungary/ Italy/ Netherlands/ Poland/ Portugal/ Romania/ Sweden/ W USSR).
Hosts: *Ulmus* spp., *Carpinus* sp., *Fagus* spp., *Olea europea*, *Prunus* spp., *Quercus* spp.
Notes: (3) Butovitsch 1929: 9 (*minutus* Zieg., nomen nudum), 1929: 30 (described abberation *inaequipunctatus*, no status in nomenclature).
References: (**ay**) van Deventer & Minks 1977; Escherich 1923b: 478, 497; Francke-Grosmann 1959; Schevyrew 1889a: 22. (**bv**) Barr, B. A. 1969: 643; Inscoe 1982; Klassen, Ridgway, & Inscoe 1982; Klimetzek & Kopp 1983; Maksimovic 1979a; Manojlovic 1982b; Michalski 1959c: 167; Minks & van Deventer 1978. (**cn**) Acatay 1943a: 56; Acloque 1914; Archer 1866; Chararas 1972; Chorbadzhievo 1929; Clinton & McCormick 1936; van Deventer & Minks 1977; Escherich 1923b: 478, 497; Esterberg 1959; Feisthamel 1836, 1837; Fridrici 1860; Froggatt 1899; Garcia-Tejero 1955: 227; Gradojevic 1940; Gyorfi 1959; Kalandra & Pfeffer 1935: 6, 1938: 24–33; Karnosky 1976; Kholodkovskii 1912: 290; Leach 1940b: 227; Liese & Butovitsch 1931: 1114; Lokaj 1906: 21; Maksimovic & Motal 1983; Marcu 1926c: 58; Maslov 1971; Mathiesen 1950: 74; Minks & van Deventer 1978; Mokrzecki 1926b: 4; Packard 1890: 860; Peck 1879: 37; Pfeffer 1979: 148; Pierce, W. D. 1917: 96; Rhumbler 1927: 285; Spassky 1916: 219–226; Schwerdtfeger 1944a: 172, 1957a: 181; Spassky 1916: 219–226; Stefan 1961; Stepanov 1951: 52; Tubeuf 1936: 500; Vajda 1952: 114; Vassiliev 1916: 20–23; Vorontson et al. 1987; Wachtl 1901: 380; Walsh 1867b: 58; Zimmerman, G. & Bathon 1983. (**ec**) Androic 1966: 46; Apel 1983; Arambourg 1964: 115; Balazy 1965a; Balazy & Michalski 1960; Boucek 1958; Chararas 1959a; Cooreman 1963: 46; Elliot & Morley 1907; Escherich 1935; Francke-Grosmann 1959; Fry 1989: 18; Graham 1969: 879; Haeselbarth 1967; Heqvist 1963, 1967: 69; Hirschmann & Zirngiebl-Nicol 1961; Jamnicky 1957b: 20, 1957c; Karnosky 1976; Kleine 1908c: 177, 1944: 78; Kolubajiv 1954: 22; Kopyl 1983; Kostenko 1929; Leach 1940b: 227; Lipa 1968; Lipa & Chmielewski 1977; Maksimovic 1979a, 1979b, 1986a; Maksimovic & Motal 1981, 1983; Merlin 1984; Meyer 1934: 612; Michalski 1973b, 1976; Mozolevskaya et al. 1987; Nosek 1959a: 118, 1959b: 85; Novak, P. 1952: 411; Nuorteva 1957b: 52; Palm 1958: 346–347; Perris 1852: 513, 1856a: 243; Pfeffer 1928b: 2, 1943b: 180, 1979: 148; Rondani 1873: 162; Ruschka 1916: 27; Schaarschmidt 1959: 803; Schimitschek 1964e; Schwerdtfeger 1944a: 172, 1957a: 181; Sengonca & Leisse 1984; Sitowski 1930: 3, 11; Stepanov 1951: 52; Strjcek 1988; Szczepanski 1960a: 409; Teocchi 1965: 4; Thompson, W. R. 1943: 106; Tudor 1969: 33; Vitzthum 1921a: 33, 1921b: 76, 1926: 462; Wichmann 1916: 13, 1916b: 432–433; Zimmermann, G. & Bathon 1983. (**hb**) Acatay 1943a: 56; Apel 1983; Audouin 1836; Barbey 1901: 16, 37; Budge 1949; Butovitsch 1929; Chararas 1972; Chittenden 1890; Chorbadzhievo 1929; Clinton & McCormick 1936; Decaux 1890c, 1890e; van Deventer & Minks 1977; Dombrowsky 1887, 1892; Eggers 1906; Eichhoff 1881a: 40, 152; Escherich 1923b: 478, 497; Everts 1903: 740; Fisher 1931; Froggatt 1899; Froriep 1836; Fuchs 1904a; Girard 1873; Gyorfi 1957; Henschel 1895a: 157; Karpinski & Strawinski 1948: 153; Keller 1913: 242; Kholodkovskii 1912: 290; Kostin 1960: 130; Lengerken 1939: 49, 1954: 65; Lindeman 1964: 78–81; Madon 1930: 99; Maksimovic 1979a, 1979b; Maksimovic & Motal 1981; Manojlovic 1986b; Marcu 1941: 401; Maslov 1963a, 1963c: 846, 1964; Masutti 1964; Merlin 1984; Michalski 1959b: 161, 1959c: 167; Mozolevskaya et al. 1987; Nosek 1959a: 118, 1959b: 85; Packard 1890: 860; Perris 1852: 513, 1856a: 243; Postner 1974: 384; Ratzeburg 1837: 186, 1839: 228; Rhumbler 1927: 285; Rudnev & Stepanova 1960: 773–777, 1961; Rupertsberger 1880: 227; Schedl 1981b: 43; Schimitschek 1939c: 274; Schwerdtfeger 1944a: 172, 1957a: 181, 1981: 187; Spessivtsev 1913a: 34, 39; Stark 1926a: 331, 1952: 105; Tschorbadjiev 1929: 154; Wachtl 1901: 380; Wichmann 1909a: 165, 1916: 13. (**ds**) Acloque 1896, 1914; Andersch 1851; Androic 1966: 46; Audouin 1836; Audras & Schaefer 1957; Balachowsky 1944b; Barthe 1896; Bau 1888; Bedel 1888b: 387, 406; Bielz 1851, 1887; Blanchere & Robert 1889; Borchert 1951; Brakman 1966b: 203; Brancsik 1871; Buresh & Lazarov 1956; Butovitsch 1929: 7, 30; Calwer 1884, 1893; Chapuis 1869: 54, 1873: 262; Chapuis & Candeze 1853; Chittenden 1890; Chorbadzhievo 1924d, 1929; Clinton & McCormick 1936; Comolli 1837: 37; Debatisse 1945; Dejean 1821, 1825, 1837; Duftschmidt 1825; Eder 1934; Eggers 1904, 1906; Endrodi 1958b; Escalera 1919; Escherich 1923b: 478, 497, 1932b; Esterberg 1928, 1959; Everts 1922: 637, 1925; Forster 1849: 440; Fuchs 1904a; Gaubil 1849: 127; Gemminger & Harold 1872: 2695; Gozis 1875: 80; Grune

1979: 37; Gyllenhal 1827: 620; Hagedorn 1910d: 85–86; Hansen, V. 1939; Hellen 1947; Henschel 1895a: 157; Heyden, Reitter, & Weise 1883: 181, 1891: 670, 1906: 708; Horion 1951; Illiger 1805: 130; Jacentkovsky 1935: 18; Jazentkovsky 1912: 286; Kaltenbach 1874: 535, 646; Kamp 1979; Karpinski 1925: 215, 1948a: 173, 1948b: 228; Karpinski & Strawinski 1948: 153; Keler 1925b: 270; Kersten 1933: 77; Kestercanek 1881a: 12; Klefbeck & Sjoberg 1960: 228; Kleine 1912a: 263, 267, 1913a: 34, 1913b: 152, 1934a: 169; Koca 1905: 192; Koch 1977: 34; Kolubajiv 1934: 65; Kostenko 1929; Kraatz 1869: 59; Kugelann 1794: 526; Lacordaire 1866: 387; Langhoffer 1915c: 156; Leclercq 1971; Leder 1871: 131; Lentz 1857: 140; Lokaj 1868: 64; Lomnicki 1886a: 241, 1913b: 147; Lucht 1987: 275; Luigioni 1929: 990; Luria 1958: 299; Marcu 1926c: 58; Michalski 1959b: 161, 1973a: 75; Negru 1957: 129; Negru & Rosca 1967: 141; Novak, P. 1952: 411, 1964; Nunberg 1928b: 87, 92, 1954: 89; Oliveira 1887: 327; Orest 1926c: 58; Palm 1959: 212; Pascovici 1962; Pascovici et al. 1963: 153–175; Perris 1876a: 254, 1877a: 414; Pfeffer 1928b: 2, 1931b: 73, 1989a: 47, Pierce, W. D. 1917: 96; Pittioni 1943: 174; Pjatnitskii 1932: 295–302; Postner 1974: 384; Rapp 1934: 716; Ratzeburg 1837: 186, 1839: 228; Redtenbacher 1858: 838, 1874: 372; Reitter 1894a: 41, 1916: 271; Revy & Siroki 1942: 82; Roubal 1908: 12, 1935b: 72, 1941: 255; Sainte-Claire & Mequignon 1938: 443; Schaufuss 1915: 1204; Schaum 1859: 95, 1862: 100; Schedl 1971f: 148, 1980a: 3, 1981b: 43; Schevyrew 1890c: 469; Schilsky 1909: 186; Schwerdtfeger 1981: 187; Seidlitz 1872: 390, 1891a: 557, 1891b: 602; Sokanovskii 1966: 381; Stark 1926a: 331, 1926b: 101, 1926g: 153, 1927b: 85, 1952: 105; Stein 1868: 113; Stein & Weise 1877: 164; Stephens 1829a: 146, 1830: 362; Stierlin 1898: 436; Stierlin & Gautard 1871: 294, 1906: 205; Sturm 1826: 194, 1843: 229; Teocchi 1965b; Thomson 1865: 375; Townson 1803: 192; Tredl 1907: 6; Tressens 1952: 89; Tschorbadjiev 1929: 154; Villa & Villa 1833: 26; Westhoff 1882: 238; Wichmann 1927a: 49. (**tx**) Acatay 1943a: 56–57; Acloque 1896; Apel 1983; Bach 1854; Balachowsky 1944b: 13–15, 1949a: 69; Barbey 1901: 16, 37; Bedel 1888b: 387, 406; Bertolini 1872; Brancsik 1871; Butovitsch 1929: 7, 30; Castelnau 1840; Chapuis 1869: 54, 1873: 262; Chapuis & Candeze 1853; Chevrolat 1838; Chorbadzhievo 1924d; Csiki 1906; Dejean 1821, 1825; Desbrochers 1891; Dombrowsky 1887, 1892; Duftschmidt 1825: 107; Eggers 1929e: 43; Eichhoff 1881a: 40, 152–153, 1883a: 105, 129; Endrodi 1957b; Erichson 1836: 58; Escherich 1923b: 478, 497; Everts 1903: 740, 1922: 637; Fabricius 1787: 37, 1792: 367, 1801: 395; Fauvel 1889; Formanek 1907: 9; Girard 1873; Gmelin 1790: 1602; Grune 1979: 36–37; Gyllenhal 1813: 348, 1827: 620; Hagedorn 1910a: 123; Henschel 1895a: 157; Herbst 1793: 127; Houlbert 1922a: 7; Iablokoff-Khnzorian 1961: 85; Illiger 1907: 321; Jablonsky 1785: 127; Jacentkovsky 1935: 18; Karpinski & Strawinski 1948: 153; Kugelann 1794: 526; Kuhnt 1913: 1048; Lacordaire 1866: 387; Letzner 1844: 64, 1891: 374; Lucht 1987: 275; Luigioni 1929: 990; Michalski 1959b: 161, 1962a: 53–57, 1962b: 202, 273–276, 1967: 311–312, 1973a: 75–78, pl. 22; Nunberg 1954: 89–92; Olivier 1795b: 6; Orest 1926b: 81–87; Panzer 1795a: 286; Paykull 1800: 152; Perris 1877a: 414; Pfeffer 1932b: 10, 1955a: 79–80, 86, 1989a:pl. 5; Portevin 1935: 309; Postner 1974: 384; Quaschik 1953: 35; Ratzeburg 1837: 186–187, 1839: 228; Redtenbacher 1849a: 361, 1849b: 27, 1858: 838, 1874: 372; Reitter 1894a: 41, 1913a: 17–18, 1916: 271; Rhumbler 1927: 285; Rupertsberger 1880: 227; Salhberg 1836: 141; Schedl 1934f: 1632, 1948b: 37, 1952f: 86, 1980a: 3, 1981b: 43; Schevyrew 1889a: 22, 1893a: 111–113, 1893b: 64–69; Schmidt, G. 1980: 27; Seidlitz 1872: 390, 1891a: 557, 1891b: 602; Sokanovskii 1966: 381–383; Spessivtsev 1913a: 34, 39, 1921a: 316; Stark 1952: 105–106; Stephens 1829a: 146, 1830: 362; Stierlin 1898: 436; Thomson 1865: 375; Wichmann 1916: 13–14. (**ms**) Escherich 1932b; Hartig 1834: 218.

noxius Ratzeburg 1837: 187 (*Eccoptogaster*). Syntypes, sex?; not stated, presumably Germany; not given. Synonymy: Schedl 1948b: 37.
References: (**hb**) Dombrowsky 1892; Ratzeburg 1837: 187, 1839: 230. (**ds**) Calwer 1884, 1893; Gaubil 1849: 127; Gemminger & Harold 1872: 2695; Kraatz 1869: 59; Lacordaire 1866: 387; Ratzeburg 1837: 187, 1839: 230; Redtenbacher 1858: 838, 1874: 373; Reitter 1869b: 154; Schaum 1859: 95, 1862: 14; Schilsky 1909: 186; Stein 1868: 114; Stein & Weise 1877: 164; Sturm 1843: 229. (**tx**) Bach 1854; Balachowsky 1949a: 69; Butovitsch 1929: 6; Dombrowsky 1892; Lacordaire 1866: 387; Letzner 1891: 374; Ratzeburg 1837: 187, 1839: 230; Redtenbacher 1849a: 792, 1849b: 27, 1858: 838, 1874: 373; Schedl 1948b: 37.

armatus Comolli 1837: 37. Syntypes, sex?; Novocomi Prov., northern Italy; not given. Synonymy: Balachowsky 1949a: 69.
References: (**hb**) Dombrowsky 1892. (**ds**) Blanchere & Robert 1889; Calwer 1884, 1893; Gaubil 1849: 127; Gemminger & Harold 1872: 2695; Kraatz 1869: 59; Lacordaire 1866: 387; Redtenbacher 1874: 373; Schaum 1859: 95, 1862: 101; Schilsky 1909: 186; Stein & Weise 1877: 164; Stierlin & Gautard 1871: 294. (**tx**) Balachowsky 1949a: 69; Bertolini 1872; Comolli 1837: 37; Dombrowsky 1892; Fauvel 1887; Lacordaire 1866: 387; Letzner 1891: 374; Redtenbacher 1874: 373; Schedl 1948b: 37.

***quadrispinosus* Say** 1824: 323. Holotype ♂; Missouri [USA]; Say Collection, lost.

Figures: Blackman 1922b:pl. 3, figs. 17, 20–22, Bright 1976d: 28, White 1983: 324.
Distribution: North America (Ontario, Quebec in Canada/ Alabama, Connecticut, Delaware, District of Columbia, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maryland, Michigan, Mississippi, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, West Virginia, Wisconsin in USA).
Hosts: *Carya* spp.
Notes: (3) Blackman 1934: 16 (redescribed).
References: (**ay**) Butovitsch 1929: 36–37; Goeden & Norris 1964b, 1965b; Hopkins 1894g; Stickney 1921: 15. (**bv**) Gilbert & Norris 1968; Goeden & Norris 1963, 1964a: 141, 1964b: 743, 1965b; Kozlowski 1969: 121; Raffa & Berryman 1982b: 98; Roling & Kearby 1975b, 1977; Vite & Pitman 1967. (**cn**) Anderson, R. F. 1960: 238; Anonymous 1966f, 1967f, 1968g, 1985k: 26, 1987d: 19; Baker, W. L. 1972: 237; Beal et al. 1952: 51–52; Beeson 1918; Blackman 1950; Britton 1901: 267, 1902, 1911, 1912: 341, 1913: 3, 1914: 181, 1915: 198, 1920b, 1933: 117, 1934: 1, 162; Britton & Walden 1914: 237; Bromley 1939: 41–42, 1944a; Chamberlin 1924; Craighead & Middleton 1930; Davis 1930: 21–22, 1938: 17, 1940: 17–18, 1952: 18, 1954: 18; Doane et al. 1936; Drooz 1985: 355; Ebel, Merkel, & Kowal 1968; Elliot & Mobley 1938; English 1958: 36; Epstein 1959; Felt 1910: 103, 1912: 110, 1913: 63, 1914: 374, 1915: 33, 1916: 15–88, 336, 574, 1918: 67, 1923: 87, 1924: 49, 1926: 49, 247, 1929: 43–48, 1932: 44, 1934 (edition of 1930a): 195–200, 1934b, 1935: 233, 1942: 8; Felt & Bromley 1930: 15, 1931: 437, 1932: 298; Felt & Rankin 1932: 24, 219, 257; Flint & Farrar 1940: 26–28; Gardner 1941: 21; Goeden & Norris 1964b: 64–65, 1964c, 1965b: 249–252; Gossard 1905a: 309; Headlee 1914: 349, 1915, Herrick 1935: 112; Hetrick 1949b; Hofaker, Loomis, & Tucker 1987; Hopkins 1898a: 105, 1899b: 15, 1902d: 24, 1904a: 41, 1906c: 632, 1907: 163, 1908c: 163, 1909c: 60, 78, 1910f: 3, 1910g: 60, 78, 1911: 1, 1912c; Hough 1878: 162, 1882: 273; Houser 1918: 320, 1946: 36; Johnson 1897: 345–364; Kotinsky 1921: 72; Kowal 1959b: 162; Lebaron 1872:(10 Aug.), 1874: 146; Levison 1909: 363, 1915: 797, 1940: 217–219; Lindquist, O. H. & Syme 1981: 100; Loomis 1913: 446; Loomis, Hofacker, & Tucker 1986; Lugger 1899a: 304; Mattson & Haack 1987; McDaniel 1933: 22–25, 1940: 243–245; Merkel & Kowal 1956: 7; Metcalf & Flint 1928: 670, 1939: 718, 1951: 797; Middleton 1928a: 375, 1928b: 422, 1929: 23; Osborn 1896: 594, 1897: 291–293; Packard 1890: 294; Pettit 1930: 217, 1931: 15, 1933: 231; Pierson 1927: 71; Pirone 1941: 311–312; Pirone, Dodge, & Rickett 1960: 246; Porter 1932: 79–80; Riley 1867: 68–69, 1873: 105, 1875: 105, 1880a: 58, 1880b: 298; Roling & Kearby 1977; Saunders 1883: 51; Schwarz 1932: 111; Smith, J. B. 1895b: 298, 1900: 363, 1912: 84; Solomon & Payne 1986; Swaine 1918a: 52; Thomas 1876: 145; Vajda 1952: 121; Walsh 1867b: 57–58. (**ec**) Ashmead 1893b; Ashraf & Berryman 1969: 13; Blackman 1924: 135–143; Blackman & Stage 1924: 11; Burks 1959; Bushing 1965: 466; DeLeon 1934b; Felix, Uhrenholdt, & Parmeter 1971: 1697; Felt 1906: 275, 1915: 8, 33; Goeden 1966; Goeden & Norris 1964b, 1965b; Hetrick 1949b; Hopkins 1891b: 258; Houser 1931: 658; Marsh 1979: 150; Matthews 1970; Mattson & Haack 1987; Metcalf & Flint 1928: 670, 1939: 718, 1951: 797; Pierce 1908: 387; Powell, J. M., Wong, & Melvin 1972: 15; Richerson, J. V. & Borden 1972a; St. George 1929b: 573, 1930: 826; Thompson, W. R. 1965: 27; Thompson, W. R. & Simmonds 1964: 36; Vitzthum 1926: 451; Wilson, M. C., Schuder, & Provonsha 1982: 66. (**hb**) Anderson, R. F. 1960: 238; Anonymous 1985k: 26; Baker, W. L. 1972: 237; Beal & Massey 1945: 65–70; Bird 1913: 123–126; Blackman 1922b: 44–47, 1924: 460, 1950; Blackman & Ellis 1915, 1916: 26, 78; Bright 1976d: 33; Britton 1902, 1913, 1924: 166; Chamberlin 1939: 235; Chittenden 1890; Dillon & Dillon 1961: 805; Doane et al. 1936; Drooz 1985: 355; Deyrup & Atkinson 1987a: 65; Felt 1906: 275, 1915: 8, 33, 1926: 49, 247; Felt & Rankin 1932: 24, 219, 257; Gagne & Kearby 1979b; Goeden 1966; Goeden & Norris 1964b: 743, 1964c: 771, 1965a, 1965b; Herrick 1935: 112; Hopkins 1892: 258, 1893: 134, 280, 1894g, 1899a: 344, 1899b: 15, 1904a: 41, 1904b: 314, 1907a, 1912c; Houser 1918: 320; Klages 1896: 11–12; Kotinsky 1921: 72; Kozlowski 1969: 121; Lugger 1899a: 304; Lutz 1918: 405; McDaniel 1933: 22, 1940: 243; Metcalf & Flint 1928: 670, 1939: 718, 1951: 797; Osborn 1896: 594; Packard 1890: 294; Pierce 1907: 292; Pierson 1927: 71; Rhoades 1924: 135–143; Schwarz 1901b: 344; Smith, J. B. 1886: 127, 1895a: 294, 1895b: 465–474, 1912: 84; Solomon & Payne 1986; St. George 1929: 573–580; Swaine 1918a: 52; Vitzthum 1926: 407–503; White, R. E. 1983; Wood, S. L. 1982b: 429. (**ds**) Anderson, R. F. 1960: 238; Anonymous 1926c: 514, 1966f, 1967f, 1968g; Atkinson et al. 1991: 157; Beal & Massey 1945: 67–70; Beaulne 1941; Bird 1919; Blackman 1922b: 44–47, 1924: 460, 1950; Blackwelder 1939; Blatchley & Leng 1916: 588; Bright 1976d: 33; Britton 1920a; Butovitsch 1929: 9, 36–37; Chamberlin 1939: 235; Chittenden 1890; Clarke 1913: 264; Craighead & Middleton 1930; Deyrup 1981b: 5; Deyrup & Atkinson 1987a: 65, 1987b: 68; Dodge 1938: 21–22; Drooz 1985: 355; Felt 1915: 8, 33, 1926: 49, 247, 1930a: 247; Felt & Rankin 1932: 24, 219, 257; Frost & Dietrich 1929; Gemminger & Harold 1872: 2696; Goeden & Norris 1964a, 1964b, 1965a, 1965b; Hagedorn 1910d: 87; Hamilton 1891: 130, 1895a: 378; Harrington 1884a; Henshaw 1885: 148; Hill, D. S. 1987: 337; Hoffman 1942: 12;

Hollister 1920: 145; Hopkins 1893a: 129, 145–146, 1907a; Kleine 1913b: 152, 1914b: 398, 1934a: 169; Leng 1920: 337; Leonard 1928: 514; Lindquist, O. H. & Syme 1981a: 100; Melsheimer 1953: 87; Merkel & Kowal 1956: 7; Smith, J. B. 1886: 127, 1900: 363, 1905: 632, 1910: 347, 403; Swaine 1909: 105; Ulke 1902: 56; Wood, S. L. 1982b: 429. (**tx**) Anderson, R. F. 1960: 238; Baker, W. L. 1972: 238; Beal & Massey 1945: 67–70; Benoit 1986: 238; Blackman 1922b: 44–47, 1934: 11–12, 16–17; Blatchley & Leng 1916: 588; Bright 1976d: 28, 33; Butovitsch 1929: 9, 36–37; Chamberlin 1939: 235; Dillon & Dillon 1961: 801, 805; Dodge 1938: 21–22; Edwards 1959; Hagedorn 1910a: 124; Hopkins 1915c: 189, 203; Leconte 1868: 165, 1876: 371; Lindquist, O. H. & Syme 1981: 100; Lutz 1918: 405; Muesebeck 1942: 100, 1950: 137; Say 1824: 323; Solomon & Payne 1986: 24; Spessivtsev 1921a: 320; Swaine 1909: 105, 1910a: 33, 1918a: 52–53; Titus, Meikle, & Harrison 1985: 116; White, R. E. 1983: 324; Wilson, M.C., Schuder, & Provonsha 1982: 66; Wood, S. L. 1982b: 429. (**ms**) Anonymous 1985k: 26; Bird 1913: 123–126, 1919.

carya Riley 1867: 68. Syntypes, sex?; Princeton, Illinois [USA]; not given. Synonymy: LeConte 1876: 371.

References: (**cn**) Riley 1867: 68–69, 1873: 103–108, 1881: 54; Walsh 1867b: 58. (**ds**) Leng 1920: 337. (**tx**) Blackman 1934: 4; Butovitsch 1929: 9; LeConte 1868: 166, 1876: 371; Riley 1867: 68; Swaine 1909: 105–106.

caryae Walsh 1867: 58. Syntypes 4 ♀; Princeton, Illinois [USA]; not given. Synonymy: LeConte 1876: 371, Wood 1982b: 429.

References: (**ds**) Gemminger & Harold 1872: 2695; Swaine 1909: 105. (**tx**) LeConte 1876: 371; Swaine 1909: 105; Walsh 1867: 58; Wood, S. L. 1982b: 429.

***querci* Yin & Huang** 1980: 50, 53. Holotype ♂; Szechwan: Markang, 2600 m; IZAS, Beijing.

Figures: Yin & Huang 1980: 51.

Distribution: Asia (Sichuan, Yunnan in China).

Hosts: *Quercus gilliana, Q. semicarpifolia*.

References: (**ds**) Yin, Huang, & Li 1984: 35. (**tx**) Yin & Huang 1980: 50, 51, 53; Yin, Huang, & Li 1984: 35.

***ratzeburgi* Janson** 1856: 87. Syntypes, sex?; Rannoch, Perthshire, England; IRSNB, Brussels.

Figures: Grune 1979: 34, Michalski 1973a:pl. 23a, 23b, Pfeffer 1989a:pl. 5, Yin, Huang, & Li 1984: 30.

Distribution: Asia (Heilongjiang in China/ Japan/ Korea/ E USSR), Europe (Austria/ Belgium/ Bulgaria/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Hungary/ Italy/ Luxemburg/ Netherlands/ Norway/ Poland/ Romania/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia).

Hosts: *Betula* spp.

References: (**ay**) Butovitsch 1929: 8, 45–46; Escherich 1923b: 440, 477, 489; Feytaud 1950a; Gahan 1900; Keler 1920: 129; Leisewitz 1906: 53; Nunberg 1928a: 140; Ring 1977; Scherb 1971; Schevyrew 1889a: 22; Scholz 1905: 142. (**bv**) Barr, B. A. 1969: 643; Grune 1979: 35; Kevdina 1897: 108; Michalski 1959c: 167; Nuorteva 1956c: 58; Prell 1931: 367. (**cn**) Acloque 1914; Arnoldi et al. 1955: 658; Berdennikova 1954: 87; Betrem 1930b: 274; Browne 1968: 645; Eckstein 1926: 573; Egerov 1958: 1492; Eidmann & Klingstrom 1976: 236; Elton & Blackwaardt 1953; Escherich 1923b: 440, 477, 489; Esterberg 1959; Feytaud 1950a; Fisher 1937c; Gabler 1955; Georgescu et al. 1957: 356, 416; Grandi 1951; Greckin 1956: 1485; Hasek 1961: 5; Hess 1900: 51; Hess & Beck 1914: 241, 1927: 295; Ishikura 1966; Judeich & Nitsche 1895: 444, 483; Kangas 1950b: 160, 1958d: 164; Kharnitonov 1924: 199–204; Kholodkovskii 1912: 279; Konig, E. 1957: 100; Koppen 1882: 249; Lekander 1954b: 7; Lekander, M. 1951: 21; Lokaj 1906: 22; MacDougall 1924, 1929; Marcu 1926c: 58; Melnikova 1962b: 113–114, 1962c: 91–102, 1964: 32; Nestertschuk 1930: 163; Novak, V., Hrozinka, & Stary 1976: 111; Nusslin 1913: 204; Ohnesorge 1955: 280; Packard 1890: 860; Palm 1951: 228; Pierce, W. D. 1917: 46; Ratzeburg 1871c: 85; Rhumbler 1922: 274, 1927: 284; Roepke 1931: 162; Saalas 1949: 340, 345; Schevyrew 1905b: 1088; Schimitschek 1935b: 146, 1955a: 140, 1955c: 73; Schwappach et al. 1929: 185; Schwerdtfeger 1944a: 172, 1953c: 209, 1957a: 180; Tragardh 1921a: 119, 1927c: 63; Vrydagh 1952: 123; Wachtl 1901: 380; Walsh 1867b: 58; Weber, H. 1926: 573; Wolff & Krausse 1922: 68; Zakharov & Levkovich 1951: 299; Zhang et al. 1958: 27. (**ec**) Adeli 1964; Balazy 1962, 1963a: 69–80, 1965a; Balazy & Michalski 1964b; Betrem 1929, 1930b: 274; Boucek 1957b: 80, 1958; Brammanis 1938, 1940: 257–340; Carpelan 1944; Elliot & Morley 1907; Fischer 1937: 110–128, 1962: 299; Galoux 1947c; Glowacki 1951; Graham 1969: 879; Gusev 1928: 144; Gyorfi 1941b, 1943: 83; Haeselbarth 1967; Heqvist 1963; Hirschmann 1960; Hirschmann & Wisniewski 1982m, 1983; Jamnicky 1957b: 20, 1957c, 1958: 689; Kangas 1942b, 1950: 145–147, 1954a: 48, 1954b, 1984; Kapuscinski 1948: 74; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1980, 1983; Kleine 1908b: 227, 1908c: 177, 1944: 72; Kostenko 1929; Kraemer 1950b: 380; Lundberg 1984; Melnikova 1962a, 1962b; Meyer 1934: 612; Michalski & Ratajczak 1989; Mostovsky 1923: 287–288; Nuorteva 1956a: 16, 1961a: 119, 1961c: 119, 1971: 68; Nusslin 1927: 284; Okolow 1963; Otten 1940: 197; Palmen 1944: 60, 1946: 194; Pettersen 1976b; Pfeffer 1923a: 329, 1931b: 7, 74, 1943b: 178; Poinar 1975: 169; Roepke 1931: 161–168; Ruhm 1956b: 3; Rummukainen 1950: 36, 1952: 3, 1954: 8; Saalas 1949: 340, 345; Scheidter 1936:

233; Schimitschek 1955a: 140, 1964e; Schindler 1962: 181–184; Schwerdtfeger 1944a: 172, 1953c: 209, 1957a: 180; Sedlaczek 1935a: 155; Sieber & Benz 1985; Sitowski 1930: 4; Smetana 1958: 63; Smirnov 1935: 123–128; Szczepanski 1960a: 410; Thompson, W. R. 1943: 106; Vietinghoft 1924: 335–336; Wiackowski 1957a: 85, 1958: 174; Yanovskii 1977b. (**hb**) Adeli 1964; Adelung 1905; Altum 1881c: 322; Bach 1864; Balachowsky 1963a: 1249; Barbey 1901: 16, 35, 1913; Bargmann 1906; Beffa 1949, 1961; Boas 1923: 340; Bonnemaison 1953; Brandt 1948; Browne 1968: 645; Budkov 1897; Cecconi 1906, 1924; Chittenden 1890; Decaux 1890e, 1890f; Dombrowsky 1887, 1892; Eckstein 1897, 1926: 573; Eichhoff 1881a: 40, 150; Eidmann & Klingstrom 1976: 236; Escherich 1923b: 440, 477, 489; Everts 1900, 1903: 739; Ferguson 1924; Feytaud 1950a; Fisher 1931; Fuchs 1904a, 1905c: 340; Gabler 1955; Gahan 1900; Gornostaev 1916: 308–315; Grandi 1951; Greckin 1956: 1485; Gyorfi 1957; Hagedorn 1903a; Hennings 1908b, 1908c: 212; Henschel 1895a: 156; Hess 1900: 51; Hess & Beck 1914: 241, 1927: 295; Jacobi 1906: 145; Judeich 1880: 160; Judeich & Nitsche 1895: 444, 483; Kangas 1951: 225, 1954b; Karpinski 1933b: 22; Karpinski & Strawinski 1948: 153; Keller 1913: 242; Kemner 1919: 174; Kholodkovskii 1889: 277, 1912: 279; Kirsch 1871: 169; Knoche 1905: 406; Knotek 1894a: 553; Koch 1957b: 149; Konig, E. 1957: 100; Kostin 1960: 130; Kraemer 1950e: 380; Lekander 1954b: 7; Lengerken 1939: 35, 1954: 65; Lindemann 1881b: 171–173; Louzil 1961: 17; Lunardoni & Leonardi 1889: 450; MacDougall 1924: 100; Madon 1930: 112; Marcu 1941: 400; Melnikova 1964; Michalski 1959c: 167; Morstatt 1924: 10; Munro 1926: 44; Novak, V., Hrozinka, & Stary 1976: 111; Nunberg 1929a: 91, 1929c: 113; Nuorteva 1956c: 58; Nusslin 1898: 376, 1913: 204, 1927: 284; Ohnesorge 1955: 280; Packard 1890: 860; Palm 1951: 228, 1953b: 58; Pauly 1892a: 195; Pfeffer 1942a: 10, 1989a: 47; Postner 1974: 385; Prell 1931: 367; Ratzeburg 1871c: 85; Rhumbler 1922: 274, 1927: 284; Rimski-Korsakov et al. 1949: 269; Ring 1977; Roepke 1940: 168; Rupertsberger 1880: 227; Saalas 1913a: 67, 75, 1949: 340, 345; Scheidter 1936: 233; Schevyrew 1905b: 1088; Schimitschek 1955a: 140; Schindler 1962; Schreiber 1887: 220–223; Schwappach et al. 1929: 185; Schwerdtfeger 1944a: 172, 1957a: 180, 1981: 187; Sedlaczek 1935a: 155; Sieber & Benz 1985; Smith, J. B. 1886: 127; Spessivtsev 1913a: 37; Stanek 1969: 255; Stark 1926a: 331, 1952: 116; Taschenberg 1880: 240, 244; Tragardh 1914: 84, 1927: 63, 1930c: 470, 1939b: 151; Tredl 1908b: 138, 1915a: 99, 146; Wachtl 1901: 380; Weber, H. 1926: 573; Wolff 1927: 77; Wolff & Krausse 1922: 68. (**ds**) Acloque 1896, 1914; Adeli 1964; Anonymous 1844: 9; Austara et al. 1983; Balachowsky 1944b; Bangsholt 1975: 95; Barthe 1896; Bau 1888; Bedel 1888b: 397, 405; Beffa 1949; Bejer-Petersen & Jorum 1977: 3; Belousev 1916, 1917: 334–337; Boas 1923: 340; Borchert 1951; Brakman 1966b: 203; Browne 1968: 645; Budkov 1897; Buresh & Lazarov 1956; Butovitsch 1929: 9, 45–46; Butovitsch & Heqvist 1947; Calwer 1884, 1893; Carlisle & Crooke 1951: 131; Carpelan 1944; Cecconi 1906; Chapuis 1869: 53, 1873: 261; Chittenden 1890; Chrystal 1937; Crotch 1863; Crowson 1971: 51; Eggers 1904; Elton & Blackwaardt 1953; Endrodi 1958b; Ericson & Sandin 1893; Escalera 1919; Escherich 1923b: 440, 477, 489, 1932b; Esterberg 1928, 1959; Everts 1900, 1922: 636, 1925; Fowler 1891; Fricken 1889: 282; Fuchs 1904a, 1905a, 1905c: 340; Gabler 1949b; Gemminger & Harold 1872: 2696; Gerhardt 1898a; Gornostaev 1917; Gozis 1875: 80; Grill 1895: 312; Grune 1979: 35; Gyorfi 1941b; Hagedorn 1903a, 1910d: 87; Hansen, V. 1939, 1956, 1964: 456; Hellen 1947; Hellisen 1916: 83; Henschel 1895a: 156; Heyden 1876: 295; Heyden, Reitter, & Weise 1883: 181, 1891: 670, 1906: 708; Hickin 1963; Hill, D. S. 1987: 337; Horion 1951; Hormuzaki 1891: 174; Ishikura 1966; Janson 1856: 86; Jazentkovsky 1912: 285; Judeich & Nitsche 1895: 444, 483; Kangas 1942b; Karpinski 1925: 215, 1926: 81, 1933b: 22, 1951: 21; Karpinski & Strawinski 1948: 153; Keler 1922b: 210; Kemner 1919: 174; Kersten 1933: 72; Kirsch 1871: 169; Klefbeck & Sjoberg 1960: 228; Kleine 1912a: 215, 262, 267, 1913a: 34, 1913b: 152, 1914b: 250, 1934a: 169; Knotek 1892a: 35, 1894a: 553; Koca 1900: 116, 1905: 191; Koltze 1901: 152; Koppen 1882: 249; Kostenko 1929; Kraatz 1869: 59; Krivolutskaya 1958: 113, 1983; Krogerus 1921b: 115; Kurir 1947c: 24; Langhoffer 1915c: 156; Leclercq 1971; Leder 1871: 131; Lindberg & Saris 1952: 58; Lindemann 1884b: 264; Linder 1953: 71; Linnaniemi 1935: 45; Lokaj 1868: 63; Lomnicki 1886a: 241, 1913b: 147; Lovendal 1890c: 210; Lucht 1987: 275; Luigioni 1929: 990; Lunardoni & Leonardi 1889: 450; Lundberg 1974: 92, 1979: 31; Lundblad 1950c: 114; MacDougall 1929: 7; Mahler 1987: 232; Marchant & Borden 1976; Marcu 1926c: 58; Matthews & Fowler 1883: 42; Meinert 1887: 70; Michalski 1957c: 161, 1973a: 78; Munro 1921: 87, 1926; Munster 1928: 288; Murayama 1939: 137, 1940a: 229, 1942a: 53, 1954b: 197; Negru 1966b: 398; Nobuchi 1973a: 23; Nunberg 1928b: 86, 90, 1954: 91; Nuorteva 1971: 68; Nusslin 1898: 276; Orest 1926c: 58; Palm 1959: 24, 32, 214, 348; Palmen 1944: 60, 1946: 194; Pena 1928: 155; Perris 1876a: 25, 1877a: 44; Pfeffer 1924b: 472, 1931b: 7, 74, 1989a: 47; Pierce, W. D. 1917: 46; Pittioni 1943: 176; Pomerantzev 1907b: 491; Postner 1974: 385; Prossen 1913: 81; Rapp 1934: 716; Reitter 1894a: 40, 1916: 270; Rimski-Korsakov et al. 1949: 269; Rohrig 1955: 37; Roubal 1910: 203, 1941: 256; Saalas 1913a: 67, 75, 1931: 67; Sainte-Claire & Mequignon 1938: 443; Schaufuss 1915:

1203; Schaum 1859: 95, 1862: 100; Schedl 1980a: 3, 1981b: 44; Scheidt 1919: 165; Schevyrew 1890c: 469; Schilsky 1909: 186; Schiodte 1873: 104; Schneider & Leder 1977: 54; Schwerdtfeger 1981: 187; Seidlitz 1872: 389, 1891a: 556, 1891b: 602; Sharp & Fowler 1893: 34; Smith, J. B. 1886: 127; Sokanovskii 1960, 1966: 381; Stark 1926a: 331, 1926b: 101, 1926j: 123, 1927b: 85, 1931a: 21, 1931d: 542, 1952: 116; Stein 1868: 113; Stein & Weise 1877: 164; Stierlin 1898: 435; Stierlin & Gautard 1906: 205; Strand 1946: 395; Strand & Hansen 1935: 70; Thomson 1865: 374, 1868: 224; Tragardh 1914: 84, 1921: 119–127, 1922: 361–384; 1939b: 151; Tredl 1907: 5, 1908b: 138, 1917: 97–102, 146–154; Wichmann 1927a: 48; Winter, T. G. 1983: 42; Wiren 1945: 43; Wolff 1927: 77; Yanovskii 1974, 1977a, 1989; Yanovskii & Dmitrienko 1983; Yanovskii & Tegshzhargal 1985: 405; Zinovjev 1955: 187. (**tx**) Acloque 1896; Bach 1864; Balachowsky 1944b: 11–12, 15–16, 1949a: 70–71; Barbey 1901: 16, 351; Bedel 1888b: 397, 405; Beffa 1949, 1961; Boas 1923: 340; Butovitsch 1929: 8, 45–46; Chapuis 1869: 53, 1873: 261; Csiki 1906; Desbrochers 1891; Dombrowsky 1887, 1892; Duffy 1953: 11; Duftschmidt 1825: 107; Eggers 1908b: 144, 1912: 204–205, 1914: 298, 1922c: 14; Eichhoff 1881a: 40, 150–152, 1883a: 105, 129; Endrodi 1957b: 419; Escherich 1917: 97–115, 1923b: 440, 477, 489; Escherich & Escherich 1897; Everts 1903: 739, 1922: 636; Fauvel 1889; Ferrant 1911; Fricken 1889: 282; Gabler 1949b, 1955; Grune 1979: 34–35; Gyllenhal 1813: 346–348; Hagedorn 1910a: 124; Hansen, V. 1956, 1964: 456; Henry 1892: 10, 11; Henschel 1895a: 156; Jacobi 1906: 145; Jacquelin du Val & Fairmaire 1868: 103; Janson 1856: 87; Judeich & Nitsche 1895: 444, 483; Karpinski & Strawinski 1948: 153; Knotek 1892a: 35; Kuhnt 1913: 1047; Kurenzov 1941: 226–227; Letzner 1891: 374; Leunis 1886: 183; Lindemann 1881b: 171; Lovendal 1889b: 46, 1890c: 210, 1898: 55; Lucht 1987: 275; Luigioni 1929: 990; Lunardoni & Leonardi 1889: 450; Michalski 1959c: 172–173, 1967: 313–315, 1968b: 191, 1973a: 78–83, pl. 23a, 23b; Murayama 1939: 137–138, 1940a: 229, 1954b: 197; Negru 1966b: 398; Niisima 1928: 293, 1943: 142–143; Nobuchi 1973a: 23, pl. 2; Novak, V., Hrozinka, & Stary 1976: 111; Nunberg 1928a: 140, 1929c: 113, 1954: 91, 99–100; Nuorteva 1971: 71; Paykull 1800: 151; Pfeffer 1932b: 9, 1942a: 10, 1955a: 82–84, 1989a:pl. 5; Portevin 1935: 309; Postner 1974: 385; Quaschik 1953: 35; Ratzeburg 1837: 186; Reitter 1894a: 40, 1913a: 16, 1916: 270; Rey 1892b: 30; Rhumbler 1922: 274, 1927: 284; Rupertsberger 1880: 227; Saalas 1913a: 67, 75, 1919, 1949: 340, 345; Sawamoto 1943: 144; Schedl 1934f: 1633, 1941a: 42, 1948b: 45, 49, 1952f: 86, 1980a: 3, 1981b: 44; Scherb 1971; Schevyrew 1889a: 22, 1893a: 122–125, 1893b: 83–84; Schimitschek 1937: 43, 1955c: 73; Seidlitz 1872: 389, 1891a: 556, 1891b: 602; Sokanovskii 1954: 14, 1960: 676, 1966: 381, 384–385; Spessivtsev 1913a: 37–39, 1919: 246–247, 1922a: 457, 1925a: 153, 1925b: 5, 1931: 11–15; Stark 1952: 116–119; Stierlin 1898: 435; Stresemann et al. 1989: 353; Taschenberg 1880: 240, 244; Thomson 1865: 373–374, 1868: 224; Tsai & Li 1959: 76; Tsai, Yin, & Huang 1962: 7–8. (**ms**) Escherich 1932b; Kholodkovskii 1893: 390; Rohrl 1914a: 131.

amurensis Eggers 1908: 144 (*Eccoptogaster*). Lectotype ♂; Sibiria orientalis (Amur sup.); USNM, Washington, designated by Anderson & Anderson 1971: 4. Synonymy: Schedl 1948b: 49.

References: (**ay**) Butovitsch 1929: 6, 47. (**cn**) Arnoldi et al. 1955: 649; Kurenzov 1935c: 193, 1956a: 87. (**ec**) Halperin & Holzschuh 1984: 22; Kurenzov 1934a: 53. (**hb**) Halperin & Holzschuh 1984: 22; Kurenzov 1935a: 19, 21, 1948b: 1, 116; Stark 1952: 119; Yin, Huang, & Li 1984: 29. (**ds**) Butovitsch 1929: 6, 47; Hagedorn 1910d: 83; Halperin & Holzschuh 1984: 22; Kleine 1913b: 151, 1914b: 24, 1934a: 53, 1935a: 19, 21, 1935c: 193, 1936a: 110, 1938a: 60, 1957b: 15; Krivolutskaya & Kupyanskaya 1970; Kurenzov 1938a: 60, 1951b: 15; Sokanovskii 1966: 383; Stark 1952: 119; Yin, Huang, & Li 1984: 29. (**tx**) Anderson, W. H. & Anderson 1971: 4; Balachowsky 1949a: 70; Butovitsch 1929: 6, 47; Eggers 1908: 144, 1914, 1922c: 14–15; Hagedorn 1910a: 123; Krivolutskaya 1958: 113–115; Kurenzov 1941a: 83–84, 1948b: 116; Reitter 1913a: 16–17; Schedl 1934f: 1633, 1948b: 49; Sokanovskii 1954: 14, 1960: 676, 1966: 383; Stark 1952: 119; Yin & Huang 1980: 47; Yin, Huang, & Li 1984: 29.

sahlbergi Eggers 1912c: 204 (*Eccoptogaster*). Lectotype ♂; Dauria (Sibiria orient.); USNM, Washington, designated by Anderson & Anderson 1971: 29. Synonymy: Kolossov 1931: 118.

References: (**ds**) Kleine 1913b: 152, 1914b: 250; Sokanovskii 1966: 383. (**tx**) Anderson, W. H. & Anderson 1971: 28; Balachowsky 1949a: 70; Butovitsch 1929: 8; Eggers 1912c: 204–205, 1914: 298; Endrodi 1957: 419; Kolossov 1931: 118; Reitter 1913a: 16–17; Schedl 1934f: 1633, 1948b: 49; Sokanovskii 1966: 383.

sibiricus Eggers 1922c: 14 (*Eccoptogaster*). Holotype ♂; Werchne-Udinsk, Transbaikalien (= Ulhan-Ude, Zabaikalye, USSR); Eggers Collection, in NHMW, Wien. Synonymy: Schedl 1948b: 49.

References: (**ay**) Butovitsch 1929: 9, 47. (**hb**) Stark 1952: 119. (**ds**) Butovitsch 1929: 9, 47; Mandl 1931: 25; Stark 1952: 119. (**tx**) Balachowsky 1949a: 70; Butovitsch 1929: 9, 47; Eggers 1922c: 14; Niisima 1943: 143; Sawamoto 1943: 144; Schedl 1934f: 1633, 1948b: 49, 1979c: 228; Sokanovskii 1954: 14, 1960: 676; Stark 1952: 119.

lineatus Kurenzov 1941a: 104, 226. Lectotype ♀; Ussuri "Terney district"; IZL, Leningrad, designated by Michalski 1968b: 191. Synonymy: Michalski 1968b: 191.
References: (**bv**) Du 1987. (**hb**) Stark 1952: 145. (**ds**) Sokanovskii 1966: 390; Stark 1952: 145. (**tx**) Kurenzov 1941a: 104, 126; Michalski 1968a: 111, 1968b: 191; Schedl 1948b: 32; Sokanovskii 1966: 390; Stark 1952: 145.

***reflexus* Blackman** 1934: 13. Holotype ♂; Santa Catalina Mts., Arizona [USA]; USNM, Washington.
Figures: Edson 1967: 39 (adult), 56 (galleries).
Distribution: North America (Chihuahua, Durango, Nuevo Leon in Mexico/ Arizona, Colorado, New Mexico, Wyoming in USA).
Hosts: *Pseudotsuga menziesii*.
References: (cn) Doane et al. 1936; Keen 1952c: 160; Schuder 1969: 81. (**hb**) Doane et al. 1936; Edson 1967: 8; Keen 1952c: 160; Wood, S. L. 1982b: 434. (**ds**) Atkinson & Equihua 1988: 100; Blackwelder 1939; Edson 1967: 8; Furniss, R. L. & Carolin 1977: 404; Keen 1952c: 160; Schuder 1969: 81; Snow 1881: 70, 1883: 44; Wood, S. L. 1982b: 434. (**tx**) Blackman 1934: 13; Chamberlin 1939: 227; Edson 1967: 8, 39; de Ruette 1970: 113; Wood, S. L. 1977c: 388, 1982b: 434.
wickhami Blackman 1934: 13. Holotype ♂; Buena Vista, Colorado [USA]; USNM, Washington. Synonymy: Wood 1977c: 388.
References: (**hb**) Chamberlin 1939: 227; Edson 1967: 15. (**ds**) Blackwelder 1939; Chamberlin 1939: 227; Edson 1967: 15; Furniss, R. L. & Carolin 1977: 404. (**tx**) Blackman 1934: 13; Chamberlin 1939: 227; Edson 1967: 15, 44; de Ruette 1970: 113; Wood, S. L. 1977c: 388.

***robustus* Blackman** 1934: 19. Holotype ♂; Prescott, Arizona [USA]; USNM, Wasington.
Figures: Edson 1967: 48 (adult), 57 (galleries).
Distribution: North America (Arizona, Colorado, E Nevada, New Mexico, Utah in USA).
Hosts: *Abies concolor*.
References: (**cn**) Doane et al. 1936. (**ec**) Kinn 1971. (**hb**) Chamberlin 1939: 229; Doane et al. 1936; Edson 1967: 21; Wood, S. L. 1982b: 437. (**ds**) Blackwelder 1939; Chamberlin 1939: 229; Edson 1967: 21; Furniss, R. L. & Carolin 1977: 404; Wood, S. L. 1982b: 437. (**tx**) Blackman 1934: 8–19; Chamberlin 1939: 229; Edson 1967: 21, 48; de Ruette 1970: 113; Wood, S. L. 1982b: 437.

***rugulosus* (Muller)** 1818: 247 (*Bostrichus*). Syntypes, sex?; Odenbach, Germany; 1 at IRSNB, Brussels, many at ZIFH, Eberswalde.
Figures: Balachowsky 1949a: 56, 58, Michalski 1973a:pl. 43, Pfeffer 1989a:pl. 5, Yin, Hunag, & Li 1984: 38.
Distribution: Africa (Algeria/ Morocco/ Tunisia), Asia (Xinjiang in China/ India/ Iran/ Israel/ Pakistan/ Syria/ Turkey/ E USSR), Europe (Austria/ Belgium/ Bulgaria/ Corsica/ Cyprus/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Hungary/ Ireland/ Italy/ Luxemburg/ Netherlands/ Norway/ Poland/ Portugal/ Romania/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia), North America (introduced into: Durango in Mexico/ all provinces in Canada/ all states in United States), South America (introduced into: Argentina/ Peru/ Uruguay).
Hosts: *Malus* spp., *Pyrus* spp., *Prunus* spp., *Amelanchier* spp., *Crataegus* spp., *Sorbus* spp., *Cotoneaster* spp., *Cydonia oblonga*, *Mespilus* sp.
Notes: (3) Schedl 1948b: 12 (*pomorius* Bedel, nomen nudum, synonymy), Michalski 1973a: 96 (described var. *bucharicus*, no status in nomenclature).
References: (**ay**) Butovitsch 1929: 9, 51–57; Chararas, Katoulas, & Koutroumpas 1982; Escherich 1923b: 478, 513; Fisher 1954; Gahan 1900; Hopkins 1894g; Payne et al. 1973; Scherb 1971; Schneider-Orelli 1913: 27; Scholz 1905: 144; Thomas, J. B. 1967; Ting 1936: 95. (**bv**) Chararas 1980b: 561; Grune 1979: 39; Hellen 1921; Kirkendall 1984: 241; Majernik 1960; Michalski 1959c: 167, 1961d; Nickle 1971; Nuorteva 1956c: 94. (**cn**) Acatay 1943a: 58; Acloque 1914; Alden 1930: 31; Alderman, Gibbings, & Rumsey 1913: 30, 35; Annand 1948: 11–12, 1950: 24; Anonymous 1920: 35, 1926b: 17, 1951: 30, 1960q, 1960s, 1961e, 1961j, 1961r, 1962j, 1962z, 1963j, 1963n, 1963y, 1964j, 1964u, 1965b, 1965d, 1965r, 1966b, 1966p, 1966u, 1967d, 1968d, 1968p, 1969d, 1969m, 1970d, 1970m, 1971c, 1972d, 1973a, 1974c, 1975c, 1977c, 1979a, 1979s; Anthon 1947: 193–195, 1949: 205–206, 854, 1957; Anthon et al. 1950: 23–24; Armitage 1947: 204; Armitage et al. 1947: 204; Armstrong 1949: 7–8; Armstrong & Boyce 1958: 1, 5–6; Atkinson et al. 1986: 74–75; Ayomtantis 1953: 13; Baker 1898: 25–37; Balachowsky 1951, 1963a: 1256; Balachowsky & Mesnil 1935: 18–21; Baldwin 1912: 97, 1914: 16, 1916: 131; Barbey 1902: 164, 1925: 549; Beach 1899: 381–445; Beal & Massey 1945: 66–67; Becker 1912: 29, 1913: 29; Bentley 1930: 92; Berlese 1915; Bethune 1907: 18, 1909: 32; Bissell & Firor 1947: 25; Blackman 1950; Blair 1937: 170; Bogue 1897: 22; Borcea 1930: 270; Borg 1933, 1935: 3, 43–46; Borodin 1915: 87; Boyd 1945: 131–132, 1953: 159–160; Brandt 1952, 1957; Brannon 1925: 6; Brichet 1943: 54–55; Britton 1897: 234–245, 1931: 502, 1933: 138, 1934: 156; Britton & Zappe 1927: 133–134; Brooks 1916: 3; Brown et al. 1935: 5, 1938: 4, 1942: 4; Bruner 1899; Brunson 1929: 11, 18; Buckley 1911: 3, 5; van Buren & Huested 1911: 451; Burgess 1906: 658, 1907: 18; Burke 1932: 368–369; Butz 1897: 21–28; Caesar 1908: 110, 1909: 13, 1910: 18, 1914: 25–31, 51, 1921: 145, 1930; Campbell 1936: 10; Canela 1921: 253–256; Chabrolin 1929: 365–366; Chamberlin 1924; Chamberlin & Dustan 1954: 27–28, 1967: 29–30; Chandler 1909: 360, 1912: 251, 1913: 53, 1939: 33–36, 1950: 18–19; Chandler &

Flint 1935a: 10, 1939a: 10–12; Chararas 1957e; Chase 1915: 26, 1920: 29, 1922: 43; Childs et al. 1946: 4; Chittenden 1898b: 8, 1899b: 96–99, 1902, 1905: 346–347, 1909; Chorbadzhievo 1926: 175–241, 1929; Close & Ballard 1911: 190; Cochran et al. 1951: 10; Conradi 1905: 6; Conradi & Thomas 1909: 7; Cory 1923: 160; Costa Lima 1956; Crosby 1918: 4, 8; Cummings 1950: 14; Currie 1905: 13, 19–20; Davidson & Lyon 1979: 373, 1987: 404; Davis 1921: 277–282, 1937: 230–239, 1947: 150; Davis & Gardner 1931: 11–12; Dean 1918: 197, 1922: 181; Dean & Peairs 1913: 2, 16; Dewey 1947: 59; Dixon 1913: 136; Doane et al. 1936; Dominguez Garcia-Tejero 1944, 1955: 211–279; Douglass 1908: 154, 1910: 100, 1912: 45, 127; Downes et al. 1947: 83; Drooz 1985: 356; Duporte 1919: 62; Dzhambazishvili 1961: 1253–1254; Earley 1949; Eastham 1915: 18–21; Ebeling 1950, 1959: 436; Eddy 1942: 350–352; Eddy & Dutsch 1943: 1, 1944: 71; Eddy & Hawthorn 1943: 32; Eddy et al. 1934: 226; Engel 1949; Escherich 1923b: 478, 513; Essig 1913: 658, 1915: 455, 1917: 43–64, 1926: 510, 1958: 510; Essig & Hoskins 1944: 16; Esterberg 1959; Every 1951: 23–24; Faville 1898: 2; Felt 1905: 403, 1906: 453, 1910: 89, 1913: 93, 1926: 324, 1930a: 324, 1933: 49, 1934b: 318; Felt & Rankin 1932: 369, 420; Ferguson et al. 1947: 17; Fernald 1921: 147, 1926: 148–149; Fernando 1935; Fintzescu 1936b; Fiori 1950; Fisher 1937c: 110–128; Fletcher 1899: 110; Flint 1926: 9, 21; Fluke 1920: 34; Fogle et al. 1973: 46; Forbes 1889: 23, 245, 1890b, 1891: 469–478; Frank 1925: 5, 112; Fulton, Wright, & Gregg 1911: 30; Funk 1907: 216; Garcia-Tejero 1935: 227; Gardner 1914: 60; Garman 1884, 1908; Garman et al. 1953: 35–37; Gavalov 1927: 8–16; Gehin 1857b: 63; Gentry, G. R. et al. 1979, 1980: 257, 1982; Gentry, J. W. 1965: 90; Ghillini 1952; Gillette 1920: 21, 1923: 15; Gillette & List 1915: 29; Gilliatt 1929: 12; Gintzenberg 1914: 108, 1915: 111; Goble 1956: 39–40; Goidanich 1941: 130–141; Golfari 1946: 129–170; Goncalves 1945: 17–25; Goodfellow & Colberg 1958; Gornostaev 1917: 308–315; Gossard 1905b: 19, 22, 1908: 51, 301, 1909: 81, 1911: 97, 114, 118, 123, 1913: 6, 1914: 1; Gossard & Walton 1922: 83–126; Goureau 1861: 110, 1865: 22; Gradojevic 1935; Graf Marin & Cortes Pena 1940: 351–357; Grandi 1951; Green 1923: 43–44; Grigorovich 1960; Gyorfi 1946: 193, 195, 1959; Hadley 1917: 125; Hagedorn 1910c; Hagen 1884; Harrar 1915: 2, 32; Harris 1932: 25–26; Haseman 1911: 223, 1917: 27, 1936: 12; Hatch 1938: 192; Hawthorne 1964; Hay & Wooten 1955: 11–12; Hayward 1941: 89, 1942: 28; Head et al. 1955: 7; Headlee 1915: 631–698; Hedrick 1936: 56; Hellen 1921; Henderson 1918: 21; Herrick 1912: 44, 1925: 740, 1935: 206; Hess 1900: 56; Hess & Beck 1914: 243, 1927: 298; Hewitt & Hayhurst 1911: 435; Hildebrand 1944: 16, 1947: 45–46; Hill, D. S. 1983: 512; Hines & Bennett 1955: 9; Hodson & Beaumont 1928: 29; Hoffmann 1913: 218–220, 1916: 260, 1952a: 104, 1952b: 402; Hopkins 1894c, 1894d, 1899b: 15, 1899c: 295; Horne, Essig, & Hermes 1923: 10; Houser 1932: 70; Howard 1889: 129; Hungerford 1944: 53–54; Hunter 1922: 178–182, 184–194; Humphrey 1935: 19; Hutson 1931: 28, 1933: 30–32, 1937: 58, 1941: 60–61, 1952: 42; Isaac 1934: 161–166; Jacklin & Yonce 1968: 882–884; Jarvis 1909: 259; Johnson, C. W. 1897, 1899: 344, 1900: 393, 1901a: 343; Johnson, W. T. & Lyon 1976: 216; Jones, D. H. 1911, 1929: 19; Judeich & Nitsche 1895: 444, 486; Kamp 1959; Kangas 1940: 32–34; Kelley 1918: 11; Kemner 1916: 21; Kholodkovskii 1912: 290; Klages 1896: 12; Kleine 1932a: 303; Koppen 1882: 250; Korolkov 1929: 20; Kotte 1941: 64, 1948: 70, 1958: 117; Kovacevic 1928: 33–41; Kovach & Gorsuch 1985; Krainsky 1914: 329–339, 358–361, 379–385, 407–412, 423–430, 436–458; Ksenjopolsky 1914: 29; Lahille 1924: 28; Lamiman 1937: 33; Lanham & Hays 1916: 23; Lathrop 1919: 15–16, 1922: 147–245; Lehker et al. 1955: 18–19; Lesne 1917: 222–224; Letzner 1880: 355; Leuchs 1955: 550–551; Lewis, Chase, & Turner 1919: 15; Lichtenstein & Picard 1920: 54–55; Lincoln 1949: 7; Lindblom 1936: 26; Lindquist, O. H. & Syme 1981: 100; Lintner 1885b: 575, 1886: 85, 341, 1889: 103–107, 1896: 270; Lochhead 1900: 72, 1902: 104, 1914: 82; Lockwood 1929: 770; Lockwood & Gammon 1949: 195; Lokaj 1906: 22; Lovett 1923: 44; Lowe 1900: 122–128; Lozovoi 1948c: 364; Lugger 1899a: 85–331; Lustner 1913a: 4; Mabee 1922: 6; Mackie 1932: 745–761; Mackie et al. 1943: 255; MacNay & Creelman 1958: 12; Majernik 1957: 71, 1959: 196, 198–203; Malkov 1905: 51; Manis & Portman 1950: 49–50; Marchal & Foet 1921; Marcovitch & Stanley 1945: 21; Marcu 1926c: 59; Martelli 1914: 165–170, 677–682, 1915: 165; Massee 1934: 170, 1935: 165–172, 1946: 90–95; McCampbell 1936: 2; McDaniel 1933: 25–27; McHatton & Harvey 1919: 170; Mead 1972: 1; Metcalf & Flint 1928: 530, 1939: 627, 1951: 700; Miatello 1913: 333–337; Mickle 1953: 32; Mickle & Newton 1951: 25–26; Milbrath 1950: 23; Mokrzecki 1913: 56; Molinari 1942: 452–456; Moritz 1920: 22; Morris, H. M. 1937: 22; Morschel 1972: 212; Mote 1944: 5–7; Moulton 1932: 747; Moultrie 1952: 17; Mourikis & Vassilaina-Alexopoulou 1975: 145; Muller 1912: 184; Muller-Thurgau, Osterwalder, & Schneider-Orelli 1917: 416–426; Murtfeldt 1894: 40; Neary 1943: 31, 1944: 29; Newcomer 1941: 36, 1945: 52–53, 1950: 23, 35, 51, 1966: 35; Newell 1904: 103, 1912: 1, 13; Niven 1913: 10, 1915: 49; Noll 1938: 43; O'Kane 1914: 241; Ormerod 1895: 76–79, 1896: 76, 1898: 197–201; Osservatorio 1914: 48; Osterwalder 1921: 6–9; Packard 1890: 860; Paillot 1926: 836–840; Parker 1943: 6; Parrott 1912: 209, 1931: 26–27, 1934: 6, 1935: 6; Parrott & Fulton 1915: 553; Patterson &

Neary 1950: 85, 1951: 98; Peairs 1909: 63, 1941: 333–334; Peklo 1946: 340; Pelekassis 1962; Pelton 1948: 15; Penhallow 1882: 38; Pepper 1926: 1, 3; Perro 1963: 52; Pettit 1899: 363–365, 1904: 53–55, 59, 1929: 2, 1930: 8, 86; Pettit & Hutson 1931: 33–34, 55–56; Picard 1921: 15–20; Pierce, W. D. 1917: 46; Pierstroff & Parks 1930: 4; Pirone, Dodge, & Rickett 1960: 178; Pliginsky 1915: 20; Plotnikoff 1914: 140–642; Popenoe 1899: 40–46, 439–439, 1906: 987; Portman & Manis 1954: 51–52; Putnam 1947: 48; Quaintance 1899: 56–59, 1901: 103, 1905: 346, 1908: 122, 1909: 21, 122; Quaintance & Siegler 1918: 89, 1922: 66, 1931a: 78, 1931b: 75–76; Rabate 1911: 198; Ranojevic 1906: 211; Reay 1969: 50; Rhumbler 1922: 274, 1927: 285; Riley 1880b: 298, 1883: 182; Riley & Howard 1891: 298; Rings 1953: 70–71, 73, 76–78, 1956: 42, 44–48; Ritzema 1915: 301–331; Robek 1930: 95–98; Roepke 1931: 162, 1947: 114–116; Rosborough et al. 1947: 15; Rosenfield 1908: 112, 1910: 215; Ross & Caesar 1921: 42–50, 1922: 45; Ross & Putnam 1933: 39; Ruffinelli 1944: 27; Ruggles 1941: 31; Rumsey 1905: 25, 1906, 1907: 31, 1908: 234; Rumsey & Brooks 1909: 17; Russo 1926: 75–86; Ruszkowski 1925: 35; Sacharov 1913: 1–25, 1914: 29; Sacharov & Shembel 1915: 162; Sachtleben & Pape 1922: 26–101; Samal 1931: 98–103; Sanborn 1912: 27; Sanders 1946: 17; Sanderson 1912: 544, 1921: 477, 1931: 300–302; Santoro 1960b; Sargent 1905: 30; Sarra 1930: 223–227; Savary 1946: 94; Schimitschek 1935b: 146, 1937: 43, 1944: 154, 1951a: 101, 1952c: 60, 1955a: 148, 1955c: 73; Schlyter et al. 1987; Schneider 1957: 616; Schneider-Orelli 1913: 25–110, 1915a: 66–67, 1915b: 47, 1916: 17–21, 1917a: 6; Scholl 1916: 11–15, 1922: 76; Schuh & Mote 1948: 119–120; Schvester 1951b: 3, 1956: 35, 1957: 1–162; Schwartz 1975a, 1975b: 25, 1979: 220, 1980: 225; Schwarz 1888: 30; Schwerdtfeger 1944a: 174, 1957a: 182; Scott 1912: 63; Scudder 1886: 195; Sherbakoff & Stanley 1943: 59; Sherman 1900: 98, 1903: 5–6, 10, 21; Shull 1944: 46–47; Shull & Fisher 1940: 52–53; Sifroshvili & Akhaladze 1966: 358; Sitowski 1930: 13; Slingerland 1897: 804; Slingerland & Crosby 1914: 277; Smith, J. B. 1894, 1900: 364, 1905: 87, 1906: 165, 1909: 416, 1910: 55, 1911: 36 Smith, L. M. 1932: 3–13, 1947: 1, 3, 1948: 62; Smith, R. I. 1905: 19; Smith, R. I. & Lewis 1906: 77; Snapp 1928: 27–28, 1936: 26, 1941: 17–19, 1954: 17–18; Soares 1945: 137; Soenen & Paternotte 1972; Somes 1915: 17; Sorachi 1934: 40–42, 1937: 48, 1941: 48–49; Souphieff & Scherbinovskaja 1937: 56; Starnes 1899: 225–229, 1904: 253–254; Stedmann 1898: 1–12, 1905: 57; Stewart 1917: 357; Strickland 1916: 1099, 1923: 208; Sturgis 1894: 142, 1895: 191; Surface 1907: 503, 1911: 4, 92, 167; Swaine 1910d: 42, 1918a: 32; Swanson & Michelbacheri 1945: 6–7; Swarap & Rajan 1985; Swenk 1909: 106; Symons 1904: 97, 1905: 129; Talbert & Murneek 1939: 157; Talhouk 1950: 134, 1954: 306; Theobald 1909: 111; Thompson, B. G., Jones, & Mote 1944: 7, 1948: 7–8; Thompson, W. L. 1945: 3, 21; Titus & Pratt 1904: 20; Treherne 1911: 20, 1912: 23; Troop 1894: 126–130; Trujillo 1942: 148–149; Tubeuf 1936: 500; Tucker 1905: 623; Tullgren 1916: 104; Twigg 1911: 319; Urbahns 1925: 161–164; Uvarov 1913: 32; Vostrikov 1913: 40–41; Vukasovic 1932: 20–47; Wachtl 1901: 381; Wahl 1924: 27–74, 1926: 21–48; Wahl & Muller 1914: 70; von Wahl 1914: 4; Walker 1898: 214–215, 1924: 52, 226; Wallace 1942: 540; Wallace et al. 1927: 32–62; Warburton 1917: 209–219; Washburn 1903: 57, 81, 91; Watson 1918: 241, 1942: 14; Weber, H. 1926: 577; Webster 1895: 23–25, 1897: 363, 1899: 143–149, 449; Weiss 1912: 433, 1915: 165–166; Weldon 1918: 383, 1939: 56; Wellhouse 1922: 1107; Whitten 1950: 5; Wichmann 1927b: 354; Wille 1941: 26, 1943: 257–259; Williams & Price 1911: 125; Willison 1937: 331; Wilson G. F. 1945: 148–150; Wilson, G. F. & Becker 1960: 86; Wilson, H. F. 1909: 4, 93; Wilson, M. C., Schuder, & Provonsha 1982: 67; Wolcott 1933: 201–202; Wood, C. D. 1897: 78; Worsham 1909: 77, 207; Wressell 1946: 58; Wright 1915: 1410; Young 1942: 9, 1943: 11; Zakhorov & Levkovich 1951: 302; Zanardi 1960; Zirngiebl 1901: 58; Zvierzomb & Zubovsky 1918: 36. (**ec**) Arambourg 1944: 119, 1964: 115; Ashmead 1901; Ashraf & Berryman 1969: 12, 1970: 206; Balazy & Michalski 1960, 1964b; Barbey 1902: 164; Boucek 1957a, 1957b: 80; Brittain 1927; Burks 1943, 1979: 774; Bushing 1965: 467; Chabrolin 1929; Chararas 1956b, 1957d; Chittenden 1893b; Deyrup & Gara 1978: 276; Elliot & Morley 1907; Escherich 1925a; Favard 1962; Felt 1906: 453; Fisher 1954; Fintzescu 1930; Furniss, R. L. & Carolin 1977: 404; Gahan 1946; Garcia 1970; Giraud & Laboulbene 1877: 434–435; Graf Marin & Cortes 1940; Graham 1969: 879; Grissell 1975: 765; Gyorfi 1941b, 1943: 84, 1962, 1962: 213; Heqvist 1963, 1967: 69; Houser 1931: 659, 1932: 70; Jamnicky 1957b: 18, 20, 77; Jones 1911; Kangas 1942b; Kaya 1984; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1983; Kleine 1908c: 177, 1909a: 42; Klimesch 1914c: 59; Kokueva 1900: 556; Kolubajiv & Kalandra 1954: 30; Kopyl 1983; Kostenko 1929; Laumond & Ritter 1971; Leuch 1955: 550; Lima & DaCosta 1962; Lindeman 1964: 112; Lozovoi 1948c: 364; Majernik 1958: 93; Marsh 1979: 157; Matthews 1970; Mendel 1985; Mendel & Gurevitz 1985; Metcalf & Flint 1928: 530, 1939: 627, 1951: 700; Michalski 1973b, 1976; Michalski & Ratajczak 1989; Moller & DeVay 1968: 1501; Mote 1944: 5; Newcomer 1958: 91; Nickle 1971; Nickle & Welch 1984: 637; Nosek 1956: 204, 1959a: 118, 1959b: 87; Novak, P. 1952: 410; Nunberg 1930: 203–204; Nuorteva 1957b: 66; Nusslin 1927: 285; Peklo 1946: 340; Perris 1856a: 243; Pfeffer

1923a: 329, 1931b: 7, 1943b: 179; Pierce, W. D. 1908: 383; Poinar 1975: 167; Reid 1957b: 6; Rondani 1873: 163, 1876: 64; Ruhm 1956: 3; Rummukainen 1954: 27; Russo 1926b: 84; Saalas 1930: 118; Schedl 1932: 1; Schimitschek 1930a: 340, 1941a: 320, 1955a: 148, 1964e; Schlyter et al. 1987; Schneider-Orelli 1913: 27; Schvester 1952a: 98, 1957b: 11–161, 1959: 769; Schwerdtfeger 1944a: 174, 1957a: 182; Sedlaczek 1935a: 162; Silvestri 1911: 389; Sitowski 1930: 2; Smith, J. B. 1889: 216; Sokanovskii 1936: 74; Stedmann 1898: 3; Swarup & Rajan 1985; Szczepanski 1960a: 409, 1961: 10; Talhouk 1961: 208; Tanada 1963: 462; Tehon 1942: 239; Thompson, W. R. 1943: 106; Thompson, W. R. & Simmonds 1964: 36, 1965: 4; Tudor 1969: 33; Vietinghoft 1924: 337; Wagner 1928: 15; Wiackowski 1958: 174; Wichmann 1955a: 92; Wilson 1945: 149; Zanardi 1960. (**hb**) Acatay 1943a: 58; Adeli 1972: 14; Altum 1881c: 249; Baker, W. L. 1972: 238; Balachowsky 1963a: 1256; Balachowsky & Mesnil 1935; Balbi 1944; Barbey 1901: 16, 39, 1925: 549; Bargmann 1906; Bauer 1905; Beal & Massey 1945: 66–67; Beffa 1949, 1961; Berlese 1915; Blackman 1922b, 1950; Bright 1976d: 29; Bright & Stark 1973: 14; Britton 1897; Buddenberg 1885: 91–97; Budkov 1897; Burke 1932; Caesar 1908, 1916: 44, 1930: 59–61; Cecconi 1924; Chamberlin 1939: 225, 1958: 58; Chamberlin, G. C. & Dustan 1954: 27–28, 1967: 29–30; Chandler 1939; Chapman 1869c; Chararas 1957e; Chittenden 1890, 1898b, 1899b, 1909; Chorbadzhievo 1929; Costa Lima 1956; Dallimore & Munro 1922; Davidson & Lyon 1979: 373, 1987: 404; Dillon & Dillon 1961: 805; Doane et al. 1936; Dombrowsky 1887, 1892; Drooz 1985: 356; Ebeling 1950; Eckstein 1897; Eichhoff 1881a: 41, 157, 1882a: 250, 322; Escherich 1923b: 478, 513; Essig 1915a: 309, 1926: 510, 1958: 510; Evans 1952: 141; Everts 1900, 1903: 741; Favard 1962; Felt 1906: 453, 1926: 324, 1930a: 324; Felt & Rankin 1932: 369, 420; Fintzescu 1930b: 245; Fisher 1954; Fogle et al. 1973: 46; Forbes 1891; Forsius 1920: 220; Fuchs 1904a, 1905c: 340; Furniss, R. L. & Carolin 1977: 404; Furst 1888: 626; Gahan 1900; Garcia 1970; Garmen et al. 1953: 35; Girard 1873; Goble 1956: 39; Gornostaev 1916: 309; Gossard 1913; Grandi 1951; Gyorfi 1957; Hagedorn 1903a, 1910c; Hagen 1884: 161–163; Hennings 1908c: 212; Henschel 1876a: 202, 242, 1895a: 156; Herrick 1935: 206; Hess 1900: 56; Hess & Beck 1914: 243, 1927: 298; Hill, D. S. 1983: 512b, 1987: 337; Hilter 1909; Hoffmann 1941; Hopkins 1894g: 280, 1899a: 343–344, 1899b: 15, 1899c: 295; Hornung 1840: 164; Jamnicky 1957d; Janjua 1950; Judeich & Nitsche 1895: 444; Kamp 1959; Karpinski 1933b: 23; Karpinski & Strawinski 1948: 153; Kholodkovskii 1912: 290; Klages 1896: 12; Kleine 1932a: 303; Knotek 1894a: 557, 1898b: 318; Kostin 1960: 130; Kotte 1941: 64; Krausse 1915: 156; Kunstler 1871: 62–63; Lengerken 1939: 50, 1954: 69; Lepiney & Mimeur 1932: 44; Letzner 1846: 78, 1880: 335–336; Lincoln 1949: 7; Lindeman, G. V. 1978; Lindemann 1881b: 171, 1887: 197; Lozovoi 1960: 7, 1961: 91; Lugger 1899a: 313; Lunardoni & Leonardi 1889: 453; Lustner 1913a: 4; Lutz 1918: 405; Madon 1930: 99; Majernik 1957: 71; Masutti 1964; McDaniel 1933: 25; Metcalf & Flint 1928: 530, 1939: 627, 1951: 700; Michalski 1959c: 167; Morschel 1972: 212; Morstatt 1924: 24, 46; Munro 1926: 46; Newcomer 1966: 35; Nordlinger 1855: 186, 1856: 44, 1869: 335; Nosek 1956: 204, 1959a: 118, 1959b: 87; Nunberg 1929a: 93, 1929c: 114, 1947c: 100; Nuorteva 1956c: 94; Nusslin 1898: 276, 1927: 285; Osterwalder 1921: 7; Packard 1890: 860; Palm 1959: 346; Perris 1856a: 243; Peyerimhoff 1919: 249; Pfeffer 1942a: 16; Pierce, W. D. 1907: 293; Postner 1974: 387; Ratzeburg 1837: 186, 1839: 230; Rhumbler 1922: 274, 1927: 285; Robek 1930: 96; Roepke 1940: 168, 1947: 116; Rupertsberger 1880: 228; Schedl 1932: 1–2, 1981b: 40; Schimitschek 1930a: 340, 1944: 154, 1955a: 148; Schneider-Orelli 1913: 27; Schvester 1957b: 11–161; Schwerdtfeger 1944a: 174, 1957a: 182; Sedlaczek 1935a: 162; Silvestri 1911: 389; Smith, J. B. 1886: 127; Smith, L. M. 1932: 3–13, 1947: 1; Stark 1926a: 331, 1952: 139; Stedmann 1898: 3; Swaine 1907: 191, 1910c: 58, 1912b: 141, 1918a: 52; Szymczakowski 1960: 182; Talbert & Murneek 1939: 157; Taschenberg 1880: 240, 246, 1901: 107; Theobald 1909: 111; Thompson, B. G. et al. 1944: 7; Titus & Pratt 1904: 29, 31, 37; Tschorbadjiev 1929: 156; Vasseur & Schvester 1948: 87; Viana 1964: 129; Wachtl 1901: 381; Weber, H. 1926: 577; Wichmann 1910b: 209, 1927b: 354; Wilson, G. F. & Becker 1960: 86; Wolff & Bromberg 1909: 101–102; Wood, S. L. 1982b: 424; Zimgiebl 1901: 58; Zocchi 1959: 103. (**ds**) Acloque 1896, 1914; Adeli 1972: 14; Ammann & Knabl 1913; Anonymous 1926c: 514, 1961r, 1962j, 1962z, 1963j, 1963y, 1964j, 1964u, 1965b, 1965d, 1965r, 1966b, 1966p, 1966u, 1967d, 1968d, 1968p, 1969d, 1969m, 1970d, 1973a, 1975c, 1977c, 1979a, 1979s; Audras & Schaefer 1957; Bach 1849c; Balachowsky 1944b, 1951, 1963a: 1256; Balazy & Michalski 1960; Balbi 1944; Barthe 1896; Bau 1888; Beal & Massey 1945: 66–67; Beaulne 1956; Bedel 1888b: 388, 406; Beffa 1949; Bejer-Petersen & Jorum 1977: 6; Bielz 1851, 1887; Blackman 1922b: 43–44, 1950; Blackwelder 1939, 1947; Blanchere & Robert 1889; Blatchley & Leng 1916: 590; Borchert 1951; Brakman 1966b: 203; Brancsik 1871, 1906; Bright 1976d: 29, 1987a: 2; Bright & Stark 1973: 14; Britton 1920a; Bruch 1914a; Buck 1955b: 191; Budkov 1897; Buresh & Lazarov 1956; Butovitsch 1929: 9, 51–57; Calwer 1884, 1893; Carpentier & Delaby 1908; Chamberlin 1939: 225, 1958: 58; Champion 1894; Chandler & Flint 1935a; Chapman 1869: 121–131, 1870b, 1900: 77; Chapuis

1869: 60, 1873: 268; Chapuis & Candeze 1853; Chittenden 1890, 1893: 250, 1898b, 1899b, 1902, 1903, 1909; Chorbadzhievo 1924d, 1929; Chrystal 1937; Conradi 1906; Costa Lima 1956; Crotch 1863; Currie 1905; Dallimore & Munro 1922: 189–193; Debatisse 1945; Deyrup 1981b: 5; Dodge 1938; Drooz 1985: 356; Dzhambazishvili 1961b; Ebeling 1950, 1959; Eder 1934; Eggers 1904; Endrodi 1958a, 1958b, 1981: 184, 1986: 217; Ericson & Sandin 1893; Escalera 1919; Escherich 1923b: 478, 513; Essig 1915a: 309, 1915b, 1926: 510, 1958: 510; Esterberg 1928, 1959; Evans 1952: 141; Everts 1900, 1922: 637, 1925; Eyquem 1891; Fairmaire 1880a; Farahbakhsh 1964; Favre 1890; Felt 1926: 324, 1930a: 324; Felt & Rankin 1932: 369, 420; Forster 1849: 440; Fowler 1891; Frost & Dietrich 1929; Fuchs 1904a, 1905a, 1905c: 340; Furniss, M. M. 1978; Furniss, R. L. & Carolin 1977: 404; Garman et al. 1953: 35; Gast et al. 1989: 385; Gaubil 1849: 127; Gehin 1857a: 392; Gemminger & Harold 1872: 2696; Gentry, J. W. 1965: 90; Georgiou 1977: 75; Gilliland & Farahbakhsh 1963; Gornostaev 1912; Gozis 1875: 80; Gredler 1866: 372; Grill 1895: 313; Groves 1858; Grune 1979: 39; Gyorfi 1941b; Hagedorn 1903a, 1910d: 87; Hamilton 1885: 48, 1889: 159, 1894b: 407, 1895a: 378; Hansen, V. 1939, 1956, 1964: 457; Heinemann 1908a; Hellen 1947; Henschel 1895a: 156; Henshaw 1885: 149; Heyden 1876: 296; Heyden, Reitter, & Weise 1883: 181, 1891: 670, 1906: 708; Hickin 1963; Hill, D. S. 1983: 512, 631, 1987: 337; Hoffmann 1940: 60, 1942: 12, 1952a: 104, 1952b: 402; Holdhaus 1912: 454; Hopkins 1893a: 140, 144, 146; Horion 1949, 1951; Hormuzaki 1888: 156; Hubbard 1892: 30; Hubbard & Schwarz 1878b: 626; Jansson 1915: 93; Jazentkovsky 1912: 286; Johnson, C. W. 1901a: 343; Johnson, W. T. & Lyon 1976: 216; Judeich & Nitsche 1895: 444; Kaddou 1967: 13; Kadyrov 1988: 43–44, 1989; Kaltenbach 1874: 149, 154, 179; Kangas 1942b; Karpinski 1925: 215, 1926: 81, 1931: 21, 36, 1933b: 23, 1948b: 229; Karpinski & Strawinski 1948: 153; Keen 1929a: 13; Keler 1925b: 270; Kelleher 1986: 67; Kersten 1933: 72; Kestercanek 1881a: 12; Kiefer et al. 1942: 528; Kirk 1969, 1970; Klefbeck & Sjoberg 1960: 228; Kleine 1912a: 161, 262, 267, 1913a: 34, 1913b: 152, 1914a: 16, 19, 1914b: 245, 1932a: 303, 1934a: 169; Knotek 1892a: 36, 1894a: 557, 1898b: 318; Knowlton 1931: 10; Knull 1934: 211; Kobakhidze 1957: 177; Koca 1905: 192; Koltze 1901: 152; Koppen 1882: 250; Kostenko 1929; Kotula 1873b: 80; Kraatz 1869: 59; Lacordaire 1866: 387; Langhoffer 1915c: 156; Leclercq 1971; Leng 1920: 337; Leonard 1928: 514; Lepiney & Mimeur 1932: 44; Lindemann 1884b: 264, 1887: 197; Lindquist, O. H. & Syme 1981: 100; Lokaj 1868: 63; Lomnicki 1886a: 241; Lucht 1987: 275; Luigioni 1929: 990; Lunardoni & Leonardi 1889: 453; Lundblad 1950c: 114; Mackie et al. 1943: 255; MacNay & Creelman 1958: 12; Majernik 1960; Majzlan et al. 1987; Marcu 1926c: 59; Matthews & Fowler 1883: 42; Meinert 1887: 70; Michalski 1961d, 1973a: 126; Mirzoian 1950: 139; Moragues 1889: 32; Mourikis & Vassilaina-Alexopoulou 1975: 145; Negru 1957: 129, 1966b: 398, 1968a: 454, 1968c: 91; Newcomer 1958: 91; Newell 1904: 103; Novak, P. 1952: 410, 1964; Nunberg 1928b: 88, 93, 1947a: 29, 1954: 91; Nusslin 1898: 276; Oliveira 1887: 327; Orest 1926c: 59; Ortzen 1886: 279; Paganetti-Hummler 1901: 150; Palm 1959: 59, 212; Patterson & Hatch 1945: 148; Pelekassis 1962; Perris 1876a: 254, 1877a: 414; Peyerimhoff 1919: 249; Pfeffer 1931b: 7, 76, 1989a: 51; Pierce, W. D. 1917: 46; Pittioni 1943: 174; Pjatnitskii 1930a: 163; Postner 1974: 387; Powell, J. A. & Hogue 1979: 313; Proctor 1946: 206; Prossen 1913: 82; Quaintance 1908: 122; Ragusa 1924: 114; Rapp 1934: 718; Ratzeburg 1837: 186, 1839: 230; Redtenbacher 1858: 838, 1874: 373; Reitter 1869b: 154, 1894a: 43, 1916: 272; Revy & Siroki 1942: 82; Robek 1930: 96; Roubal 1935b: 72, 1941: 254; Ruffinelli Rey 1967; Saalas 1930: 118, 1931: 67; Sainte-Claire & Mequignon 1938: 442; Schaufuss 1915: 1205; Schedl 1960a: 79, 1961b: 186, 1964j, 1965g: 26, 1966f: 81, 1967c: 74, 1969g: 288, 1971b: 529, 1971d: 426, 1971f: 148, 1972d: 130, 1974a: 85, 1978c: 293, 1978e: 36, 1979e: 57, 1979i: 288, 1980a: 3, 1981b: 40; Schevyrew 1890c: 470; Schilsky 1909: 187; Schimitschek 1951a: 101, 1952c: 60; Schiodte 1873: 105; Schuh & Mote 1948: 119; Scudder 1886b: 195; Seidlitz 1872: 390, 1891a: 557, 1891b: 603; Sharp & Fowler 1893: 34; Sick 1939: 110; Smith, J. B. 1886: 127, 1894: 565–572, 1898: 385, 1900: 364, 1910: 403, 1911: 36–37; Sokanovskii 1936: 74, 1960, 1966: 390; Souphieff & Scherbinovskaja 1937: 56; Stark 1926a: 331, 1926b: 101, 1926j: 124, 1927b: 86, 1952: 139; Stein 1868: 114; Stein & Weise 1877: 164; Stierlin 1898: 436; Stierlin & Gautard 1871: 294, 1906: 205; Strand 1970; Sturm 1843: 229; Swaine 1909: 106, 1910: 33, 1913: 41–43; Szymczakowski 1960: 182; Talhouk 1950: 134, 1954: 306, 1961: 208; Thomson 1865: 376, 1868: 224; Tredl 1907: 6; Tressens 1952: 89; Tschorbadjiev 1929: 156; Viana 1964: 129; Welch, R. C. 1980: 272; West 1938: 184; Westhoff 1882: 238; Wichmann 1910b: 209, 1927a: 51, 1955a: 92; Wiepken 1883: 89; Winter, T. G. 1983: 44; Wood, S. L. 1948: 10, 1951a: 127, 1972a: 396, 1977a: 72, 1982b: 424; Yanovskii & Tegshzhargal 1985: 405; Yin, Huang, & Li 1984: 37; Zinovjiev 1955: 186, 191; Zochhi 1959: 103. (**tx**) Acloque 1896; Bach 1854; Balachowsky 1944b: 4, 1949a: 56–57, 1963a: 1256, 1260; Barbey 1901: 16, 39; Bargagle 1884: 93; Beal & Massey 1945: 66–67; Bedel 1888b: 388, 406; Beffa 1949, 1961; Benoit 1986: 238; Bertolini 1872; Blackman 1922b: 43–44, 1934: 5–6, 10; Blatchley & Leng 1916: 590; Boheman 1859: 88–89; Brancsik 1871; Bright 1976d: 28, 29; Butovitsch 1929: 9, 51–52; Carpentier & Delaby 1908; Chamberlin 1939: 225, 1958: 43; Chapuis 1869: 60, 1873: 268; Chapuis & Candeze 1853; Chorbadzhievo 1924d; Comstock

1948; Costa Lima 1956; Csiki 1906; Davidson & Lyon 1979: 374; Desbrochers 1891; Dillon & Dillon 1961: 801; Dodge 1938: 20–21; Dombrowsky 1887, 1892; Duffy 1953; Edwards 1959; Eggers 1911a, 1922c: 13, 1922d: 121, 1923b: 134, 1931a: 16, 1931b: 184, 1932c: 24, 1933b: 13, 1941c: 123; Eichhoff 1864b: 32, 1881a: 41, 157, 1883a: 105, 130; Endrodi 1957b; Escherich 1923b: 478, 513; Escherich & Escherich 1897; Everts 1903: 741, 1922: 637; Fauvel 1889; Ferrant 1911; Formanek 1907: 10; Girard 1873; Goble 1956: 39; Grigorovich 1960: 37; Grune 1979: 38–39; Hagedorn 1910a: 124; Hansen, V. 1956, 1964: 457; Henschel 1876a: 202, 242, 1895a: 156; Hoffmann 1935: 84, 87, 1939; Hopkins 1915c: 188–189, 203; Houlbert 1922a: 5; Iablokoff-Khnzorian 1961: 71; Jacques 1951: 348; Johnson, W. T. & Lyon 1976: 217; Judeich & Nitsche 1895: 444; Kalina 1970: 128; Karpinski & Strawinski 1948: 153; Keen 1929a: 13; Keler 1928: 15; Knotek 1892a: 36; Kuhnt 1913: 1049; Kulinich 1965: 135–138; Lacordaire 1866: 387; LeConte 1878b: 626; Letzner 1846: 78, 1891: 374; Leunis 1886: 183; Lezhava 1940: 71–72, 1943: 193–194; Lindemann 1881b: 171; Lindquist, O. H. & Syme 1981: 100; Lomnicki 1913b: 147; Lovendal 1889b: 49, 1898: 64; Lucht 1987: 275; Luigioni 1929: 990; Lunardoni & Leonardi 1889: 453; Lutz 1918: 405; Maknovskii 1966: 91; Michalski 1959c: 169–172, 1961d: 57–59, 1968b: 194–195, 1973a: 126–130, pl. 43; Muesebeck 1942: 100, 1950: 137; Muller 1818: 247; Negru 1966b: 398; Nordlinger 1848: 254, 1856: 44; Nunberg 1929c: 114, 1930: 200, 1947: 29, 1954: 91; Panzer 1793: fig. 11; Perris 1877a: 414; Pfeffer 1932b: 11, 1942a: 16, 1955a: 78–79, 1989a:pl. 5; Porter 1932: 106; Portevin 1935: 311; Postner 1974: 387; Powell, J. A. & Hogue 1979: 313; Quaschik 1953: 35; Ratzeburg 1837: 186, 1839: 230; Redtenbacher 1849a: 361, 1849b: 27, 1858: 838, 1874: 373; Reitter 1894a: 43, 1913a: 22, 1916: 272; Rey 1892b: 30; Rhumbler 1922: 274, 1927: 285; Rupertsberger 1880: 228; Schaum 1859: 95, 1862: 100; Schedl 1934f: 1632, 1937b: 158, 1939d: 412, 1939j: 564, 1939m: 169–171, 1947c: 62, 1948b: 12, 1948d: 36, 1950d: 16, 1951d: 16, 1952a: 444–445, 1952f: 86, 1952h: 67, 1957: 616, 1959: 36, 1962p: 201, 1964: 97, 1967: 68–74, 1972d: 130, 1980a: 3, 1981b: 40; Scherb 1971; Schevyrew 1893a: 88, 90, 1893b: 120–121; Schimitschek 1955c: 73; Schmidberger 1837: 270–273; Schwartz 1975b: 25; Seidlitz 1872: 390, 1891a: 557, 1891b: 603; Semenov 1902: 268; Sokanovskii 1930: 803, 1936: 73, 1954: 15, 1958: 37, 1960: 675–676, 1966: 390; Spessivtsev 1913: 41, 1921: 315, 1922a: 458, 1925a: 153, 1931: 29–30; Stark 1952: 138–139; Stierlin 1898: 436; Swaine 1909: 106–107, 1910a: 33, 58, 1918a: 52; Taschenberg 1880: 240, 246, 1901: 107; Thomas, J. B. 1967; Thomson 1865: 376, 1868: 224; Titus, Meikle, & Harrison 1985: 116; Wood, S. L. 1951a: 127, 1972a: 396, 1977a: 72, 1982b: 424; Yin & Huang 1980: 48; Yin, Huang, & Li 1984: 37. (**ms**) Balachowsky 1963a: 1256; Essig 1931: 884; Gotz 1877; Hatch 1938: 192; Heinemann 1908a; Hellen 1921; Hopkins 1893e: 63; Klimesch 1914c: 59; Merino-Rodriguez 1966: 42; Parrott 1935: 6; Popenoe 1899, 1906: 987; Schvester 1960; Swaine 1907: 191, 1912b: 141.

punctatus Ratzeburg 1837: 187 (*Eccoptogaster*). Syntypes, sex?; Germany; not given. Synonymy: Schedl 1948b: 12.

Notes: (1) Cited in synonymy, never validated, no status in nomenclature.

References: (**tx**) Hopkins 1915c: 220; Ratzeburg 1837: 187; Schedl 1948b: 12.

haemorrhous Schmidberger 1837: 270. Syntypes, sex?; Europe; not given. Synonymy: Ratzeburg 1837: 187, Schedl 1948b: 12.

References: (**cn**) Froggatt 1899; Kollar 1840: 263; Walsh 1867b: 58. (**hb**) Dombrowsky 1892; Froggatt 1899; Kollar 1840: 263. (**ds**) Chapuis & Candeze 1853; Perris 1876a, 1877a: 414; Schaum 1859: 95, 1862: 100; Stein 1868: 114; Stein & Weise 1877: 164; Sturm 1826: 194; Villa & Villa 1833: 26. (**tx**) Balachowsky 1949a: 56; Butovitsch 1929: 9; Chapuis & Candeze 1853; Dombrowsky 1892; Letzner 1891: 374; Perris 1877a: 414; Ratzeburg 1837: 187; Schedl 1948b: 12; Schmidberger 1837: 270; Villers 1789: 215.

assimilis Boheman 1858: 88. Syntypes, sex?; Buenos Aires, Argentina; NHR, Stockholm. Synonymy: Schedl 1962p: 201.

References: (**ay**) Butovitsch 1929: 6. (**cn**) Kleine 1932a: 304; Pierce, W. D. 1917: 175. (**ec**) Lima & DaCosta 1962: 249; Tudor 1969: 34. (**hb**) Kleine 1932a: 304; Viana 1964: 129. (**ds**) Blackwelder 1947; Bruch 1914a; Butovitsch 1929: 6; Gemminger & Harold 1872: 2695; Hagedorn 1910d: 83; Kleine 1913b: 151, 1914b: 333, 1932a: 304; Lacordaire 1866; Pierce, W. D. 1917: 175; Viana 1964: 129. (**tx**) Boheman 1858: 88; Butovitsch 1929: 6; Eggers 1931a: 16; Hagedorn 1910a: 123; Lacordaire 1866; Schedl 1937h: 155–158, 1962p: 201.

fauveli Reitter 1894a: 43. Syntypes, sex?; Kaukasus, Armenien, Persien; NHMB, Budapest. Synonymy: Michalski 1973a: 127.

Notes: (1) Originally listed as a variety, but treated incorrectly by some authors as a subspecies of *rugulosus*.

References: (**ds**) Negru 1968c: 91; Reitter 1894a: 43, 1916: 349; Sokanovskii 1966: 390. (**tx**) Eggers 1922d: 121; Michalski 1973a: 127; Reitter 1894a: 43, 1916: 349; Schedl 1934f: 1632, 1948b: 12; Sokanovskii 1966: 390.

mediterraneus Eggers 1922d: 121 (*Eccoptogaster*). Lectotype ♂; Adana, Asia Minor; USNM, Washington, designated by Anderson & Anderson 1971: 19. Synonymy: Schedl 1948b: 12.

Notes: (3) Balachowsky 1949a: 57 (treated as a good species).

References: (**ay**) Butovitsch 1929: 8, 57–58. (**bv**) Ascher & Gurevitz 1972; Chararas 1980b: 561; Chararas et al. 1982: 1094; Gurevitz & Ascher 1973; Gurevitz & Ishaaya 1972; Levy et al. 1974. (**cn**) Ascher et al. 1975; Balachowsky 1951, 1963a: 1259; Gentry, J. W. 1965: 90; Grandi 1951, Greckin 1956: 1483; Pelekassis 1962; Talhouk 1976. (**ec**) Fischer 1962: 299; Fry 1989: 18; Gurevitz 1976; Heqvist 1967: 69. (**hb**) Balachowsky 1963a: 1259; Chodjai 1963: 139; Grandi 1951; Greckin 1956: 1483; Gurevitz 1975, 1976; Stark 1952: 138; Talhouk 1976. (**ds**) Ayoutantis et al. 1953: 13; Balachowsky 1951, 1963a: 1259; Butovitsch 1929: 8, 57–58; Gentry, J. W. 1965: 90; Halperin 1969: 333; Kobakhidze 1957: 177; Kleine 1934a: 169; Luigioni 1929: 990; Mahnovskii 1958: 65; Normand 1949: 104; Pelekassis 1962; Pfeffer 1947d: 126; Sokanovskii 1966: 390; Stark 1952: 138. (**tx**) Anderson, W. H. & Anderson 1971: 19; Balachowsky 1949a: 55–57, 1963a: 1259–1260; Butovitsch 1929: 8, 57–58; Eggers 1922d: 121; Iablokoff-Khnzorian 1961: 71; Luigioni 1929: 990; Schedl 1934f: 1632, 1948b: 12; Schmidt, G. 1980: 22; Sokanovskii 1954: 15, 1966: 390; Stark 1952: 138. (**ms**) Ascher & Gurevitz 1972; Balachowsky 1963a: 1259.

rugulosus similis Butovitsch 1929: 52. Syntypes, sex?; Deutschland, Tschechoslowakien; NHR, Stockholm. Synonymy: Schedl 1948b: 12.

References: (**ds**) Reitter 1916: 349; Sokanovskii 1966: 390. (**tx**) Butovitsch 1929: 52; Reitter 1916: 349; Schedl 1934f: 1632, 1948b: 12; Sokanovskii 1966: 390.

caucasicus Butovitsch 1929: 54. Syntypes, sex?; Dzhubga (Krasnodar Territory), USSR; NHR, Stockholm. Synonymy: Schedl 1948b: 12.

References: (**ds**) Dzhambazishvili 1961, 1962; Sokanovskii 1966: 390. (**tx**) Butovitsch 1929: 54; Schedl 1934f: 1632, 1948b: 12; Sokanovskii 1966: 390.

rugulosus samarkandicus Butovitsch 1929: 56. Syntypes, sex?; Samarkand (Uzbekistan), USSR; NHR, Stockholm. Synonymy: Schedl 1948b: 12.

References: (**ds**) Sokanovskii 1966: 390. (**tx**) Butovitsch 1929: 56; Schedl 1934f: 1632, 1948b: 12, 1958g: 165; Sokanovskii 1966: 390.

rugulosus sanctaluciae Hoffmann 1935: 84, 87. Syntypes, sex?; article not seen; not located. Synonymy: Michalski 1973a: 127.

References: (**tx**) Balachowsky 1949a: 57; Hoffmann 1935: 84, 87; Michalski 1973a: 127; Schedl 1948b: 12.

manglissiensis Lezhava 1940: 71. Syntypes, sex?; Manglissi, Georgia, USSR; Institute of Zoology, Academy of Science, Tbilisi. Synonymy: Sokanovskii 1954: 13.

References: (**ds**) Arnoldi et al. 1955: 655; Sokanovskii 1966: 390. (**tx**) Lezhava 1940: 71; Sokanovskii 1954: 13, 1966: 390.

taxicola Lezhava 1941: 193. Lectotype, sex?; Tsagveri prope Borzhomi, Georgia, USSR; IZL, Leningrad, designated by Michalski 1968a (cited in Michalski 1973a: 127). Synonymy: Sokanovskii 1954: 13.

References: (**ds**) Sokanovskii 1966: 390. (**tx**) Lezhava 1940b: 193 (or 1943: 193–194); Michalski 1968a: 113, 1973a: 127; Sokanovskii 1954: 13, 1966: 390.

rugulosus baluchistani Schedl 1958g: 165. Syntypes, sex?; Baluchistan, Quetta; FRI, Dehra Dun and Schedl Collection in NHMW, Wien. Synonymy: Wood 1982b: 425.

Notes: (1) Schedl reported the return of syntypes to the FRI, Dehra Dun, but all specimens sent to him are accounted for and are in the Schedl Collection in NHMW, Wien.

References: (**tx**) Schedl 1958g: 165, 1979c: 217; Wood, S. L. 1982b: 425.

rugulosus intermedius Sokanovskii 1960: 675. Syntypes, sex?; Tezhkent, Uzbekistan, USSR; Sokanovskii Collection. Synonymy: Michalski 1973a: 127.

References: (**ds**) Sokanovskii 1966: 390. (**tx**) Michalski 1973a: 127; Sokanovskii 1960: 675, 1966: 390.

***schevyrewi* Semenov** 1902: 265. Holotype ♂; Valley of the Great Julduss, eastern Tien Shan, China; not located.

Figures: Michalski 1973a:pl. 12, Yin, Huang, & Li 1984: 22.

Distribution: Asia (Hebei, Heilongjiang, Henan, Ninxia, Qinghai, Shanxi in China/ Korea/ Mongolia/ E USSR).

Hosts: *Ulmus* spp., *Prunus* spp., *Pyrus* sp., *Caragana* spp., *Eleagnus* sp., *Salix* sp.

Notes: (3) Eggers 1910e: 35 (named variation *sinensis*, no status), Michalski 1964: 668 (named aberration *laevifrons*, no status).

References: (**ay**) Butovitsch 1929: 31. (**cn**) Pfeffer 1979: 149; Yagdyev 1979. (**ec**) Kurenzov 1934a: 50; Lindeman 1961: 99–100; Pfeffer 1979: 149; Yang 1989. (**hb**) Kostin 1960: 130; Kurenzov 1935a: 20, 22; 1948b: 121; Makhmadzieev & Shukronaev 1983; Stark 1952: 100. (**ds**) Butovitsch 1929: 31; Hagedorn 1910d: 88; Kadyrov 1988: 43–44, 1989; Kaszab 1977: 66; Kleine 1913b: 152, 1914b: 247, 251; Krivolutskaya 1983; Krivolutskaya & Kupyanskaya 1970; Kurenzov 1934a: 50, 1935a: 20, 22; Michalski 1973a: 49; Sokanovskii 1960: 676, 1966: 381; Stark 1952: 100; Yanovskii & Tegshzhargal 1985: 406; Yin, Huang, & Li 1984: 22. (**tx**) Butovitsch 1929: 31; Eggers 1910d: 35–36, 1910e: 35, 1921: 43, 1922: 116–117, 1931: 43; Hagedorn 1910a: 124; Kurenzov 1938a: 79, 1941: 79, 1948b: 121, 1962: 31; Michalski 1964: 668, 1969c: 661, 1973a: 49–52, 1973a:pl. 12; Murayama 1930: 9;

Reitter 1913a: 18; Schedl 1934f: 1633, 1941a: 42, 1948b: 53–54; Semenov 1902: 265–266; Sokanovskii 1954: 14, 1960: 676, 1966: 387; Stark 1952: 100–101; Tsai & Li 1959: 75; Tsai, Yin, & Huang 1962: 5–6; Wichmann 1915: 214–215; Yin & Huang 1980: 47; Yin, Huang, & Li 1984: 22.

frankei Wichmann 1915b: 214. Syntypes 2♂, 2♀; Vernyi (= Alma-Ata), Kazakhstan, USSR; Wichmann Collection. Synonymy: Eggers 1921: 43.

References: (**ds**) Sokanovskii 1966: 387. (**tx**) Eggers 1921: 43; Schedl 1934f: 1633, 1948b: 53, 1952; Sokanovskii 1966: 387; Wichmann 1915b: 214–215.

emarginatus Wichmann 1915b: 246 (*Eccoptogaster*). Holotype ♂; Ferghana, Alai, Turkestan; Wichmann Collection. Synonymy: Eggers 1921: 43.

References: (**ds**) Sokanovskii 1966: 387. (**tx**) Butovitsch 1929: 9; Eggers 1921: 43; Schedl 1934f: 1633, 1948b: 53; Sokanovskii 1966: 387; Wichmann 1915b: 215–216, 246.

transcaspicus Eggers 1922d: 116 (*Eccoptogaster*). Holotype, sex?; Transkaspien (Turkmenia, USSR); Eggers Collection, in NHMW, Wien. Synonymy: Schedl 1948b: 53.

References: (**ay**) Butovitsch 1929: 10, 31. (**ds**) Butovitsch 1929: 10, 31; Sokanovskii 1966: 387. (**tx**) Butovitsch 1929: 10, 31; Eggers 1922d: 116–117; Michalski 1968a: 113; Schedl 1934f: 1633, 1948b: 53, 1979c: 254; Sokanovskii 1966: 387.

seulensis Murayama 1930b: 5. Holotype, sex?; Seoul, Korea; Murayama Collection in USNM, Washington. Synonymy: Schedl 1948b: 53.

References: (**ec**) Yoon et al. 1982. (**hb**) Yin, Huang, & Li 1984: 22; Yoon et al. 1982. (**ds**) Arnoldi et al. 1955: 660; Cho 1957; Choo 1983: 41; Choo & Woo 1985: 163; Choo, Woo, & Nobuchi 1988a: 133; Kleine 1934a: 169; Ko 1962: 283; Murayama 1930b: 5, 1936b: 116, 1937b: 374, 1940a: 230, 1942a: 50; Sokanovskii 1966: 387; Yin, Huang, & Li 1984: 22. (**tx**) Choo 1983: 41; Murayama 1930b: 5, 1937b: 374, 1940a: 230; Schedl 1934f: 1634, 1948b: 53; Sokanovskii 1966: 387; Yin & Huang 1980: 47; Yin, Huang, & Li 1984: 22.

***scolytus* (Fabricius)** 1775: 59 (*Bostricus*). Syntypes 3, sex?; Angliae Dom. Lee; 1 at Colon Museum, 2 at UZMC, Copenhagen.

Figures: Bevan 1987: 116, Michalski 1973a:pl. 24, Postner 1974: 382.

Distribution: Asia (N Iran/ Turkey), Europe (Austria/ Belgium/ Bulgaria/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Hungary/ Italy/ Luxemburg/ Netherlands/ Norway/ Poland/ Portugal/ Romania/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia).

Hosts: *Ulmus* spp., rare in *Carpinus betulus*, *Fraxinus excelsior*, *Juglans regina*, *Populus nigra*, *Quercus* spp., *Salix* spp.

Notes: (3) Rey 1892: 30 (named var. *ciliaris*, no status), Sokanovskii 1958: 37 (named var. *variabilis*, no status).

References: (**ay**) Anderbrant, O. & Schlyter 1987a; Arnold & Barson 1977; Blight, Henderson, & Wadhams 1983; Blight et al. 1978; Chararas 1956a: 145; Chararas, Chipoulet, & Courtois 1979; Escherich 1914: 310, 1923b: 478, 492; Grove 1983; Henderson & Wadhams 1981; Jeffries & Fairhurst 1982; Lekander 1959b: 92; Mamaev & Semenova 1961; Marcus 1930: 644; Nusslin 1911a: 155; Robertson 1961; Schwerdtfeger 1929: 360; Wadhams 1982; Wadhams, Angst, & Blight 1982. (**bv**) Anderbrant, O. & Schlyter 1987b; Barr, B. A. 1969: 643; Blight 1981; Blight, Henderson, & Wadhams 1983; Blight, Wadhams, & Wenham 1978, 1979a, 1979b; Blight et al. 1977, 1978, 1979a, 1980, 1981, 1982, 1983; Borden & King 1977, 1978; Chararas 1980b: 561; Chararas et al. 1982: 1094; Gerken & Grune 1978; Grove 1983; Grune 1979: 35; Inscoe 1982; Jeffries & Fairhurst 1982; Keyserlingk 1982; Kirby, S. G. & Fairhurst 1981b, 1983; Klassen, Ridgway, & Inscoe 1982; Klimetzek & Kopp 1983; Maksimovic 1979a; Manojlovic 1986b; Michalski 1959c: 170; Minks & van Deventer 1978; O'Callaghan 1982a; O'Callaghan & Atkins 1981; O'Callaghan, Gallagher, & Lanier 1978; Peacock 1979; Prell 1926: 69, 1931: 368; Svihra & Volney 1983: 519; Vite et al. 1976; Wadhams 1982; Wadhams, Angst, & Blight 1982; Walker, C. 1974; Walker, C. & Ross 1975; Webber & Kirby 1983. (**cn**) Acatay 1943a: 54; Aerts 1921; Androic 1966: 46; Anonymous 1921j: 72, 1925c: 121, 1930j: 231, 1931d: 45, 1965l, 1975q, 1979p; Ass & Funtikow 1941; Austara et al. 1983; Barson 1977; Beattie 1931, 1933: 488, 1934: 569–570, 1935: 189–190; Beaver 1969; Bechtold 1950; Bejer-Petersen 1978; Betrem 1930a: 273–288; Bevan 1987: 129; Bevan & Davies 1972: 102; Blatchford 1983: 29; Blight et al. 1979a, 1980; Boocock 1959b; Bosman & Meijermann 1969: 325–330; Boyce 1938; Brasier 1983: 100; Brill 1930, 1931; Britton 1936: 109–110; Browne 1968: 645; Buisman 1932: 17–36; Bussman 1949; Butovitsch 1927: 170, 1934; Chararas 1956: 113–213, 1972; Chorbadzhievo 1929; Claydon, Grove, & Pople 1977, 1985; Clinton & McCormick 1936; Dammerman 1950: 154–155; Daviault 1945b: 280; Draghetti 1947; Dudley 1928; Eckstein 1926: 596; Ehnstrom 1985; Ermisch 1928; Esbjerg & Bejer-Petersen 1979; Escherich 1914: 310, 1923b: 478, 492; Esterberg 1959; Fairhurst & Fairhurst 1981; Felt 1933a, 1934b: 317, 1943: 58–64; Finney & Mordue 1976; Finney & Walker 1977, 1979; Fisher 1928: 53–61, 1931: 120–131, 1937: 110–128; Fransen 1931a: 49–62, 1931b: 169–183, 1933: 38, 1935a, 1935b, 1937, 1939a, 1939b; Fransen & Buisman 1935; Franz 1947b, 1948e; Fystro 1960;

Gabler 1955; Gante 1930; Garbers 1930; Garcia-Tejero 1955: 227; Gavalov 1926: 39–42; Georgescu et al. 1957: 356, 445; Gerbach 1949; Gibbs 1974, 1978a, 1978b; Gibbs, Brasier, & Burdekin 1973; Gibbs, Burdekin, & Brasier 1966, 1977; Gmelin 1878a; Goidanich & Goidanich 1934; Greig 1977; Grossmann 1932; Gyorfi 1946: 195, 1959; Hahmann 1937: 155, 163, 1938: 110; Harris 1826; Hasek 1961: 5; Hedger 1979; Hermann 1931; Hess & Beck 1927: 293; Hofinger 1922; Inglis 1937: 193; Joly 1949b: 254; Kaiser 1931; Kalandra & Pfeffer 1935: 6; Kamuishnuii 1925: 14–16, 53–55; Karnosky 1976; Kholodkovskii 1912: 276, 289; King, C. J. 1977a, 1979; King, C. J. & Fielding 1983; Knop 1928: 68; Knull 1934: 865–866; Kobakhidze 1960: 1851; Kock 1932: 151; Koning 1939: 2014; Kovacevic 1957: 67, 69; Kraschnina 1941: 45; Kurir 1937: 19; Lachmann 1859: 93; Laurie 1958: 298; Leach 1940b: 227; Lekander 1954b: 7; Liese 1952: 59; Liese & Butovitsch 1931: 1111; Liming 1948: 6; Linde & Zenneck 1927: 345; Linder 1931: 66–67; Lozovoi 1948b: 354; Lustner et al. 1935: 81; Mahieu 1979; Maksimovic & Motal 1983; Mamaev & Semenova 1961: 351–358; Manka 1953: 355; Marcu 1926c: 58; Maslov 1963: 80–100, 1964, 1971; Mathiesen 1950: 74; May 1934: 3; May & Gravatt 1931: 6; Mazzone & Peacock 1985; McCallum 1946: 206; Metcalf & Flint 1951: 799; Middleton 1934: 264; Minks & van Deventer 1978; Mostauskis 1923: 219–240; Mostovsky 1923: 287–288; Mumenthaler 1944: 50–52; Mumford 1965: 32, 1966: 40; Nilsson, A. 1982; Novak, V., Hrozinka, & Stary 1976: 110; Nusslin 1913: 204; O'Callaghan & Atkins 1981; O'Callaghan, Atkins, & Fairhurst 1984; O'Callaghan & Fairhurst 1981; O'Callaghan, Gallagher, & Lanier 1978; Orest & Marcu 1926: 81–87; Ozolin 1959: 139; Padii 1955: 54; Pajares & Arevalo 1987; Pape 1924: 284; Parker et al. 1947: 6; Pascovici et al. 1963: 153–175; Paulian 1943: 316; Peace 1932: 171–172, 1936: 737, 1951b: 1951, 1954: 155–164; Pechuman 1938: 537–543; Pesson 1955: 315–328; Pfeffer 1979: 148; Pierce, W. D. 1917: 96; Poinar 1971; Quievy 1906: 675; Ratzeburg 1871a: 403, 1871c: 83; Readio 1935: 343–344; Reay 1969: 50; Redfern 1977; Rey 1930: 262; Rhumbler 1922: 274, 1927: 284; Roepke 1931: 161, 1932: 70, 1934: 91–93; Rovskii 1950: 1478; Roy 1948: 235; Rudiger 1936: 13; Sakharov 1925: 83–84; Schimitschek 1927: 279, 1935b: 145, 1951a: 101, 1955a: 153, 1955c: 73; Schindler, K. 1860: 19, 1861: 16; Schlyter et al. 1987; Schmidt 1881: 90; Schroder 1974; Schwappach et al. 1929: 185; Schwerdtfeger 1944a: 172, 1956a: 19, 1957a: 181; Scott, King, & Walker 1974; Scott & Walker 1975; Semedo 1961: 118; Sheldon 1979; Siemaszko 1939; Sitowski 1930; Slander 1947b: 215; Smirnov 1935: 123–128; Smith, P. J. 1976; Spaic 1956: 88; Spassky 1916: 219–226; Spierenburg 1921: 53–60; Sprengel 1930: 72; Stefan 1961; Stefanov 1947: 8; Stepanov 1951: 52; Strojny 1970; Tomasevski 1956: 42; Tubuef 1935: 56, 1936: 484; Vajda 1952: 114; Valekenier-Suringar 1922: 145; Vorontson et al. 1987; Wachtl 1901: 380; Walker, C. 1973a, 1974; Walsh 1867b: 58; Walter 1947: 109; Walter et al. 1943: 6; Webber 1981, 1982; Weber, H. 1926: 576; Welch et al. 1934: 9; Went 1938: 141–154, 1954: 109; Wichmann 1927b: 348; Wilson, G. F. & Becker 1960: 86; Wolff & Krausse 1922: 67–68; Wollenweber 1930: 3; Wollenweber & Stapp 1928: 283; Worthley 1935b: 2; Worthley & Liming 1935: 526; Wttewaall 1864: 187; Yde-Andersen 1982; Zakharov & Levkovich 1951: 300; Zieger 1950b: 38, 1952: 24; Zimmermann, G. & Bathon 1983; Zivojinovic 1963: 450. (**ec**) Anderbrant, O. & Schlyter 1987b; Anonymous 1930j: 231; Apel 1983; Arambourg 1964: 115; Arnold & Barson 1977; Ashraf & Berryman 1969: 15; Askew & Ruse 1970; Ass & Funtikow 1941; Balazy 1965a; Balazy & Michalski 1960, 1964b; Balazy et al. 1977; Barson 1974, 1976a, 1976b, 1977; Beattie 1934b; Beaver 1965b: 238–240, 1966a, 1966b, 1967a, 1967c, 1967d, 1967e, 1968, 1969, 1970, 1974b; Bejer-Petersen 1978; Benson 1974; Benson & Walker 1974; Bevan & Davies 1972: 102; Blight, Wadhams, & Wenham 1979a; Blight et al. 1977, 1978; Borden 1983, 1984; Borden & King 1978; Bosman & Weyeraan 1969: 325–330; Brasier 1983: 100; Bucher 1963: 128; Burges, Grove, & Pople 1979; Callaham & Shifrine 1960: 146; Chararas 1956b, 1959a; Claydon, Grove, & Pople 1977, 1985; Cooreman 1963: 46; Crowson 1976; Doane 1960; Doberski 1980, 1981a, 1981b; Doberski & Tribe 1978, 1980; Elliot & Morley 1907; Elton 1970; Escherich 1935; Espanol 1967a; Fairhurst & King 1983; Francke-Grosmann 1931; Fransen 1931: 49–62, 169–183, 1932: 187–202, 1933: 38, 1937a, 1937b, 1939a, 1939b; Fry 1989: 18; Fuchs 1914b, 1933; Galoux 1947b; Gaumann 1946: 157; Gauss 1954a: 423; Gibbs 1974, 1978a, 1978b; Gibbs, Brasier, & Burdekin 1973; Gibbs, Burdekin, & Brasier 1977; Gibbs & Grieg 1977; Graham 1969: 879; Greig 1977, 1981; Grootaert, Haghebaert, & Pollet 1987; Grossmann 1931a; Grove 1983; Gyorfi 1941b, 1943: 83, 1962, 1964: 213; Haeselbarth 1967; Heqvist 1963; Hirschmann 1960, 1971a, 1971b: 40; Hirschmann & Wisniewski 1982, 1983; Hirschmann & Zirngiebl-Nicol 1961; Hoffard & Coster 1976: 130; Hunt, D. J. 1972; Hunt, D. J. & Hague 1974a, 1974b, 1976; Jamnicky 1957b: 13, 20, 1957c; Kakuliya & Devdariani 1967; Karnosky 1976; Kaya 1984; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1980a, 1980b, 1983; Kirby, S. G. & Fairhurst 1981a, 1981b, 1982, 1983; Kleine 1908c: 177, 1909a: 78, 1944: 73; Kobakhidze 1960: 1851; Kokueva 1900: 569; Kostenko 1929; Kraemer 1950b: 380; Kreig 1961: 200; Krezal 1959: 574; Krivosheina 1974; Kurir 1937: 19; Laidlaw 1932: 117–129; Lea

& Brasier 1983; Leach 1940b: 227; Lindeman 1963: 1582–1584, 1964: 78–82, 113; Lipa 1968; Lipa & Chmielewski 1977; Lovendal 1890a: 146; Lozinskij 1966; Mahieu 1979; Maksimovic 1979a, 1979b, 1986a; Maksimovic & Motal 1981, 1983; Marshall 1978; May 1934: 3; Merlin 1984; Metcalf & Flint 1951: 799; Meyer 1934: 612; Mozolevskaya 1987; Nikitsky 1978; Nosek 1959a: 118, 1959b: 86; Nunberg 1930: 204; Nuorteva 1957b: 52; Nusslin 1927: 284; O'Callaghan 1982a; O'Callaghan, Atkins, & Fairhurst 1984; Oldham 1930: 240; Otten 1940: 197; Pesson et al. 1955: 316; Pfeffer 1928b: 2, 1943b: 179, 1979: 148; Poinar 1971, 1975: 169; Prell 1926: 69, 1930: 89–127; Purrini 1975, 1977a; Rafes 1962; Ratzeburg 1869a: 176; Rennerfelt 1951: 122; Rodendorf 1950: 81; Roepke 1930: 153–154, 1930b: 232–237, 1932: 70, 1934: 91, 1935: 121–124, 1946: 543; Rossem 1979; Ruhm 1955c: 176, 1956b: 3, 1957: 351; Schaarschmidt 1959: 803; Scheidter 1936: 233; Schimitschek 1930a: 288, 1955a: 153, 1964e; Schlyter et al. 1987; Schroder 1974; Schwerdtfeger 1929: 360, 1944a: 172, 1957a: 181; Scott & Walker 1975; Sengonca & Leisse 1984; Sheldon 1979; Silvestri 1911: 387; Sitowski 1930: 2; Smetana 1958: 63; Stammer 1933: 152; Stefanov 1949a: 97, 107; Stepanov 1951: 52; Sweetman 1936: 108; Szczepanski 1960a: 412; Tenkacova & Mituch 1987; Thompson, W. R. 1943: 106; Thompson, W. R. & Simmonds 1964: 36, 1965: 6; Tudor 1969: 33; Walker, C. 1973a; Walker, C. & Ross 1975; Webber 1981, 1982; Webber & Gibbs 1989; Webber & Kirby 1983; Weiser 1968, 1969; Went 1954: 109; Westerboer & Bernard 1963: 498; Wiackowski 1958: 174; Wichmann 1916: 12, 1954d: 437; Wisniewski 1979b; Wollenweber 1930: 3; Wollenweber & Stapp 1928: 283; Wright 1935: 526; Yde-Andersen 1982, 1983a; Zimmermann, G. & Bathon 1983. (**hb**) Acatay 1943a: 54; Adeli 1972: 14; Aerts 1921; Altum 1880a, 1881c: 243, 1889c; Apel 1983; Balachowsky 1963a: 1253; Barson 1974; Beaver 1965a, 1966c, 1967b: 156, 1967d, 1969; Beffa 1961; Berg 1827; Bevan 1987: 121; Bonnemaison 1953; Borden 1983; Bosman & Weyeraan 1969; Brandt 1948, 1960: 136; Browne 1968: 645; Bukowsky 1930; Butovitsch 1929; C. 1928; Camerano 1884; Cecconi 1906, 1924; Chamberlin 1939: 230; Chorbadzhievo 1929; Clinton & McCormick 1936; Eckstein 1889, 1926: 576; Eggers 1906; Escherich 1914: 310, 1923b: 478, 492; Fabre 1921; Fairhurst & King 1983; Fransen 1931a, 1932, 1948; Frauenfeld 1860; Fuchs 1904a, 1905c: 340, 1907: 44, 1911b; Furst 1888: 625; Gabler 1955; Gibbs 1974, 1978b; Gibbs, Burdekin, & Brasier 1977; Gmelin 1787a; Grove 1983; Guran 1933; Hagedorn 1903a; Hayes & Parihar 1987; Hennings 1908c: 211; Henschel 1876a: 204, 242; Hess & Beck 1927: 293; Heurtz 1934: 57; Hufnagl & Puzyr 1951: 102; Jaensch 1835: 82; Joly 1950; Karpinski 1933b: 22; Karpinski & Strawinski 1948: 153; Kemner 1919: 174; Kholodkovskii 1912: 276, 289; Kirby, S. G. & Fairhurst 1981a, 1981b, 1982, 1983; Kirkendall 1984: 237; Kostin 1960: 130; Kraemer 1950b: 380; Lekander 1954b: 7; Lengerken 1939: 48, 1954: 65; Louzil 1961: 18; Lovendal 1890a: 146; Lozinskij 1966; Madon 1930: 99; Makhmadzieev & Shukronaev 1983; Maksimovic 1979a, 1979b; Maksimovic & Motal 1981; Manojlovic 1986b; Marcu 1941: 399; Maslov 1963c: 841; Merlin 1984; Metcalf & Flint 1951: 799; Michalski 1959c: 170; Mozolevskaya et al. 1987; Nilsson, A. 1982; Nordlinger 1856: 42; Nosek 1959a: 118, 1959b: 86; Novak, V., Hrozinka, & Stary 1976: 110; Nusslin 1904: 6, 1905a: 88, 1905b: 460, 1913: 204, 1927: 284; Oldham 1930: 239–248; Orest 1926b: 81; Ormerod 1877: 184; Paulian 1943: 316; Pfeffer 1942a: 10; Postner 1974: 382; Prell 1926: 62–76, 1931: 368; Rafes 1962; Ratzeburg 1837: 185, 1839: 157, 226, 1871a: 403, 1871c: 83; Rhumbler 1922: 274, 1927: 284; Rimski-Korsakov et al. 1949: 301; Roepke 1940: 171; Samal 1928: 141; Schedl 1981b: 43; Scheidter 1936: 233; Schimitschek 1930a: 288, 1955a: 153; Schindler, K. 1860: 19, 1861: 16; Schmidt 1881: 90; Schneider-Orelli 1947b: 156; Schwappach et al. 1929: 185; Schwerdtfeger 1929: 360, 1944a: 172, 1957a: 181, 1981: 187; Silvestri 1911: 387; Spessivtsev 1913a: 36; Stark 1926a: 331, 1952: 109; Stefanov 1949a: 97, 107; Stellwaag 1931: 94; Strojny 1970; Tragardh 1939b: 165; Tschorbadjiev 1929: 153; Wachtl 1901: 380; Weber, H. 1926: 576; Wichmann 1909a: 147, 1916: 12, 1927b: 348; Wilson, G. F. & Becker 1960: 86; Wolff & Krausse 1922: 67, 68; Wttewaall 1864: 187. (**ds**) Adeli 1972: 14; Allen A. 1951a; Ammann & Knabl 1913; Andersch 1851; Androic 1966: 46; Anonymous 1965l, 1975q, 1979p; Audras & Schaefer 1957; Bain 1974: 15; Balachowsky 1943a, 1944b; Balazy & Michalski 1960; Barthe 1896; Bartindale & Bartindale 1948: 138; Beattie 1934a, 1934b; Beck 1817; Bedel 1888b: 387, 405; Bejer-Petersen 1978; Bejer-Petersen & Jorum 1977: 3; Berg 1827; Blackwelder 1939; Borchert 1951; Brakman 1966b: 203; Browne 1968: 645; Bruck 1949; Brugge 1979; Buck 1952, 1955: 191; Bucking 1932; Bukowsky 1930; Buresh & Lazarov 1956; Butovitsch 1929: 9, 38–39; Butovitsch & Heqvist 1947; Callaghan 1982b; Carpentier & Delaby 1908; Cecconi 1906; Chamberlin 1939: 232; Chorbadzhievo 1924d, 1929; Clinton & McCormick 1936; Debatisse 1945; Dejean 1821, 1825, 1837; Duftschmidt 1825; Dzhambazishvili 1961a: 751–757, 1961b: 1253–1254; Eder 1934; Eggers 1904, 1906; Endrodi 1958a, 1958b, 1981: 184; Escalera 1919; Escherich 1923b: 478, 492, 1932b; Esterberg 1959; Everts 1925; Fuchs 1904a, 1905a, 1905c: 340, 1907: 44; Gabler 1949b; Girling & Greig 1985; Grune 1979: 35; Guran 1933: 225–236; Gyllenhal 1827: 619; Gyorfi 1941b; Hagedorn 1903a, 1910d: 88; Hahmann 1937: 155, 163;

Hansen, V. 1939, 1956, 1964: 456; Hellen 1947; Heyden, Reitter, & Weise 1891: 670, 1906: 708; Hill, D. S. 1987: 337; Horion 1949, 1951; Illiger 1805: 130; Jacentkovsky 1935: 18; Jazentkovsky 1912: 285; Joly 1949b: 254; Kalandra & Pfeffer 1935, 1938: 24–33; Kaltenbach 1874: 428, 535, 593; Karpinski 1931: 18, 21, 38, 1933b: 22; Karpinski & Strawinski 1948: 153; Keler 1925b: 270; Kemner 1919: 174; Kersten 1933: 77; Klefbeck & Sjoberg 1960: 228; Kleine 1912a: 262, 267, 1913a: 34, 1913b: 151, 1934a: 169; Knull 1934a: 865; Koca 1905: 191; Koltze 1901: 152; Kostenko 1929; Kovacevic 1957: 67, 69; Kudela 1946b: 347; Kurir 1947c: 24; Langhoffer 1915e: 156; Leclercq 1971; Lentz 1857: 140; Lomnicki 1913b: 147; Lucht 1987: 275; Mahler 1987: 232; Makhaovskii 1959: 63; Marcu 1926c: 58; Michalski 1957: 161, 1962: 202, 1973a: 83; Muller 1776: 57; Mumford 1965: 32, 1966: 40; Munster 1928: 288; Negru 1968a: 454; Negru & Rosca 1967: 14; Nunberg 1928b: 87, 90, 1954: 90; Orest 1926c: 58; Palm 1959: 28–29, 437; Pascovici 1962; Pfeffer 1924b: 471, 1928b: 2, 1931b: 73, 1989a: 48; Pierce, W. D. 1917: 96; Pittioni 1943: 174; Pjatnitskii 1930a: 163, 1932: 295–302; Postner 1974: 382; Rapp 1934: 716; Ratzeburg 1837: 185, 1839: 157, 226; Reitter 1894a: 40; Revy & Siroki 1942: 82; Rimski-Korsakov et al. 1949: 301; Roemer 1789: 40; Rohrig 1955: 37; Romanyk 1959: 425; Roubal 1935b: 72, 1941: 256; Ruskov 1928c: 60; Sainte-Claire & Mequignon 1938: 443; Schaufuss 1915: 1203; Schaum 1862: 100; Schedl 1967c: 68, 1980a: 4, 1981b: 43; Scheerpeltz & Winkler 1930: 255; Schilsky 1909: 186; Schimitschek 1951a: 101; Schwerdtfeger 1981: 187; Shillito 1947: 291; Sokanovskii 1966: 381; Spierenburg 1921: 56; Stark 1926a: 331, 1926j: 123, 1927b: 85, 1952: 109; Stein 1868: 113; Stein & Weise 1877: 164; Stellwaag 1931: 94; Stierlin 1898: 435; Sturm 1843: 229; Tragardh 1939b: 165; Tredl 1907: 5; Tschorbadjiev 1929: 153; Verdcourt 1952: 80; Wichmann 1927a: 48; Winter, T. G. 1983: 44; Zinovjev 1955: 191; Zoufal 1920: 20. (**tx**) Acatay 1943: 54–56; Apel 1983; Bach 1854; Balachowsky 1943a, 1944b: 16–17, 1949a: 71–72; Beaver 1970b; Bechstein 1818: 75, 215; Bechstein et al. 1805: 101; Bedel 1888b: 387, 405; Beffa 1961; Blackman 1934: 5, 9, 22–23; Brandt 1960:pl. 28; Burton et al. 1968: 191; Butovitsch 1929: 8, 38–39; Carpentier & Delaby 1908; Ceballos 1945; Chamberlin 1939: 232; Chararas & Chipoulet 1979: 178; Chevrolat 1838; China 1962: 3–8; Chorbadzhievo 1924d; Csiki 1906; Dammerman 1950a: 13, 1950b: 154; Dejean 1821, 1825; Duffy 1953; Duftschmidt 1825; Eggers 1908e, 1910e: 36, 1911a: 74, 1912c: 205–206, 1913a: 284–285, 1914: 39, 1929e: 52, 1941c: 123; Eichhoff 1864b: 32, 1881a: 148–149, 1883: 128–129; Endrodi 1957b; Erichson 1836: 58; Escherich 1923b: 478, 492; Fabricius 1775: 59, 1787: 37, 1792: 366, 1801: 390; Formanek 1907: 9; Fransen 1948; Gabler 1949b, 1955; Geoffroy 1762:fig. 5, 1785: 139; Gibbs 1974: 5; Gibbs, Burdekin, & Brasier 1977: 7; Gmelin 1790: 1602; Goeze 1777: 143; Grune 1979: 34–35; Gyllenhal 1813: 346, 1827: 619; Hagedorn 1910a: 124; Hansen, V. 1956, 1964: 456; Henschel 1876a: 204, 242; Herbst 1793: 125–127; Hopkins 1912d, 1914: 118, 121, 129, 1915c: 183, 220, pl. 9, fig. 16, pl. 12, fig. 16; Iablokoff-Khnzorian 1961: 85; Illiger 1907: 321; Jablonsky 1785: 125; Jacentkovsky 1935: 18; Kalina 1969; Karpinski & Strawinski 1948: 153; Kuhnt 1913: 1047; Latrielle 1803: 204, 1804: 108; LeConte 1868: 166; Letzner 1844: 65, 1891: 374; Louzil 1961: 105; Lucas 1920: 254; Lucht 1987: 275; Marsham 1802: 53–54; Michalski 1959c: 170–173, 1962a: 53, 1962d: 273–276, 1967: 312–313, 1973a: 83–86, pl. 24; Muller 1776: 57; Murayama 1939: 137; Nilsson, A. V. 1982: 25; Nordlinger 1848: 252, 1856: 42; Novak, V., Hrozinka, & Stary 1976: 110; Nunberg 1954: 90, 99–100; Nusslin 1911a: 155; Olivier 1795: 5–6; Panzer 1795a: 286; Paykull 1800: 15; Pfeffer 1932b: 9, 1942a: 10, 1955a: 84–86, 1989a:pl. 5; Portevin 1935: 308; Postner 1974: 382; Quaschik 1953: 35; Ratzeburg 1837: 185, 1839: 157, 226; Redtenbacher 1849a: 852, 1849b: 27; Reitter 1894a: 40, 1913a: 14; Rey 1892: 30; Rhumbler 1922: 274, 1927: 284; Roemer 1789: 40; Sahlberg 1836: 140; Schaefer 1776: 112; Schedl 1934f: 1633, 1948b: 43, 1950j: 96, 1952f: 86, 1958g: 167, 1964k: 221–222, 1967c: 68, 1980a: 4, 1981b: 43; Schevyrew 1893a: 107–109, 1893b: 45–51; Schimitschek 1937: 43, 1955c: 73; Sokanovskii 1958: 37, 1966: 381–383; Spessivtsev 1913a: 36, 1922: 455, 491, 1925a: 152, 1931: 13–14; Stark 1952: 109–113; Stierlin 1898: 435; Sulzer 1776: 21; Thomson 1865: 374; Wichmann 1916: 12. (**ms**) Beattie 1931; Begley & Grove 1985; Blight, Henderson, & Wadhams 1983; Boocock 1959b; Brandt 1960: 136; Burdekin 1983; Burton et al. 1968: 190; Eggers 1910b, 1940e: 63; Escherich 1932b; Fuchs 1911b; Hartig 1834: 218; Hopkins 1912d; Keler 1963: 580; Keyserlingk 1982; King, C. J. & Fielding 1983; Liming 1948: 6; Lovendal 1890a: 146; Lucas 1920: 254; Merino-Rodriguez 1966: 48; Roy 1948: 235; Schaeffer 1766: 112; Schwappach 1924: 57; Wadhams 1982.

punctatus Muller 1776: 57. Syntypes, sex?; Denmark; not located. Synonymy: China 1963b: 416, ICZN 1963a: 416.
References: (**tx**) China 1962b, 1963b; ICZN 1963a: 416; Muller 1776: 57.

scolythus Sulzer 1776: 21, Taf. II, fig. 13k (*Dermestes*). Syntypes, sex?; article not seen; not located. Synonymy: Fabricius 1792: 366.
References: (**tx**) Fabricius 1792: 366; Sulzer 1776: 21.

geoffroi Goeze 1777: 143 (*Dermestes*). Syntypes, sex?; Angliae Dom. Lee; Colon Museum and UZMC, Copenhagen, automatic. Synonymy:

Schedl 1948b: 43, China 1962b: 6, 1963b: 416, ICZN 1963a: 416.

References: (**ay**) Schevyrew 1889a: 22; Scholz 1905: 144. (**cn**) Barbey 1925: 597; Betrem 1930b: 274; Eckstein 1915; Hess 1900: 49, 1907: 277; Hess & Beck 1914: 239; Judeich & Nitsche 1895: 444; Keller 1903b: 39; Lohrenz 1907: 48; Packard 1890: 860; Schouteden 1927: 114; Severin 1906: 401. (**ec**) Betrem 1930b: 274; Severin 1899: 383. (**hb**) Barbey 1901: 16, 34, 1925: 597, 1942; Boas 1923: 340; Chittenden 1890; Dombrowsky 1887, 1892; Eckstein 1897, 1915; Eichhoff 1881a: 40, 148, 1892a: 95; Everts 1903: 740, 1922: 636; Guran 1933; Henschel 1895a: 155; Hess 1900: 49, 1907: 277; Hess & Beck 1914: 239; Joly 1950; Judeich & Nitsche 1895: 444; Knoche 1904: 32, 1905: 357, 1908a: 44; Knotek 1894a: 553; Lohrenz 1907: 48; Lunardoni & Leonardi 1889: 448; Nusslin 1898: 276, 1906b: 6; Packard 1890: 860; Smith, J. B. 1886: 127. (**ds**) Barthe 1896; Bau 1888; Bielz 1887; Boas 1923: 340; Butovitsch 1929: 9; Chapman 1910; Chittenden 1890; Fricken 1889: 282; Gemminger & Harold 1872: 2695; Guran 1933; Henschel 1895a: 155; Heyden, Reitter, & Weise 1883: 181; Judeich & Nitsche 1895: 444; Knotek 1892a: 35, 1894a: 553; Lunardoni & Leonardi 1889: 448; Nusslin 1898: 276; Oliveira 1887: 327; Schevyrew 1890c: 469; Schilsky 1909: 186; Schulze 1913: 59; Semedo 1961: 118; Smith, J. B. 1886: 127; Sokanovskii 1966: 383; Stein & Weise 1877: 164. (**tx**) Balachowsky 1949a: 71; Barbey 1901: 16, 34; Boos 1923: 340; Butovitsch 1929: 9; Chapman 1910; China 1962b: 6; Dombrowsky 1887, 1892; Eichhoff 1881a: 40, 148, 1883a: 105, 129; Everts 1903: 740, 1922: 636; Fauvel 1887; Ferrant 1911; Fricken 1889: 282; Goeze 1777: 143; Henschel 1895a: 155; Judeich & Nitsche 1895: 444; Knotek 1892a: 35; Letzner 1891: 374; Lovendal 1889b: 44, 1898: 51; Lunardoni & Leonardi 1889: 448; Rey 1892b: 30; Schedl 1934f: 1633, 1948b: 43–45, 1950j: 96; Schevyrew 1889a: 22; Sokanovskii 1966: 383. (**ms**) Kholodkovskii 1893: 390.

niger Geoffroy 1785: 139. Syntypes, sex?; Angliae Dom. Lee; Colon Museum and UZMC, Copenhagen, automatic. Synonymy: China 1962b: 6, 1963b: 416, ICZN 1963a: 41.

References: (**ds**) Fourcroy 1785. (**tx**) China 1962b: 6, 1963b: 416; ICZN 1963a: 41; Geoffroy 1785: 139.

destructor Olivier 1795b: 5. Syntypes, sex?; Europe; presumably MNHN, Paris, not located. Synonymy: Gyllenhal 1813: 347, Balachowsky 1949a: 71.

References: (**ay**) Aslam 1961: 439; Imhoff 1856: 228; Parkin 1940: 367. (**cn**) Acloque 1914; Anonymous 1902b: 21; Archer 1866; Betrem 1930b: 274; Collinge 1915: 789–791; Jemmett 1913: 1–44; Kauschinger 1893: 193; Koppen 1882: 236, 250; Leroy 1828: 29; Lohrenz 1907: 49; Lokaj 1906: 21; MacLeay 1824: 125; Newman 1858: 6118; Peck 1879: 35; Puls 1886: 53; Ratzeburg 1871c: 83; Reader 1828: 380; Rehberg 1903: 92; Riley 1867: 68; Semedo 1961: 118; Spence 1840: 10; Walsh 1867b: 58. (**ec**) Askew 1965: 142; Betrem 1930b: 274; Britton 1934; Elliot & Morley 1907; Greig 1981; Hinton 1945: 223; Laidlaw 1932: 117; Laumon & Ritter 1971: Peace 1960: 9; Poinar 1975: 167; Ratzeburg 1869a: 176; Rondani 1873: 161; Schaarschmidt 1959: 804; Semedo 1961: 118; Turner 1937: 144. (**hb**) Anonymous 1902b: 21; Bach 1864; Chapman 1869: 126–131; Dallimore & Munro 1922: 189–193; Everts 1900; Fisher 1928: 53–61, 1931: 120–131, 1937: 112–128; Hickin 1963; Holmgren 1867: 114, 138; Kauschinger 1893: 193; Laidlaw 1932: 117; Lindemann 1881b: 171; Lohrenz 1907: 49; MacDougall 1900a: 359, 1924: 102; MacLeay 1824: 125; Munro 1926: 45; Nordlinger 1856: 42; Pauly 1894; Ratzeburg 1837: 137, 186, 1839: 168, 228, 1871c: 83; Rehberg 1903: 92; Rey 1892a: 18; Rupertsberger 1879: 231, 1880: 227; Semedo 1961: 118; Spierenburg 1930: 21; Stebbing 1908a: 108, 1909b: 13; Taschenberg 1880: 240; Tredl 1915a: 97. (**ds**) Acloque 1896, 1914; Airy & Shaw 1944: 80–82; Aureliano de Silva 1892: 38; Croswon & Hunter 1964: 200; Duffy 1945: 175; Everts 1900; Fairmaire 1846; Favre 1890; Hirst 1923: 971–1000; Holmgren 1867: 114, 138; Kaltenbach 1874: 593; Kestercanek 1881a: 12; Koppen 1882: 236, 250; Kraatz 1869: 59; Lacordaire 1866: 387; Lentz 1857: 140; Lindemann 1884b: 264; Lokaj 1868: 63; Lomnicki 1886a: 241; Matthews & Fowler 1883: 42; Meinert 1887: 70; Munro 1921: 88; Murayama 1939: 137; Parkin 1940: 364–377; Perris 1876a: 254, 1877a: 414; Poppius 1900: 109; Quirke 1943: 198; Ratzeburg 1837: 137, 186, 1839: 168, 228; Redtenbacher 1858: 837, 1874: 372; Reitter 1869b: 153; Riley 1867: 68–69, 1873: 160–168; Rivers 1886: 66; Rye 1866a: 198, 1890: 269; Sahlberg 1900: 106; Schaum 1859: 95; Schilsky 1909: 186; Schiodte 1873: 105; Seidlitz 1872: 389, 1891a: 556; Semedo 1961: 118; Sharp & Fowler 1893: 34; Siebke 1875: 285; Sparre-Schneider 1889: 61; Spierenburg 1930: 21; Stein 1868: 113; Stein & Weise 1877: 164; Stephens 1829a; Stierlin & Gautard 1872: 294; Sturm 1826: 194, 1843: 229; Thomson 1859: 147, 1865: 373, 1868: 224; Villa & Villa 1833: 26; Wessel 1877: 391; Westhoff 1882: 238; Winter, T. G. 1983: 25. (**tx**) Acloque 1896; Aslam 1961: 440, 459, 470; Bach 1854, 1864; Balachowsky 1949a: 71; Butovitsch 1929: 8; China 1963b: 418; Fairmaire 1864: 156–157; Gyllenhal 1813: 347; Houlbert 1922a:pl. 1,

1922b: 251; Jacquelin du Val & Fairmaire 1868: 103; Lacordaire 1866: 387; Latrielle 1807: 278; Leunis 1886: 183; Lindemann 1875c: 155, 1881b: 171; Murayama 1939: 137; Nordlinger 1848: 252, 1856: 42; Olivier 1795b: 5; Perris 1877a: 414; Ratzeburg 1837: 137, 186, 1839: 168, 228; Redtenbacher 1849a: 361, 1849b: 27, 1858: 837, 1874: 372; Rey 1892b: 30; Riley 1867: 68; Rupertsberger 1879: 231, 1880: 227; Saalas 1914: 75; Schedl 1948b: 43–45; Schlechtendal & Wunsche 1879: 125; Seidlitz 1872: 389, 1891a: 556; Stebbing 1909b: 13; Stephens 1829a, 1829b: 12, 1830: 361, 1939: 208; Taschenberg 1880: 240; Thomson 1859: 147, 1865: 373, 1868: 224; Westwood 1840: 39.

californicus LeConte 1868: 166. Holotype ♂; California [USA]; MCZ, Cambridge. Synonymy: Blackman 1934: 5.

References: (**ay**) Butovitsch 1929: 6. (**cn**) Swaine 1918a: 52. (**hb**) Swaine 1918a: 52. (**ds**) Butovitsch 1929: 6; Cockerell et al. 1907; Fall 1906: 202; Fall & Cockerell 1907: 217; Gemminger & Harold 1872: 2695; Hagedorn 1910d: 83; Henshaw 1882: 269, 1885: 149; Kleine 1913b: 151, 1914b: 391; Leng 1920: 337; Swaine 1909: 104. (**tx**) Balachowsky 1949a: 71; Blackman 1934: 5, 22; Butovitsch 1929: 6; Hagedorn 1910a: 123; LeConte 1868: 166, 1876: 371–372; Schedl 1948b: 43, 45; Smith, J. B. 1886: 127; Swaine 1909: 104, 1910a: 33, 1918a: 52.

triarmatus Eggers 1912c: 205 (*Eccoptogaster*). Holotype ♀; Patria dubiosa, verisimile Gallia mer; USNM, Washington. Synonymy: Schedl 1948b: 45.

Notes: (3) Balachowsky 1949a: 74 (treated as a good species).

References: (**cn**) Fystro 1960; Goidanich & Goidanich 1934; Lekander 1954b: 7; Mathiesen 1950: 74; Pfeffer 1979: 148. (**ec**) Escherich 1935; Fransen 1937b; Nosek 1959a: 118; Pfeffer 1979: 148. (**hb**) Butovitsch 1929: 39–41; Lekander 1954b: 7; Nosek 1959a: 118; Stark 1952: 112. (**ds**) Butovitsch 1927: 170, 1929: 39–41; Eggers 1944: 143; Hansen 1939; Hellen 1947; Horion 1935; Kleine 1934a: 169; Knotek 1892a: 36; Munster 1928: 288; Palm 1959: 28–29; Pfeffer 1924a: 96, 1989a: 48; Pjatnitskii 1930a: 163; Reitter 1916: 348; Sokanovskii 1966: 383; Stark 1952: 112. (**tx**) Anderson, W. H. & Anderson 1971: 34; Balachowsky 1949a: 74; Beaver 1970: 697; Butovitsch 1929: 39–41; Eggers 1912c: 205–206, 1914: 39, 1944c: 143; Knotek 1892a: 36; Palm 1959: 347; Pfeffer 1955a: 85; Reitter 1913: 14, 1916: 348; Schedl 1934f: 1633, 1948b: 45, 1979c: 255; Sokanovskii 1966: 383; Stark 1952: 112.

fuchsi Reitter 1913a: 15. Syntypes 2 ♂; Russischarmenisches Gebirge, am Alagoes; NHMB, Budapest. Synonymy: Schedl 1948b: 45.

References: (**ay**) Butovitsch 1929: 7, 47. (**cn**) Greckin 1956: 1486. (**hb**) Greckin 1956: 1486; Stark 1952: 146. (**ds**) Butovitsch 1929: 7, 47; Kleine 1934a: 168; Schaufuss 1915: 1206; Sokanovskii 1966: 383; Stark 1952: 146. (**tx**) Butovitsch 1929: 7, 47; Reitter 1913a: 14–15; Schedl 1934f: 1633, 1948b: 45; Sokanovskii 1966: 1383; Stark 1952: 146.

***semenovi* (Spessivtsev)** 1919: 245 (*Eccoptogaster*). Lectotype ♂; Vladivostok, Far East, USSR; IZL, Leningrad, designated by Michalski 1968b: 185.

Figures: Michalski 1973a:pl. 13, Yin, Huang, & Li 1984: 26.

Distribution: Asia (Hebei, Shanxi in China/ Mongolia/ E USSR).

Hosts: *Ulmus japonica, U. laciniata, U. propinqua, U. pumila, Malus* sp.

References: (**ay**) Butovitsch 1929: 33. (**cn**) Kurenzov 1935c: 189; Pfeffer 1979: 149. (**ec**) Kurenzov 1934a: 57, 1964: 19; Pfeffer 1979: 149. (**hb**) Kurenzov 1935a: 19, 23, 1948b: 119; Stark 1952: 102. (**ds**) Butovitsch 1929: 33; Choo 1983: 40; Kleine 1934a: 169; Krivolutskaya 1983; Krivolutskaya & Kupyanskaya 1970; Kurenzov 1934a: 57, 1935a: 19, 23, 1935c: 189, 1936a: 110, 1936b: 350, 1938: 60, 1964: 19, 1967; Michalski 1973a: 52; Sokanovskii 1966: 388; Stark 1952: 102; Yanovskii & Tegshzhargal 1985: 406; Yin, Huang, & Li 1984: 26. (**tx**) Butovitsch 1929: 33; Choo 1983: 40; Endrodi 1957: 420; Kurenzov 1941a: 95–97, 1948b: 119; Michalski 1968a: 107–108, 1968b: 184–185, 1973a: 52–54, pl. 13; Schedl 1934f: 1634, 1941a: 42, 1948b: 55–56; Sokanovskii 1954: 14, 1955: 388, 1966: 382, 388; Spessivtsev 1919: 245, 247–248; Stark 1952: 102–104; Tsai, Yin, & Huang 1962: 4, 6; Yin & Huang 1980: 47; Yin, Huang, & Li 1984: 26.

kononovi Kurenzov 1941a: 98, 228. Lectotype ♂; Ussuri, USSR; IZL, Leningrad, designated by Michalski 1968b: 184. Synonymy: Schedl 1948b: 56.

References: (**hb**) Stark 1952: 103. (**ds**) Sokanovskii 1966: 388; Stark 1952: 103. (**tx**) Kurenzov 1941a: 98, 228; Michalski 1968a: 107, 1968b: 184; Schedl 1948b: 56; Sokanovskii 1966: 384, 388; Stark 1952: 103.

***shanhaiensis* Yin & Huang** 1980: 50, 53. Holotype ♂; Liaoning: Gaoling; IZAS, Beijing.

Figures: Yin & Huang 1980: 50.

Distribution: Asia (Liaoning in China).

References: (**ds**) Yin, Huang, & Li 1984: 34. (**tx**) Yin & Huang 1980: 50, 53; Yin, Huang, & Li 1984: 34.

***sinopiceus* Tsai** 1962: 9. Holotype ♂; Miyalo, Aba-Tebetan, China; IZAS, Beijing.

Figures: Michalski 1973a:pl. 44.

Distribution: Asia (Gansu, Inner Mongolia, Ningxia, Qinghai, Sichuan, Xizang [Tibet], Yunnan in China).

Hosts: *Picea asperata, P. likiangensis.*

References: (**ds**) Michalski 1973a: 130; Yin &

Huang 1981: 556; Yin, Huang, & Li 1984: 34. (**tx**) Michalski 1973a: 130–132, pl. 44; Tsai 1962: 9, 14; Yin & Huang 1980: 48, 1981: 556; Yin, Huang, & Li 1984: 34.

***spinidens* Schedl** 1966f: 96. Holotype ♀; Niederl. Guayana; Schedl Collection in NHMW, Wien.
Distribution: South America (Suriname).
References: (**ds**) Schedl 1966f: 79. (**tx**) Schedl 1966f: 96, 1979c: 234.

***squamosus* Yin & Huang** 1980: 49, 52. Holotype ♂; Yunnan: Shishong-Baanna; IZAS, Beijing.
Distribution: Asia (Yunnan in China).
Hosts: *Ulmus lanceaefolia*.
References: (**ds**) Yin, Huang, & Li 1984: 24. (**tx**) Yin & Huang 1980: 49, 52; Yin, Huang, & Li 1984: 24.

***strigipennis* Schedl** 1976a: 60. Holotype ♂; Brasilien; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1976a: 60.

***submarginatus* Schedl** 1937h: 163. Syntypes, sex?; Nova Teutonia, Brasilien; Schedl Collection in NHMW, Wien, Plaumann Collection, Strohmeyer Collection, Eberswald.
Distribution: South America (Brazil/ Paraguay).
Notes: (1) Schedl 1979c: 242 (citation of holotype invalid). (3) Schedl 1937h: 162 (*longipilosus*, nomen nudum, no status), 1937h: 163 (named var. *artestriatus*, no status in nomenclature).
References: (**ds**) Berti-Filho 1979: 41; Blackwelder 1947: 788; Schedl 1966f: 81, 1970e: 80, 1976a: 49. (**tx**) Schedl 1937h: 158, 162–163, 1951 (footnote in Eggers 1951: 144), 1952a: 445, 1958f: 33, 1979c: 443.

***subscaber* LeConte** 1876: 373. Lectotype ♀; Vancouver, British Columbia [Canada]; MCZ, Cambridge, designated by Wood 1982b: 443.
Figures: Bright 1976d: 28, Edson 1967: 53 (adult), 58 (galleries).
Distribution: North America (British Columbia in Canada/ California, N Idaho, Montana, Oregon, Washington in USA).
Hosts: *Abies concolor, A. grandis, A. magnifica*.
Notes: (3) Blackman 1934: 17 (redescribed).
References: (**ay**) Butovitsch 1929: 9. (**cn**) Burke 1908; Chamberlin 1924; Doane et al. 1936; Essig 1926: 512, 1958: 512; Hopkins 1901a: 251, 1904a: 21; Keen 1938: 119, 1952c: 158; Leach 1940b: 224; Miller 1929: 994; Struble 1937d: 10, 1957: 12–14; Woods 1969. (**ec**) Ashraf & Berryman 1969: 14; Furniss, R. L. & Carolin 1977: 404; Keen 1938: 119; Leach 1940b: 224; Marsh 1979: 150; Miller 1929: 994; Struble 1957: 12; Tehon 1942: 238; Wright 1938: 560. (**hb**) Bright 1976d: 34; Bright & Stark 1973: 14; Burke 1908: 115; Chamberlin 1939: 228, 1958: 44; Doane et al. 1936; Edson 1967: 29; Essig 1926: 512, 1958: 512; Furniss, R. L. & Carolin 1977: 404; Gast et al. 1989: 383; Hopkins 1901e: 67, 1904a: 21; Keen 1938: 119, 1952c: 158; Pierce 1907: 293; Struble 1937d: 10, 1957: 12; Wood, S. L. 1982b: 443; Woods 1969. (**ds**) Blackwelder 1939; Bright 1976d: 34; Bright & Stark 1973: 14; Butovitsch 1929: 9; Chamberlin 1917: 325, 1925, 1939: 228, 1958: 44; Currie 1905: 76; Edson 1967: 29; Essig 1926: 512, 1958: 512; Furniss, R. L. & Carolin 1977: 404; Gast et al. 1989: 383; Hagedorn 1910d: 89; Henshaw 1882: 269, 1885: 149; Keen 1929a: 12, 1938: 119, 1952c: 158; Kleine 1913b: 152, 1914b: 391, 398, 1934a: 169; Laursen 1979; Leng 1920: 337; Patterson & Hatch 1945: 148; Swaine 1909: 107; Wood, S. L. 1972a: 397, 1982b: 443; Woods 1969. (**tx**) Blackman 1934: 17–18; Bright 1964: 167, 1976d: 28–29; Butovitsch 1929: 9; Chamberlin 1939: 228, 1958: 44; Edson 1967: 29, 53; Hagedorn 1910a: 124; Keen 1929a: 12; LeConte 1876: 373; Swaine 1909: 107, 1910a: 33, 1917: 32, 1918a: 64; Wood, S. L. 1962: 81, 1972a: 397, 1982b: 443; Woods 1969. (**ms**) Essig 1931: 685.

***sulcifrons* Rey** 1892: 30. Syntypes, sex?; Lyons, France; Rey Collection in Lyons Museum.
Figures: Michalski 1973a:pl. 25.
Distribution: Europe (Bulgaria/ France/ Greece/ Hungary/ Italy/ W USSR/ Yugoslavia).
Hosts: *Ulmus* spp., *Quercus* sp.
References: (**ay**) Butovitsch 1929: 10, 41–42. (**bv**) Maksimovic 1979a: 285. (**cn**) Anonymous 1978w; Clinton & McCormick 1936; Goidanich 1937: 417–425; Goidanich & Goidanich 1934, 1937; Grandi 1957; Kalandra & Pfeffer 1935: 6; Karaman 1967: 186; Leach 1940b: 227; Lindeman 1963: 1582–1584, 1964: 78–80, 113; Mumford 1965: 33; Pfeffer 1979: 148; Tubeuf 1935: 76; Vajda 1952: 114. (**ec**) Escherich 1935; Krivosheina 1974; Leach 1940b: 227; Maksimovic 1979a: 285; Novak, P. 1952: 411; Pfeffer 1979: 148; Ruschka 1916: 27; Szczepanski 1960a: 409; Thompson, W. R. & Simmonds 1964: 36, 1965: 68; Wichmann 1916: 11. (**hb**) Beffa 1949; Cecconi 1924; Clinton & McCormick 1936; Goidanich 1934: 145–163, 1946; Grandi 1957; Kostin 1960: 130; Maksimovic 1979a: 285; Stark 1952: 111; Wichmann 1916: 11. (**ds**) Anonymous 1978w; Audras & Schaefer 1957; Balachowsky 1944b; Beffa 1949; Buresh & Lazarov 1956; Butovitsch 1929: 10, 41–42; Clinton & McCormick 1936; Kleine 1913a: 307; Luigioni 1929: 989; Michalski 1973a: 86; Mumford 1965: 33; Novak, P. 1952: 411, 1964; Pfeffer 1935: 159, 1936: 90, 1947d: 126, 1955a: 80; Pittioni 1943: 176; Readio 1935: 344; Sainte-Claire 1914: 467; Sainte-Claire & Mequignon 1938: 443; Schaufuss 1915: 1206; Schilsky 1909: 186; Stark 1952: 111. (**tx**) Balachowsky 1943: 168, 1944b: 17–18, 1949a: 73; Beffa 1949; Butovitsch 1929: 10, 41–42, 1964: 221; Eggers 1908: 194, 1910: 36, 1911a: 73–74, 1912a: 48, 1912c: 205, 1913a: 284–285, 1941c: 123; Luigioni 1929: 989; Michalski 1973a: 86–88, pl. 25; Reitter 1913a: 15; Rey 1892: 30; Schedl 1934f: 1633, 1948b: 43, 45, 1964k: 221–222, 1967c:

68; Sokanovskii 1954: 14, 1966: 383; Stark 1952: 111; Wichmann 1913d: 144, 1916: 11–13.

leonii Eggers 1908: 194 (*Eccoptogaster*). Lectotype ♂; Cerchio, Aquilensi, Italy; USNM, Washington, designated by Anderson & Anderson 1971: 17. Synonymy: Balachowsky 1949a: 73.

References: (**ds**) Sokanovskii 1966: 383. (**tx**) Anderson, W. H. & Anderson 1971: 17; Balachowsky 1949a: 73; Eggers 1908: 194, 1910e: 36, 1911a: 73–74, 1912a: 48, 1913; Hagedorn 1910a: 123; Reitter 1913a: 15; Schedl 1934f: 1633, 1948b: 43; Sokanovskii 1966: 383; Wichmann 1913d: 144. (**ms**) Eggers 1910b.

***tadzhikistanicus* Stark** 1941: 302. Lectotype ♂; prope Stalinabad, Tajikistan, USSR; IZL, Leningrad, designated by Michalski 1968b: 192.

Figures: Greckin 1956: 1481, Michalski 1968a: 112, 1973a:pl. 45.

Distribution: Asia (Tajikistan in W USSR).

Hosts: *Acer turkestanicum, Malus* spp.

References: (**cn**) Greckin 1956: 1481; Kulinich 1965: 134. (**hb**) Greckin 1956: 1481; Stark 1952: 130. (**ds**) Kadyrov 1988: 43, 1989; Michalski 1973a: 132; Sokanovskii 1966: 389; Stark 1952: 130. (**tx**) Grechkin 1956: 1481; Michalski 1968a: 111–112, 1968b: 192, 1973a: 132–134, pl. 45; Sokanovskii 1954: 14, 1966: 389; Stark 1941: 299–302, 1952: 130–131.

***thoracicus* Chapuis** 1869: 55. Syntypes 2 ♂; Bresil; IRSNB, Brussels.

Distribution: South America (Brazil).

Notes: (3) Schedl 1959m: 546 (named var. *labiatus*, no status).

References: (**ay**) Butovitsch 1929: 10. (**hb**) Viana 1964: 130. (**ds**) Blackwelder 1947: 788; Butovitsch 1929: 10; Gemminger & Harold 1872: 2696; Hagedorn 1910d: 89; Kleine 1913b: 152, 1914b: 336; Nunberg 1962: 223; Schedl 1966f: 81, 1973d: 150, 1976a: 49; Viana 1964: 130. (**tx**) Butovitsch 1929: 10; Chapuis 1869: 55, 1873: 263; Hagedorn 1910a: 124; Schedl 1937h: 155, 161, 1948d: 36, 1952a: 444–445, 1958f: 33, 1959m: 546.

brevicauda Wichmann 1915a: 104 (*Eccoptogaster*). Holotype, sex?; Boa Sorta (Minas Geraes), Brasilien; not given. Synonymy: Schedl 1937h: 161.

References: (**ay**) Butovitsch 1929: 6. (**ds**) Butovitsch 1929: 6. (**tx**) Butovitsch 1929: 6; Schedl 1937h: 155–161; Wichmann 1915a: 104–105.

***torulus* Wood** 1975a: 25. Holotype ♂; Rincon de Osa, Puntarenas, Costa Rica; Wood Collection.

Distribution: North America (Costa Rica).

Hosts: Leguminous tree.

References: (**ds**) Wood, S. L. 1982b: 449. (**tx**) Wood, S. L. 1975a: 25, 1982b: 449.

***transversalis* Eggers** 1943a: 375. Holotype, sex?; Bolivia (Cochabamba); MNHN, Paris.

Distribution: South America (Bolivia).

Notes: (1) Schedl 1979c: 254 (Type in Schedl Collection; were there two types or did Schedl take the type before Eggers could return it to MNHM, Paris?).

References: (**tx**) Eggers 1943a: 375; Schedl 1979c: 254.

***trispinosus* Strohmeyer** 1908b: 69. Holotype ♂; Kushiro, Japan; Strohmeyer Collection, in IPKE, Eberswalde.

Figures: Michalski 1973a:pl. 26.

Distribution: Asia (NE China/ Japan/ E USSR).

Hosts: *Ulmus* spp., *Fraxinus mandshurica*.

Notes: (3) Schedl 1948b: 43 (treated this as a synonym of *esuriens*).

References: (**ay**) Butovitsch 1929: 10, 47. (**cn**) Kurenzov 1935c: 189. (**hb**) Krivolutskaya 1965a: 226, 1973: 130; Kurenzov 1935a: 19, 24, 1948b: 117; Stark 1952: 122. (**ds**) Butovitsch 1929: 10, 47; Hagedorn 1910d: 89; Kleine 1913b: 152, 1914b: 259, 1934a: 169; Krivolutskaya 1965a: 226, 1973: 130; Krivolutskaya & Kupyanskaya 1970; Kurenzov 1935a: 19, 24, 1935c: 189, 1936a: 110, 1936b: 350, 1938a: 58; Michalski 1973a: 88; Murayama 1936a: 122; Sokanovskii 1966: 383; Stark 1952: 122. (**tx**) Butovitsch 1929: 10, 47; Hagedorn 1910a; Krivolutskaya 1958: 111–112, 1965: 226–227; Kurenzov 1941a: 90–91, 104–105, 1948b: 117; Michalski 1964: 668, 1968b: 191, 1969c: 661–662, 1973a: 88–91, pl. 26; Murayama 1936a: 122; Niisima 1909: 118; Schedl 1934f: 1633, 1941a: 42, 1948b: 43, 1964k: 221–222; Sokanovskii 1954: 14, 1966: 383; Stark 1952: 122; Strohmeyer 1908b: 69; Tsai, Yin, & Huang 1962: 7. (**ms**) **Eggers 1910b.**

grandis Kurenzov 1941a: 104, 227. Holotype ♀; Iman, ad fluviam Arm, Primorye, USSR; IZL, Leningrad. Synonymy: Michalski 1973a: 88.

Notes: (3) Schedl 1948b: 43 (= *esuriens* Blandford).

References: (**hb**) Kurenzov 1948b: 119; Stark 1952: 128. (**ds**) Blackwelder 1939; Michalski 1968b: 191; Sokanovskii 1954: 14, 1966: 383; Stark 1952: 128. (**tx**) Kurenzov 1941a: 104, 227, 1948b: 119; Michalski 1968a: 111, 1973a: 88; Schedl 1948b: 43; Sokanovskii 1966: 383; Stark 1952: 128.

***tsugae* (Swaine)** 1917: 32 (*Eccoptogaster*). Lectotype ♀; Glacier, British Columbia [Canada]; CNCI, Ottawa, designated by Bright 1967b: 674.

Figures: Bright 1976d: 28, 194, Edson 1967: 45 (adult), 57 (galleries).

Distribution: North America (British Columbia in Canada/ California, N Idaho, W Montana, Oregon, Washington in USA).

Hosts: *Tsuga* spp.

Notes: (3) Blackman 1934: 15 (redescribed).

References: (**ay**) Butovitsch 1929: 10; Thomas, J. B. 1967. (**bv**) Daterman, Rudinsky, & Nagel 1965; Schenk, Berryman, & Dale 1976. (**cn**) Anonymous 1983d; Browne 1968: 646; Chamberlin 1924; Doane et al. 1936; Essig 1926: 512, 1958: 512; Hatch 1938: 193; Keen 1938: 122, 129, 1952c:

166; McMullen & Atkins 1962a; Ostmark 1956: 9; Ruppel 1967: 87; Ryker & Rudinsky 1979: 207; Schenk, Berryman, & Dale 1976; Schuder 1969: 81; Swaine 1918a: 53; Woods 1969. (**ec**) Bushing 1965: 467; Chamberlin 1918a; Furniss, R. L. & Carolin 1977: 404; Keen 1938: 129; Marsh 1979: 158; Matthews 1970; McMullen & Atkins 1962a; Phaff & Lidia do-Carmo-Sousa 1962; Richerson, J. V. & Borden 1972a; Schenk, Berryman, & Dale 1976. (**hb**) Ashraf & Berryman 1969: 7; Bright 1968: 646, 1976d: 32; Bright & Stark 1973: 14; Chamberlin 1939: 228, 1958: 43; Daterman, Rudinsky, & Nagel 1965; Doane et al. 1936; Edson 1967: 17; Essig 1926: 512, 1958: 512; Furniss, R. L. & Carolin 1977: 404; Goedens & Norris 1964b: 745; Keen 1938: 129, 1952c: 166; Kirkendall 1984: 237; McMullen & Atkins 1959b: 416, 1962a; Ryker & Rudinsky 1979: 207; Swaine 1918a: 53; Wood, S. L. 1982b: 435; Woods 1969. (**ds**) Anonymous 1983d; Bedard 1938a; Bright 1968: 646, 1976d: 32; Bright & Stark 1973: 14; Buth & Ellis 1981; Butovitsch 1929: 10; Chamberlin 1918a: 27, 1925, 1939: 228, 1958: 43; Edson 1967: 17; Essig 1926: 512, 1958: 512; Furniss, R. L. & Carolin 1977: 404; Gast et al. 1989: 385; Gautreau & Melvin 1974: 14; Hopping 1922; Keen 1929a: 12, 1938: 129, 1952c: 166; Kleine 1934a: 169; Kusch 1967; Leng 1920: 337; Patterson & Hatch 1945: 148; Ruppel 1967: 87; Schenk, Berryman, & Dale 1976; Schuder 1969: 81; Still, Tidsbury, & Melvin 1974a: 14; Wood, S. L. 1972a: 396, 1982b: 435; Woods 1969. (**tx**) Benoit 1985: 39; Blackman 1934: 6–7, 15; Bright 1967b: 674, 1976d: 28, 32, 194; Butovitsch 1929: 10; Chamberlin 1939: 228, 1958: 43; Edson 1967: 17, 45; Hoebeke 1978; Keen 1929a: 12; Kusch 1967: 9; McMullen & Atkins 1962a; de Ruette 1970: 101; Ryker & Rudinsky 1979: 207; Swaine 1917: 32, 1918a: 52–53; Thomas, J. B. 1967; Wood, S. L. 1966b: 30, 1972a: 396, 1977c: 388; 1982b: 435; Woods 1969. (**ms**) Hatch 1938: 193.

***unispinosus* LeConte** 1876: 372. Lectotype ♂; Oregon [USA]; MCZ, Cambridge, designated by Wood 1982b: 432.

Figures: Edson 1967: 42, 43 (adult), 56 (galleries).

Distribution: North America (W Alberta, British Columbia in Canada/ Arizona, California, Colorado, Idaho, W Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming in USA).

Hosts: *Pseudotsuga menziesii*, rare in other conifers.

Notes: (3) Blackman 1934: 26 (redescribed).

References: (**ay**) Atkins & McMullen 1957: 8; Butovitsch 1929: 10; Essig 1926: 512; McMullen & Atkins 1962a. (**bv**) Daterman, Rudinsky, & Nagel 1965; McMullen & Atkins 1962a; Vite & Pitman 1967: 638–701; Wright, L. C. & Berryman 1978. (**cn**) Anderson, R. F. 1960: 237; Anonymous 1960i, 1960j: 6, 1960q, 1961i, 1962h, 1962i, 1963j, 1963y, 1966f, 1970h, 1971i, 1972h, 1973c, 1976h, 1978g, 1978h: 4, 1979e: 8, 1979g, 1980a, 1980m: 33, 1981j, 1983d, 1984f; Bongberg 1962; Bright 1968: 646; Brunner 1915: 1–23, 1918: 27; Buckhorn & Orr 1962: 18; Chamberlin 1924; Craighead 1927: 1–12; Curtis & Hadfield 1977b; Doane et al. 1936; Dolph & Pettinger 1968: 49; Essig 1926: 512, 1958: 512; Fiddick & van Sickle 1980: 20; Gregg, Goheen, & Bridgewater 1978: 48; Hatch 1938: 192; Hofacker & Loomis 1982: 22; Hopkins 1899b: 16, 21–22, 1904a: 20; Keen 1938: 119–122, 1952c: 155; McMullen & Atkins 1962a; Molnar, Harris, & Ross 1965: 103; Orr, P. W. 1963b; Orr, P. W. & Pettinger 1964; Packard 1890: 859; Pettinger 1979; Pierce, J. R. 1971: 12; Rudinsky & Terrier 1959: 485–488; Ruppel 1967: 87; Ryker & Rudinsky 1979: 205; Schabel 1971; Schuder 1969: 81; Silver & Ross 1965a: 123; Smith, G. J. & Melvin 1974a; Sterner & Davidson 1981: 17; Stevens 1959b: 1; Swaine 1918a: 53; Tunnock 1963: 10; Woods 1969; Wright, L. C. & Berryman 1978. (**ec**) Ashraf & Berryman 1969: 12; Bedard 1933a; Brunner 1915; Burks 1979: 774; Bushing & Bright 1965: 204; Chamberlin 1918a; Craighead et al. 1927; Deyrup & Gara 1978: 276; Furniss, R. L. & Carolin 1977: 404; Keen 1938: 119; Kinn 1971; Marsh 1979: 150; McMullen & Atkins 1962a; Phaff & Yoneyama 1961; Rice 1968, 1969: 382–386; Wright, L. C. & Berryman 1978. (**hb**) Anderson, R. F. 1960: 237; Ashraf & Berryman 1969: 7; Atkins & McMullen 1962: 17; Bongberg 1959a; Bright 1968: 646, 1976d: 36; Bright & Stark 1973: 14; Chamberlin 1939: 233, 1958: 47; Chittenden 1890; Daterman, Rudinsky, & Nagel 1965; Doane et al. 1936; Edson 1967: 12; Essig 1926: 512, 1958: 512; Furniss, R. L. & Carolin 1977: 404; Goeden & Norris 1964b: 745; Hopkins 1899b: 16, 21–22, 1904a: 20; Keen 1938: 119, 1952c: 155; Kirkendall 1984: 237; McMullen & Atkins 1959b: 416, 1962a; Packard 1890: 859; Pierce, W. D. 1907: 292; Ryker & Rudinsky 1979: 205; Schmitz & Rudinsky 1968: 1–42; Schwarz 1894b: 255; Smith, J. B. 1886: 125; Swaine 1918a: 53; Vitomskii 1928a: 178; Walters & McMullen 1956: 198; Wood, S. L. 1982b: 432; Woods 1969. (**ds**) Anderson, R. F. 1960: 237; Anonymous 1962i, 1963j, 1963y, 1966f, 1970h, 1973c, 1976h, 1978g, 1978h: 4, 1979e: 8, 1979g, 1980a, 1980m: 33, 1981j, 1983d, 1984f; Bedard 1938a; Blackwelder 1939; Bongberg & Bennett 1960: 1; Bright 1968: 646, 1976d: 36; Bright & Stark 1973: 14; Butovitsch 1929: 10; Chamberlin 1917: 321–328, 1918a: 25, 1925, 1939: 233, 1958: 47; Chittenden 1890; Cockerell et al. 1907; Currie 1905: 76; Edson 1967: 12; Essig 1926: 512, 1958: 512; Evans, D. 1983: 36; Furniss, M. M. & Furniss 1972; Furniss, R. L. & Carolin 1977: 404; Gast et al. 1989: 385; Hagedorn 1910d: 89; Hall & Eaton 1960; Henshaw 1882: 269, 1885: 140; Hopping 1922; Keen 1929a: 12, 1938: 119, 1952c: 155; Kleine 1913b: 152, 1914b: 407, 1934a: 169; Kusch 1967;

Leng 1920: 337; Mank 1934: 81; McComb et al. 1953: 3; McMullen & Atkins 1962a; Patterson & Hatch 1945: 149; Ruppel 1967: 87; Schuder 1969: 81; Smith, G. J. & Melvin 1974a; Smith, G. S. 1930; Smith, J. B. 1886: 125–127; Snow 1906: 175; Still, Tidsbury, & Melvin 1974a: 14; Swaine 1909: 108; Thatcher 1935: 261; Wickham 1896a: 309; Wood, S. L. 1948: 11, 1951a: 127, 1972a: 396, 1982b: 432; Woods 1969. (**tx**) Anderson, R. F. 1960: 237; Benoit 1986: 238; Blackman 1934: 10, 26; Bright 1976d: 29, 36; Bruck 1936a; Butovitsch 1929: 10; Chamberlin 1917: 325, 1939: 233, 1958: 47; Edson 1967: 12, 42; Eggers 1914: 38; Evans, D. 1983: 36; Hagedorn 1910a: 124; Keen 1929a: 12; Kusch 1967: 9; LeConte 1876: 372, 1878b: 626, 1879: 519; McMullen & Atkins 1962a; Muesebeck 1942: 100, 1950: 137; Ryker & Rudinsky 1979: 205; Swaine 1909: 108, 1910a: 33, 1918a: 53; Wood, S. L. 1956: 40, 1966b: 30, 1972a: 396, 1977c: 388, 1982b: 432; Woods 1969:fig. 5, 6. (**ms**) Bongberg 1859a; Essig 1931: 685; Hatch 1938: 192; Pettinger 1979; Schabel 1971.

sobrinus Blackman 1934: 23. Holotype ♂; Kent, Washington [USA]; USNM, Washington. Synonymy: Wood 1966b: 30.

References: (**cn**) Ruppel 1967: 87; Woods 1969. (**hb**) Chamberlin 1939: 232, 1958: 48; Woods 1969. (**ds**) Blackwelder 1939; Chamberlin 1939: 232, 1958: 48; Gautreau & Melvin 1974: 14; Kusch 1967; Patterson & Hatch 1945: 149; Ruppel 1967: 87; Woods 1969. (**tx**) Blackman 1934: 23–24; Chamberlin 1939: 232, 1958: 48; Kusch 1967: 9; Wood, S. L. 1966b: 30; Woods 1969.

fiskei Blackman 1934: 25. Holotype ♂; Capitan Mountains, N. Mex.; USNM, Washington. Synonymy: Wood 1977c: 388.

References: (**cn**) Doane et al. 1936; Schuder 1969: 81. (**hb**) Bright 1976d: 37; Chamberlin 1939: 232; Doane et al. 1936; Edson 1967: 13. (**ds**) Blackwelder 1939; Bright 1976d: 37; Chamberlin 1939: 232; Edson 1967: 13; Furniss, R. L. & Carolin 1977: 403; Schuder 1969: 81. (**tx**) Blackman 1934: 9, 25; Bright 1976d: 37; Chamberlin 1939: 232; Edson 1967: 13, 43; Wood, S. L. 1977c: 388.

***varshalovitchi* Michalski** 1973a: 55. Holotype ♀; Lenkoran, Azerbaijan, USSR; IZL, Leningrad.

Figures: Michalski 1973a:pl. 14.

Distribution: Asia (Azerjaijan in USSR).

Hosts: *Carpinus betulus*.

References: (**ds**) Michalski 1973a: 55. (**tx**) Michalski 1973a: 55–57, pl. 14.

***ventralis* LeConte** 1868: 167. Lectotype ♂; Washington Territory [USA]; MCZ, Cambridge, designated by Wood 1982b: 441.

Figures: Ashraf & Berryman 1969: 3, Bright 1976d: 28, 195, 215 Edson 1967: 38, 52 (adults), 58 (galleries).

Distribution: North America (British Columbia in Canada/ Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming in USA).

Hosts: *Abies concolor, A. grandis, A. magnifica,* accidental in other conifers.

Notes: (3) Blackman 1934: 22 (redescribed).

References: (**ay**) Ashraf & Berryman 1970b: 923–930; Ashraf, Mayr, & Sybers 1971; Bruhn 1947: 21; Butovitsch 1929: 10; Francke-Grosmann 1956b; Kirtibutr & Schenk 1977; Livingston & Berryman 1972; Payne et al. 1973; Sanders 1950: 4. (**bv**) Ashraf & Berryman 1969; Berryman 1968a, 1968c: 57–68, 1968d: 227–228, 1988; Berryman & Ashraf 1970; Berryman & Ferrell 1988; Bordasch & Berryman 1977; Christiansen & Huse 1980: 473; DeMars, Ferrell, & Ostrosina 1988; Dethier 1947; Felix, Uhrenholdt, & Parmeter 1971; Ferrell 1969b: 2238, 1971, 1974, 1986b; Ferrell et al. 1988; Hertert, Miller, & Partridge 1975; Klein, Parker, & Jensen 1978: 735; Lane & Goheen 1979; Raffa & Berryman 1987; Stevens 1971; Svihra & Volney 1983: 521; Thomas, T. L. & Agee 1986; Vite & Pitman 1967: 683–701; Wollerman 1979; Wood, D. L. 1980b; Wright, L. C., Berryman, & Wickman 1984. (**cn**) Anderson, R. F. 1960: 236; Anonymous 1955j: 10, 1956p: 110, 1958a: 7, 1960g: 10, 1960i, 1960j: 11, 1960q, 1960r, 1961e, 1961h, 1961i, 1961s, 1962h, 1962i, 1963e, 1963j, 1963k, 1963y, 1964i, 1964u, 1965c, 1966f, 1966i, 1967f, 1967h, 1968g, 1968h, 1969e, 1969f, 1969i, 1969m, 1970t, 1971i, 1972h, 1972t, 1972v, 1973c, 1974f, 1975d, 1975g, 1976f, 1976g, 1976h, 1976n, 1977h, 1977i, 1978a, 1978b: 34, 1978f, 1978g, 1978h: 4, 1979e, 1979f, 1979g: 4, 1980a: 30, 1980m: 30, 1981g, 1981j, 1982c, 1983d, 1983f, 1984f, 1986b: 6, 1987b: 3; Bailey 1957: 35; Basham 1959: 295; Beatty 1983; Bennett 1983; Berryman 1969b, 1973, 1988; Berryman & Ashraf 1970; Bongberg 1956a; Bordasch & Berryman 1977; Bousfield & Carlson 1978; Browne 1968: 646; Buckhorn 1957; Buckhorn & Orr 1961: 18, 1962: 17; Ciesla, Dewey, & Tunnock 1971: 19; Coulson & Witter 1984: 541; Craighead & Middleton 1930; Curry & Hadfield 1977a, 1977b; Curtis & Johnson 1975; DeNitto & Dale 1982b; DeNitto & Pierce 1983; Doane et al. 1936; Dolph & Hadfield 1971; Dolph & Pettinger 1968: 36, 1969: 7, 1971: 4; Ferrell 1973a, 1973b, 1974, 1983, 1986a, 1988; Ferrell & Hall 1975; Ferrell & Smith 1976; Ferrell et al. 1988; Fiddick 1980: 8; Fuller & Hostetler 1980; Gentry, G. R. et al. 1979: 817; Gibson et al. 1984; Graham 1952; Gregg, Filip, & Hadfield 1978: 21; Gregg, Goheen, & Bridgwater 1978: 44; Hagle et al. 1987: 44; Hain et al. 1978: 162; Hall R. C. 1958b, 1961; Hall, R. C. & Eaton 1960; Hamel 1980: 790; Hatch 1938: 193; Hawthorne 1963, 1964, 1965; Hayes 1959: 1–54; Hofacker & Loomis 1982: 18, 1983: 21; Hofacker, Loomis, & Gilstrap 1988: 15; Hof-

acker, Loomis, & Tucker 1984: 4; Hofacker et al. 1989; Honing 1970: 21; Hopkins 1899b: 10; James & Goheen 1981; James et al. 1985; Jemison et al. 1956: 44–45, 50; Johnsey 1984; Johnson, D. W. & Creasup 1978a; Johnson, N. E. & Shea 1963: 1–8; Keen 1938: 119–122, 1952c: 158; Kirtibutr & Schenk 1977; Klein, W. H. 1966: 17, 1967, 1968; Klein, W. H. & McGregor 1966; Klein, W. H. & Parker 1970: 17; Knapp et al. 1989: 9; Landgraf & Ostmark 1958: 10; Lane & Goheen 1979; Leach 1940b: 224; Linnane 1984; Livingston et al. 1988: 5; Loomis, Hofacker, & Tucker 1985: 12, 1986; Lucht 1966: 31; Lucht & Moore 1963: 18; Lyon 1959b: 323–327; Lyons 1956: 602; Mahoney, Moore, & Schenk 1979; Marlett 1931: 47, 1933: 23; Massey 1956b: 110; Mathiesen 1952: 304; McGregor 1977b; McGregor et al. 1977: 25; Molnar et al. 1969: 118; Moore, J. A., Mahoney, & Schenk 1981; Moore, J. A., Schenk, & Hatch 1978; Nagel 1956: 1; Neal 1979: 817; Orr, P. W. 1963a, 1963b, 1966; Orr, P. W. & Pettinger 1964; Orr, P. W., Pettinger, & Dolph 1965, 1966; Ostmark 1956: 7; Ostmark & Wilford 1956: 6, 13; Overhulser 1986; Owen 1986: 8; Pettinger 1979; Pettinger & Dolph 1967: 29, 1969, 1970: 9, 1971: 7; Pettinger & Johnson 1973a, 1973b: 1, 1974; Pierce, J. R. 1966: 14, 1970: 11, 1971: 12; Pierce, J. R. & Srago 1973: 17; Pierce, J. R., Wood, & Fujii 1977: 15; Poinar 1971; Price 1957: 81–100; Raffa et al. 1985; Ragenovich 1979, 1980b: 21; Robinson, L. A. & Dooling 1978: 11; Rogers & Hessburg 1985; Rogers, T. J. 1981; Rudinsky & Terriere 1959: 485–488; Ruppel 1967: 87; Ruppel & Pass 1970: 23; Ryker & Rudinsky 1979: 207; Salman 1933a: 133; Schabel 1971; Schenk et al. 1976, 1977; Schuder 1969: 74; Schultz & Allison 1982; Schwandt et al. 1986; Seal 1964; Silver & Ross 1961: 102, 1962b: 112, 1963a: 111; Smith, R. F. & Huffaker 1974; Smith, R. H. & Roettgering 1982; Smith, R. H., Jr. & Dale 1981; Smith, R. H., Jr. et al. 1984; Stevens 1956: 1, 1971: 7; Stipe et al. 1987; Struble 1931: 775, 1937d: 1–15, 1957: 1–18; Swaine 1918a: 53; Teillon et al. 1973; Tunnock 1966: 22; Tunnock & Dooling 1977: 28; Vogler & Dale 1982; Vogler & Schultz 1985; Wear & Buckhorn 1955: 13; Wood, D. L. 1980b; Woods 1969; Wright, L. C., Berryman, & Gurusiddaiah 1979; Yasinski 1956: 1–3; Yasinski & Pierce 1957: 9, 12–13. (**ec**) Amman 1972c: 528; Anonymous 1963z, 1970k; Ashraf 1968b, 1969: 3155–3156; Ashraf & Berryman 1969, 1970a, 1970b; Basham 1959: 295; Bedard 1933a; Berryman 1966a: 519, 1968a, 1968c: 1138–1147, 1969b: 1033–1041, 1970b, 1973, 1974: 582, 1987, 1988; Berryman & Ferrell 1988; Berryman & Pienaar 1973; Bongberg 1962; Bordasch & Berryman 1977; Burks 1979: 744; Bushing 1965: 467; Bushing & Bright 1965: 204; Chapman 1969a; DeLeon 1934b; DeMars, Ferrell, & Ostrosina 1988; Dewey, Ciesla, & Meyer 1974; Eaton 1941; Felix, Uhrenholdt, & Parmeter 1971; Ferrell 1971, 1973a, 1973b, 1978, 1983, 1986a; Ferrell, Ostrosina, & DeMars 1988; Ferrell & Smith 1976; Filip, Christiansen, & Park 1989; Francke-Grosmann 1952a, 1956b; Frye 1971b: 26; Furniss, R. L. & Carolin 1977: 404; Gerber, Tonks, & Ross 1983; Graham 1952; Hanover 1975; Hertert, Miller, & Partridge 1975; James & Goheen 1981; James, Stewart, & Williams 1984; Kaya 1984; Keen 1938: 119; Kinn 1971; Kirtibutr & Schenk 1977; Laumond & Ritter 1973; Leach 1940b: 224; Lieutier & Berryman 1988; Livingston 1971b, 1980; Livingston & Berryman 1972; Marsh 1979: 150; Mason, W. R. M. 1978; Massey 1958: 26–27, 1963, 1964a: 133–155, 1964b, 1966a: 384–386; Mathiesen 1952: 304; Matthews 1960; Mattson & Haack 1987; McGregor, Williams, & Carlson 1977; Muesebeck 1942: 100, 1950: 137; Ostrosina 1989; Otvos & Stark 1985; Phaff & Yoneyama 1961; Poinar 1971, 1975: 169; Raffa & Berryman 1987; Raffa et al. 1985; Reid 1957c: 111; Richerson, J. V. & Borden 1972a; Russell & Berryman 1976; Ryan & Rudinsky 1962: 758; Singh 1977: 104; Stark, R. W. & Borden 1965b; Stevens 1971; Struble 1957: 1–18; Tehon 1942: 238; Thomas, G. M. & Poinar 1973: 276; Thompson, W. R. 1943: 107; Thompson, W. R. & Simmonds 1964: 36, 1965: 6; Wickman 1977; Wong, B. L. & Berryman 1977; Woodring & Moser 1970; Wright, E. 1935: 525–538, 1938: 759; Wright, L. C., Berryman, & Gurusiddaiah 1979; Wright, L. C., Berryman, & Wickman 1984. (**hb**) Anderson, R. F. 1960: 236; Anonymous 1963z; Ashraf & Berryman 1969: 1–23; Beatty 1983; Berryman 1968b, 1968c, 1969a, 1970b, 1973, 1974: 580, 1988; Berryman & Ashraf 1970: 1229–1236; Berryman & Ferrell 1988; Berryman & Pienaar 1973; Bongberg 1959a; Bright 1976d: 35; Bright & Stark 1973: 14; Browne 1968: 646; Chamberlin 1939: 230, 1958: 46; Coulson & Witter 1984: 541; Doane et al. 1936; Edson 1967: 27; Ferrell 1969b, 1971, 1986a; Furniss, R. L. & Carolin 1977: 404; Gerber, Tonks, & Ross 1983; Graham 1952; Hagle et al. 1987: 44; Hopkins 1899b: 10; Johnsey 1984; Keen 1938: 119, 1952c: 158; Kirkendall 1984: 237; Lyons 1956: 602; Ryker & Rudinsky 1979: 207; Scott & Berryman 1971, 1972; Stark, R. W. & Borden 1965b; Stevens 1956a: 1, 1971; Struble 1937d: 1–15, 1957: 1–18; Swaine 1918a: 53; Wollerman 1979; Wood, S. L. 1982b: 441; Woods 1969; Wright 1938: 759–773. (**ds**) Allen 1969: 14; Amman 1972c: 528; Anderson, R. F. 1960: 236; Anonymous 1958a: 7, 1960: 10, 1962i, 1963j, 1963k, 1963y, 1964u, 1966f, 1967f, 1968g, 1969e, 1969f, 1969i, 1969m, 1972t, 1973c, 1974f, 1975d, 1975g, 1976f, 1976g, 1976h, 1976n, 1977h, 1977i, 1978a, 1978b: 34, 1978f, 1978g, 1978h: 4, 1979e: 4, 1979f, 1980a: 30, 1980m: 30, 1981g, 1981j, 1982c, 1983d, 1983f, 1984f; Bedard 1938a; Berryman 1968a, 1968b: 1138, 1969, 1973, 1988; Berryman & Ashraf 1970: 1194–1196; Ber-

ryman & Ferrell 1988; Berryman & Pienaar 1973; Blackwelder 1939; Bongberg 1956a; Bongberg & Bennett 1960: 1; Bordasch & Berryman 1977; Bright 1976d: 35; Bright & Stark 1973: 14; Browne 1968: 646; Butovitsch 1929: 10; Chamberlin 1917, 1918a, 1925; Chittenden 1890; Cockerell et al. 1907; Craighead & Middleton 1930; Currie 1905; Curtis & Johnson 1975; Downing 1963: 7; Edson 1967: 27; Essig 1926: 512, 1958: 512; Felix, Uhrenholdt, & Parmeter 1971; Ferrell 1971, 1974, 1983, 1986a; Frye 1971b: 26; Furniss, R. L. & Carolin 1977: 404; Gast et al. 1989: 385; Gemminger & Harold 1872: 2696; Hagedorn 1910d: 89; Hall & Easton 1960; Henshaw 1882: 269, 1885: 149; Hertert, Miller, & Partridge 1975; Holroyd & Barrett 1966: 12; Hopping 1922; Keen 1929a: 12, 1938: 119, 1949a: 93, 1952c: 155; Kirtibutr & Schenk 1977: 381; Kleine 1913b: 152, 1914b: 407, 1934a: 169; Laursen 1979; Leng 1920: 337; Livingston & Berryman 1972; Mank 1934: 81; Marchant & Borden 1976; McComb et al. 1953: 3; Patterson & Hatch 1945: 149; Rice 1933: 1079–1083; Ruppel 1967: 87; Salman 1933a: 133; Schuder 1969: 74; Snow 1906: 175, 1907: 188; Stark, R. W. & Borden 1965: 1162; Stevens 1971; Swaine 1909: 108; Wood, S. L. 1972a: 397, 1982b: 441; Woods 1969; Wright, L. C., Berryman, & Gurusiddaiah 1979. (**tx**) Anderson, R. F. 1960: 236; Anonymous 1963e: 16; Benoit 1986: 238; Blackman 1934: 5, 9, 22; Bright 1976d: 28, 35, 195, 215; Bright & Stark 1973: 147; Butovitsch 1929: 10; Chamberlin 1939: 230, 1958: 46; Edson 1967: 27, 52; Hagedorn 1910a: 124; Keen 1929a: 12; Kirtibutr & Schenk 1977: 382; LeConte 1868: 167, 1876: 373; Livingston & Berryman 1972: 1795; Muesebeck 1942: 100, 1950: 137; Ryker & Rudinsky 1979: 204, 207; Swaine 1909: 108, 1910a: 33, 1918a: 53–54; Wood, S. L. 1962: 81, 1967: 120, 1972a: 397, 1982b: 441; Woods 1969: fig. 4. (**ms**) Bongberg 1959a; Hatch 1938: 193; Pettinger 1979; Ruppel & Pass 1970: 23; Schabel 1971; Scott & Berryman 1971; Smith, R. F. & Huffaker 1973: 37.

***ventrosus* Schevyrew** 1890c: 98, 470. Holotype ♂; Vladivostok, USSR; not located.
Figures: Michalski 1973a:pl. 46.
Distribution: Asia (Sakhalin Island and E USSR).
Hosts: *Ulmus carpinifolia, U. propinqua*.
References: (**ay**) Butovitsch 1929: 10, 47. (**cn**) Goidanich & Goidanich 1934. (**hb**) Budkov 1897; Krivolutskaya 1973: 130; Stark 1952: 121. (**ds**) Budkov 1897; Butovitsch 1929: 10, 47; Heyden 1881: 177, 1893: 177, 1898: 76; Hagedorn 1910d: 89; Kleine 1913b: 152, 1914b: 249, 1934a: 169; Krivolutskaya 1956: 109–110, 1965a: 226, 1973: 130; Krivolutskaya & Kupyanskaya 1970; Kurenzov 1936a: 109, 111, 1938a: 58; Michalski 1973a: 134; Reitter 1894a: 41; Schevyrew 1890c: 98, 470; Semenov 1904: 38; Sokanovskii 1966: 381, 389; Stark 1952: 121. (**tx**) Butovitsch 1929: 10, 47; Heyden 1893: 177, 1910a: 124; Krivolutskaya 1958: 110; Kurenzov 1941a: 84–85; Michalski 1973a: 134–137; Reitter 1894a: 41, 1913a: 19; Schedl 1934f: 1633, 1948b: 41; Schevyrew 1890c: 98, 470, 1893: 125; Semenov 1904: 38; Sokanovskii 1966: 381, 189; Stark 1952: 121.

***virgatus* Bright** 1972: 1490. Holotype ♂; Cerro Potosi, Nuevo Leon, Mexico; CNCI, Ottawa.
Distribution: North America (Nuevo Leon in Mexico).
Hosts: *Pseudotsuga menziesii*.
References: (**ds**) Wood, S. L. 1982b: 434. (**tx**) Bright 1972: 1490; McNamara 1977: 199; Wood, S. L. 1982b: 434.

***yablonianus* Murayama** 1943b: 96. Holotype ♂; Yablonia (Manchoukuo); Murayama Collection in USNM, Washington.
Distribution: Asia ("Manchukuo" in China).
References: (**ds**) Murayama 1943b: 96. (**tx**) Murayama 1943b: 96.

***zaitzevi* Butovitsch** 1929: 31. Holotype ♂; Borjomi, Georgia, USSR; NHR, Stockholm.
Figures: Michalski 1973a:pl. 15, Rudnev & Stepanova 1960: 774.
Distribution: Europe (Georgia and Ukraine in W USSR).
Hosts: *Ulmus carpinifolia*.
References: (**ay**) Butovitsch 1929: 31. (**cn**) Pfeffer 1979: 149. (**ec**) Pfeffer 1979: 149. (**hb**) Lindeman, G. V. 1978; Postner 1974: 385; Rudnev & Stepanova 1960: 773, 1961; Stark 1952: 101. (**ds**) Butovitsch 1929: 31; Kleine 1934a: 169; Michalski 1973a: 57; Postner 1974: 385; Sokanovskii 1960, 1966: 387; Stark 1952: 101. (**tx**) Butovitsch 1929: 31; Michalski 1973a: 57–59, pl. 15; Postner 1974: 385; Rudnev & Stepanova 1960: 774; Schedl 1934f: 1633, 1948b: 54; Sokanovskii 1960: 674, 1966: 382, 387; Stark 1952: 101–102.

Tribe Ctenophorini Chapuis

Ctenophoridae (used as a tribe)
References: Chapuis 1869: 49, 1873: 257.

Ctenophorini
References: Wood, S. L. 1978a: 112, 1982b: 64, 1986a: 59.

Problechilidae (used as a tribe)
References: Eichhoff 1878b: 34, 46, 167, 298.

Hexacolidae (used as a tribe)
References: Eichhoff 1878b: 35, 57, 306.

Hexacolides
References: Blandford 1898b: 173.

Hexacolinae
References: Hopkins 1915c: 225.

Hexacolini
References: Leng 1920: 337.

Genus *Microborus* Blandford

MICROBORUS BLANDFORD 1897a: 175. Type-species: *Microborus boops* Blandford, monobasic.
Pseudocrypturgus Eggers 1919: 236. Type-species: *Pseudocrypturgus camerunus* Eggers = *Microborus boops* Blandford, monobasic. Synonymy: Wood 1961d: 101.
References: (**tx**) Eggers 1919: 236; Schedl 1962r: 86; Wood, S. L. 1961d: 101.
Keys: Wood 1982b: 452.
Notes: (3) All species of this genus breed exclusively in the phellogen (cork cambium) area of very thick-barked hosts.
References: (**hb**) Wood, S. L. 1986a: 60. (**ds**) Blackwelder 1947: 786; Hagedorn 1910d: 76; Townsend 1928; Wood, S. L. 1986a: 60. (**tx**) Blandford 1897a: 175; Bright 1972d: 25, 41; Eggers 1933b: 18, 1935a: 75, 1940a; Hagedorn 1910a: 119–120; Hopkins 1914: 125, 132, 1915c: 227; Nunberg 1961b: 613; Schedl 1952d: 345, 1957d: 14, 1961k: 736, 1962r: 86, 1977a: 104; Wichmann 1914b: 143; Wood, S. L. 1961d: 101, 1982b: 451–455, 1986a: 60.

***aberrans* Wichmann** 1914b: 143. Syntypes, sex? Nouveau Chantier, Guyane Francaise; Wichmann Collection.
Distribution: Antilles Islands (Guadeloupe), South America (Brazil/ Cayenne/ Venezuela).
Hosts: *Clusia* sp.
References: (**ds**) Blackwelder 1947: 786; Kleine 1914b: 339. (**tx**) Eggers 1933b: 19, 1940a: 131; Schedl 1962r: 86; Wichmann 1914b: 143; Wood, S. L. 1972e: 196.

setulosus Eggers 1933b: 19. Holotype, sex?; Franz. Guayana; MNHN, Paris. Synonymy: Schedl 1962r: 87.
References: (**ds**) Blackwelder 1947: 786. (**tx**) Eggers 1933b: 19, 1940a: 131; Schedl 1962r: 86–87.

imitans Eggers 1940a: 131. Holotype ♂; Insel Guadeloupe; USNM, Washington. Synonymy: Schedl 1962r: 86.
References: (**ds**) Bright 1985c: 172. (**tx**) Anderson, W. H. & Anderson 1971: 15; Bright 1985c: 172; Eggers 1940a: 131; Schedl 1962r: 86.

***ambitus* Wood** 1969b: 13. Holotype ♀; 25 km E Coatzocoalcos, Veracruz, Mexico; Wood Collection.
Distribution: North America (Tabasco, Veracruz in Mexico).
Hosts: Tree limbs and bole, not identified.
References: (**hb**) Wood, S. L. 1982b: 454. (**ds**) Wood, S. L. 1982b: 454. (**tx**) Wood, S. L. 1969b: 13, 1982b: 454.

***bicolor* Eggers** 1933b: 19. Holotype ♀; Franz. Guayana (Nouveau Chantier); MNHN, Paris.
Distribution: South America (Cayenne).
References: (**ds**) Blackwelder 1947: 786. (**tx**) Eggers 1933b: 19; Schedl 1962r: 86; Wood, S. L. 1972e: 196.

***boops* Blandford** 1897a: 175. Holotype ♀; Tamahu, Alta Verapaz, Guatemala; BMNH, London.
Figures: Nunberg 1965b:pl. 1, Schedl 1961k: 736.
Distribution: Africa (introduced into: Cameroon/ Ghana), Antilles Islands (Jamaica), North America (Costa Rica/ Guatemala/ Honduras/ Panama), South America (Cayenne).
Hosts: *Rheedia edulis*.
References: (**ay**) Van Ryn-Tournel 1975. (**hb**) Wood, S. L. 1982b: 454. (**ds**) Blackwelder 1947: 786; Bright 1985c: 172; Hagedorn 1910d: 76; Kleine 1913b: 144, 1914b: 339, 370; Wood, S. L. 1977a: 72, 1982b: 454. (**tx**) Blandford 1897a: 175; Bright 1985c: 172; Eggers 1933b: 19; Hagedorn 1910a: 120; Hopkins 1914: 125; Lucas 1920: 412; Wichmann 1914b: 143; Wood, S. L. 1961d: 101, 1982b: 454.

camerunus Eggers 1919: 236 (*Pseudocrypturgus*). Syntypes, sex?; Kamerun; Schreiner Collection in Hamburg Museum, lost, 1 syntype in Schedl Collection in NHMW, Wien. Synonymy: Wood 1982b: 454.
Notes: (1) Schedl 1979c: 51 (citation of holotype invalid).
References: (**ds**) Bright 1972d: 42; Nunberg 1952: 18, 1965b: 18; Schedl 1959q: 705, 1961k: 736, 1962h: 58, 1962r: 1078, 1966c: 224, 1972e: 281, 1977a: 106. (**tx**) Anderson, W. H. & Anderson 1971: 8; Bright 1972d: 42; Browne 1965a: 188; Eggers 1919: 236; Nunberg 1952: 18, 1964: 18, 1965b:pl. 1; Schedl 1957d: 14, 1959q: 705, 1961k: 736–737, 1962h: 58, 1962r: 87, 1963j: 479, 1966c: 224, 1977a: 106, 1979c: 51; Wood, S. L. 1961d: 101, 1982b: 454.

***lautus* Wood** 1961d: 101. Holotype ♀; Leper Island, San Juan, Puerto Rico; USNM, Washington.
Distribution: Antilles Islands (Puerto Rico).
Hosts: *Nerium* twigs.

References: (**ds**) Bright 1985c: 172. (**tx**) Bright 1985c: 172; Wood, S. L. 1961d: 101.

***lectus* Wood** 1971: 17. Holotype ♂; La Carbonera Experimental Forest, 50 km NW Merida, Merida, Venezuela; Wood Collection.
Distribution: Antilles Islands (Dominica), South America (Venezuela).
Hosts: *Clusia* limbs and bole.
References: (**hb**) Wood, S. L. 1971: 17. (**ds**) Bright 1981c: 155, 1985c: 172. (**tx**) Bright 1985c: 172; Wood, S. L. 1971: 17.

***limatus* Wood** 1969b: 13. Holotype ♂; Finca Gromaco on Rio Coto Brus, Puntarenas, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: (?) *Protium* sp.
References: (**hb**) Wood, S. L. 1982b: 453. (**ds**) Wood, S. L. 1982b: 453. (**tx**) Wood, S. L. 1969b: 13, 1982b: 453.

***mexicanus* Wood** 1981: 123. Holotype ♂; Las Piedras, Moyotepec, Morelia, Mexico; Wood Collection.
Figures: Atkinson et al. 1986: 59.
Distribution: North America (Morelos in Mexico).
Hosts: *Bursera* sp.
References: (**hb**) Atkinson et al. 1986: 54. (**ds**) Atkinson et al. 1986: 54; Wood, S. L. 1982b: 453. (**tx**) Atkinson et al. 1986: 59; Wood, S. L. 1981: 123, 1982b: 453.

Genus *Pycnarthrum* Eichhoff

PYCNARTHRUM EICHHOFF 1878b: 41, 104. Type-species: *Pycnarthrum gracile* Eichhoff = *Hypoborus hispidum* Ferrari, subsequent designation by Hopkins 1914: 128.

Nemobius Chapuis 1869: 41. Type-species: *Nemobius lambottei* Chapuis =*Hypoborus hispidum* Ferrari, subsequent designation by Hopkins 1914: 128, preoccupied by Serville 1839.
References: (**tx**) Blandford 1897a: 116; Chapuis 1869: 41, 1873: 249; Gemminger & Harold 1872: 2673; Hopkins 1914: 128; Vickery 1963: 17.

Monebius Hopkins 1914: 125. Type-species: *Nemobius lambottei* Chapuis =*Hypoborus hispidum* Ferrari, automatic, an isotypical junior synonym.
References: (**tx**) Hopkins 1914: 125.

Nomebius Navas 1915: 34. Type-species: *Nemobius lambottei* Chapuis =*Hypoborus hispidum* Ferrari, automatic, an isotypical junior synonym.
References: (**tx**) Navas 1915: 34.

Keys: Wood 1982b: 455.
References: (**hb**) Wood, S. L. 1986a: 60. (**ds**) Wood, S. L. 1986a: 60. (**tx**) Blandford 1897a: 174–177; Bright 1972d: 43; Eichhoff 1878b: 41, 104; Hagedorn 1910a: 115–116, 1910d: 76; Hopkins 1914: 128; Wood, S. L. 1982b: 455–461, 1986a: 60.

***amersum* Wood** 1983: 658. Holotype ♂; Tenacatita, Jalisco, Mexico; Wood Collection.
Distribution: North America (Jalisco in Mexico).
Hosts: *Brosimum alicastrum*.
References: (**ec**) Equihua & Atkinson 1986: 627. (**hb**) Equihua & Atkinson 1986: 627. (**ds**) Atkinson & Equihua 1986: 627; Estrada & Atkinson 1988: 204. (**tx**) Wood, S. L. 1983: 658.

***brosimi* Wood** 1971: 14. Holotype ♂; 9 km S Barrancas, Barinas, Venezuela; Wood Collection.
Distribution: North America (Costa Rica), South America (Colombia/ Venezuela).
Hosts: *Brosimum* sp. (Charo amarillo).
Notes: (1) Wood 1982b: 461 (correction of lapsus calami).
References: (**ds**) Atkinson & Equihua 1988: 100. (**tx**) Wood, S. L. 1971: 14, 1982b: 461.

***carinatum* Wood** 1971: 13. Holotype ♂; near Leonpampa, Dept. Huanuco, Peru, 800 m; Wood Collection.
Distribution: South America (Peru).
References: (**tx**) Wood, S. L. 1971: 13.

***fulgidum* Wood** 1977b: 217. Holotype ♂; 8 km S Colonia, Valle de Cauca, Colombia; Wood Collection.
Distribution: South America (Colombia).
Hosts: *Guarea trichiloides*.
References: (**tx**) Wood, S. L. 1977b: 217.

***funerium* Wood** 1971: 11. Holotype ♀; La Ceiba, Atlantida, Honduras; Wood Collection.
Distribution: North America (Honduras).
References: (**ec**) Equihua & Atkinson 1986: 627. (**hb**) Equihua & Atkinson 1986: 627. (**ds**) Equihua & Atkinson 1986: 627; Wood, S. L. 1982b: 458. (**tx**) Wood, S. L. 1971: 11, 1982b: 458.

***hispidum* (Ferrari)** 1867: 19 (*Hypoborus*). Holotype, sex?; Cuba; NHMW, Wien, lost from pin.
Figures: Atkinson et al. 1986: 61.
Distribution: Antilles Islands (Cuba/ Guadeloupe/ Jamaica/ Puerto Rico/ Virgin Islands), North America (Costa Rica/ El Salvador/ Guatemala/ Honduras/ almost all states of Mexico/ Nicaragua/ Panama/ Florida, Texas in USA), South America (Guyana/ Venezuela).
Hosts: *Ficus* spp.
References: (**cn**) Anonymous 1963r. (**ec**) Equihua & Atkinson 1986: 627. (**hb**) Atkinson & Equihua 1985b: 232; Atkinson et al. 1986: 54; Burgos & Saucedo 1983: 75; Equihua & Atkinson 1986: 627; Wood, S. L. 1982b: 458. (**ds**) Anonymous 1963r; Atkinson & Equihua 1985b: 232, 1986a: 420; Atkinson et al. 1986: 54; Blackwelder 1947: 786; Bright 1972d: 44, 1985c: 172; Burgos & Saucedo 1983: 75; Equihua & Atkinson 1986: 627; Estrada & Atkinson 1988: 204; Gemminger & Harold 1872: 2684; Schedl 1972g: 39, 1976a: 50, 1977e: 42; Wood, S. L. 1957c: 402, 1982b:

458. (**tx**) Atkinson et al. 1986: 59; Bright 1972b: 44, 1985c: 172; Eggers 1940a: 108; Eichhoff 1878b: 106; Ferrari 1867: 19; Schedl 1955d: 273; Wood, S. L. 1957c: 402, 1973c: 183, 1982b: 458.

lambottei Chapuis 1869: 42. Lectotype ♀; Mexique, Teapa; IRSNB, Brussels, designated by Wood 1973c: 183. Synonymy: Wood 1973c: 183.

References: (**ds**) Blackwelder 1947: 786; Blandford 1897a; Ferrer 1942; Hagedorn 1910d: 76; Kleine 1913b: 144, 1914b: 352, 370; Schedl 1963c: 157. (**tx**) Blair 1933: 487; Blandford 1897a; Chapuis 1869: 42, 1873: 250; Eggers 1951: 151; Gemminger & Harold 1872: 2673; Hagedorn 1910a: 116; Hopkins 1914: 125; Lucas 1920: 560; Schedl 1940a: 334–335; Wood, S. L. 1973c: 183. (**ms**) Lucas 1920: 560.

gracilis Eichhoff 1878b: 104. Lectotype ♂; Cuba insula Americana; USNM, Washington, designated by Wood 1973c: 183. Synonymy: Wood 1973c: 183.

References: (**ds**) Hagedorn 1910d: 76; Kleine 1913b: 144, 1914b: 378. (**tx**) Eichhoff 1878a: 383, 1878b: 104–106; Hagedorn 1910a: 116; Hopkins 1914: 128; Wood, S. L. 1973c: 183.

quadraticolle Eichhoff 1878b: 106. Lectotype ♂; Mexico; USNM, Washington, designated by Wood 1973c: 183. Synonymy: Wood 1973c: 183.

References: (**tx**) Eggers 1951: 151; Eichhoff 1878a: 383, 1878b: 106; Schedl 1940a: 335; Wood, S. L. 1973c: 183.

transversum Blandford 1897a: 177. Lectotype ♀; Mirandilla, Guatemala; BMNH, London, designated by Wood 1973c: 183. Synonymy: Wood 1973c: 183.

References: (**ds**) Blackwelder 1947: 786; Hagedorn 1910d: 76; Kleine 1913b: 144, 1914b: 370. (**tx**) Blandford 1897a: 177; Hagedorn 1910a: 116; Schedl 1952h: 68; Wood, S. L. 1973c: 183.

reimoseri Schedl 1934e: 208. Syntypes ♀; Jimenez on Osa Peninsula, and Volcan Irazu, Costa Rica; Schedl Collection in NHMW, Wien. Synonymy: Wood 1973c: 183.

References: (**ds**) Blackwelder 1947: 786; Ferrer 1942; Schedl 1963c: 157. (**tx**) Schedl 1934e: 208, 1940a: 334, 1940c: 206, 1979c: 210; Wood, S. L. 1973c: 183.

***inornatum* Wood** 1971: 11. Holotype ♀; Olanchito, Yoro, Honduras; Wood Collection.

Distribution: North America (Honduras).

References: (**ds**) Wood, S. L. 1982b: 457. (**tx**) Wood, S. L. 1971: 11, 1982b: 457.

***insulare* Blair** 1933: 487. Syntypes, sex?; Albermarle Id., Tagus Cove 200 ft., and Charles Id. sea level, Tower Id. and Hood Id, Galapagos; CAS, San Francisco.

Distribution: North America (Isla del Coco in Costa Rica), South America (Galapagos Islands).

References: (**ds**) Blackwelder 1947: 786; Bright 1982a: 127; Mutchler 1938: 19; Schedl 1974e: 50, 1978c: 293. (**tx**) Blair 1933: 487; Schedl 1974e: 50.

***kleinei* Eggers** 1951: 151. Lectotype ♂; Brasil (Corumba, in Staate Matto Grosso); USNM, Washington, designated by Anderson & Anderson 1971: 17.

Distribution: South America (Brazil).

Notes: (3) Schedl 1979c: 127 (cites *simile* Eggers, nomen nudum).

References: (**ds**) Schedl 1973d: 154. (**tx**) Anderson, W. H. & Anderson 1971: 17; Eggers 1951: 151; Schedl 1979c: 127.

***lucidum* Wood** 1971: 12. Holotype ♂; Finca Gromaco on Rio Coto Brus, Puntarenas, Costa Rica; Wood Collection.

Distribution: North America (Costa Rica).

Hosts: *Cedrela mexicana*.

References: (**hb**) Wood, S. L. 1982b: 460. (**ds**) Wood, S. L. 1982b: 460. (**tx**) Wood, S. L. 1971: 12–13, 1982b: 460.

***pallidum* (Chapuis)** 1869: 41 (*Nemobius*). Syntypes, sex?; Guadeloupe; IRSNB, Brussels.

Distribution: Antilles Islands (Guadeloupe).

References: (**cn**) Mumford 1960: 37. (**ds**) Blackwelder 1947: 786; Dash 1917: 56–60; Fleutiaux & Salle 1890: 456; Hagedorn 1910d: 76; Kleine 1913b: 144, 1914b: 379; Mumford 1960: 37; Schedl 1972g: 42, 1976a: 50; Tucker 1952: 347. (**tx**) Blair 1933: 487; Chapuis 1869: 41, 1873: 249; Eggers 1940a: 108, 1951: 151; Gemminger & Harold 1872: 2673; Hagedorn 1910a: 116.

***perditum* Wood** 1971: 12. Holotype ♂; La Ceiba, Atlantida, Honduras; Wood Collection.

Distribution: North America (Honduras).

References: (**ds**) Wood, S. L. 1982b: 460. (**tx**) Wood, S. L. 1971: 12, 1982b: 460.

***reticulatum* Schedl** 1940a: 335. Lectotype ♀; Tonala, Chiapas, Mexico; Schedl Collection in NHMW, Wien, designated by Wood 1974d: 287.

Distribution: Antilles Islands (Jamaica), North America (Guatemala/ Honduras/ Chiapas in Mexico), South America (Venezuela).

Hosts: *Ficus* spp.

References: (**ec**) Equihua & Atkinson 1986: 627. (**hb**) Equihua & Atkinson 1986: 627; Wood, S. L. 1982b: 457. (**ds**) Atkinson & Equihua 1988: 100; Blackwelder 1947: 786; Bright 1972d: 43, 1982b: 164, 1985c: 172; Equihua & Atkinson 1986: 627; Estrada & Atkinson 1988: 205; Ferrer 1942; Wood, S. L. 1982b: 457. (**tx**) Bright 1972d: 43, 1985c: 172; Schedl 1940a: 335, 1979c: 210; Wood, S. L. 1973c: 183, 1974d: 287, 1982b: 457.

fici Wood 1971: 11. Holotype ♂; Olanchito, Honduras; Wood Collection. Synonymy: Wood 1974d: 287.

References: (**tx**) McNamara 1977: 199; Wood, S. L. 1971: 11–12, 1974d: 287.

***setulosum* Waterhouse** 1890: 553. Syntypes 2, sex?; Fernando Noranha; BMNH, London.
Distribution: South America (Brazil).
Hosts: *Ficus* sp.
References: (**ds**) Alvarenga 1962: 24; Blackwelder 1947: 786; Hagedorn 1910d: 76; Kleine 1913b: 144, 1914b: 332. (**tx**) Hagedorn 1910a: 116; Waterhouse 1890: 553.

***subcarinatum* Wood** 1971: 13. Holotype ♂; 8 km SW Bumbum, Barinas, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Brosimum* sp.
References: (**tx**) Wood, S. L. 1971: 13.

***uniseriatum* Schedl** 1973a: 370. Holotype ♀?; Brasilien, Faz. Taparinha, prox. Santarem, Parana; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1973a: 370, 1979c: 261.

Genus *Gymnochilus* Eichhoff

GYMNOCHILUS EICHHOFF 1868a: 399. Type-species: *Gymnochilus zonatus* Eichhoff, monobasic.
Problechilus Eichhoff 1878b: 46, 167. Type-species: *Gymnochilus zonatus* Eichhoff, automatic, an isotypical junior synonym.
References: (**tx**) Blandford 1897a: 171–173; Eggers 1932a: 226, 1933g: 19; Eichhoff 1878b: 46, 167; Hagedorn 1910a: 53; Wood, S. L. 1972c: 140.
Meringopalpus Hagedorn 1905: 547. Type-species: *Meringopalpus fallax* Hagedorn = *Gymnochilus zonatus* Eichhoff. Synonymy: Eggers 1932: 226.
References: (**tx**) Eggers 1932a: 226, 1933g: 19; Hagedorn 1905: 547, 1910a: 52–53.
Keys: Wood 1982b: 462.
Notes: (3) *Gymnochila* Dejean 1835 was incorrectly regarded as a homonym by Eichhoff 1878b: 167.
References: (**hb**) Wood, S. L. 1986a: 60. (**ds**) Blackwelder 1947: 786; Wood, S. L. 1986a: 60. (**tx**) Eichhoff 1868a: 399, 1878b: 46, 167; Wood, S. L. 1972c: 140, 1982b: 461–466, 1986a: 60.

***alni* Wood** 1971: 14. Holotype ♂; 10 km NE Teziutlan, Puebla, Mexico; Wood Collection.
Figures: Atkinson et al. 1986: 24.
Distribution: North America (Mexico, Puebla in Mexico).
Hosts: *Alnus* sp.
References: (**hb**) Atkinson & Equihua 1985b: 232; Atkinson et al. 1986: 26; Burgos & Saucedo 1983: 77; Wood, S. L. 1982b: 464. (**ds**) Atkinson & Equihua 1985a: 80, 1985b: 232; Atkinson et al. 1986: 26; Burgos & Saucedo 1983: 77; Wood, S. L. 1982b: 464. (**tx**) Atkinson et al. 1986: 24; Muskus, A. 1984: 76; Wood, S. L. 1971: 14, 1982b: 464.

***alternatus* (Eggers)** 1943a: 345 (*Problechilus*). Holotype ♂; Bolivia (Cochabamba); MNHN, Paris.
Distribution: South America (Bolivia).
References: (**tx**) Eggers 1943a: 345.

***brevis* (Eggers)** 1932a: 231 (*Problechilus*). Holotype, sex?; Bolivien (Cochabamba); USNM, Washington.
Distribution: South America (Bolivia).
References: (**ds**) Blackwelder 1947: 786. (**tx**) Anderson, W. H. & Anderson 1971: 8; Eggers 1932a: 231–232; Schedl 1979c: 47.

***consocius* (Blandford)** 1897a: 171 (*Problechilus*). Holotype ♂; Cerro Zunil, Guatemala; BMNH, London.
Distribution: North America (Guatemala), South America (Brazil/ Venezuela).
Hosts: *Ficus* spp.
References: (**hb**) Wood, S. L. 1982b: 465. (**ds**) Blackwelder 1947: 786; Hagedorn 1910d: 34; Kleine 1912b: 190, 1914b: 358; Wood, S. L. 1982b: 465. (**tx**) Blandford 1897a: 171; Eggers 1932a: 227–232; Hagedorn 1910a: 53; Schedl 1951m: 87; Wood, S. L. 1974d: 281, 1982b: 465.
trimaculatus Schedl 1935d: 91 (*Problechilus*). Holotype ♀; Venezuela [probably Colonia Tovar]; Schedl Collection in NHMW, Wien. Synonymy: Wood 1974d: 281.
References: (**ds**) Blackwelder 1947: 786. (**tx**) Schedl 1935d: 91; Wood, S. L. 1974d: 281.
novateutonicus Schedl 1936i: 105 (*Problechilus*). Holotype, sex?; Brasilien, Nova Teutonia; Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 173.
References: (**ds**) Blackwelder 1947: 786; Schedl 1966f: 84, 1967d: 2, 1972g: 42, 1973d: 154. (**tx**) Schedl 1936i: 105; Wood, S. L. 1989: 173.

***glaber* (Schedl)** 1951m: 87 (*Problechilus*). Holotype, sex?; Peru, Marcapata; Eggers Collection, in NHMW, Wien.
Distribution: South America (Peru).
References: (**tx**) Schedl 1951m: 87, 1979c: 104.

***insularis* (Eggers)** 1932a: 232 (*Problechilus*). Holotype, sex?; Guadeloupe (Trois Rivieres); MNHN, Paris.
Distribution: Antilles Islands (Dominica, Guadeloupe).
References: (**ds**) Blackwelder 1947: 786; Bright 1981c: 154, 1985c: 172. (**tx**) Bright 1985c: 172; Eggers 1932a: 232, 1940a: 108; Schedl 1979c: 126.

***laevicollis* (Eggers)** 1932a: 230 (*Problechilus*). Holotype, sex?; Bolivien (Cochabamba); USNM, Washington.
Distribution: South America (Bolivia).
References: (**ds**) Blackwelder 1947: 786. (**tx**) Anderson, W. H. & Anderson 1971: 17; Eggers 1932a: 230.

***minor* (Blandford)** 1897a: 172 (*Problechilus*). Lectotype ♂; Guatemala City, Guatemala; BMNH, Washington, designated by Wood 1982b: 462.
Distribution: North America (Costa Rica/ Guatemala/ Honduras/ "Mexico").
Hosts: *Ficus* spp.
References: (**hb**) Burgos & Saucedo 1983: 78; Wood, S. L. 1982b: 464. (**ds**) Atkinson et al. 1986: 54; Blackwelder 1947: 786; Burgos & Saucedo 1983: 78; Hagedorn 1910d: 34; Kleine 1912b: 190, 1914b: 348; Schedl 1970e: 90; Wood, S. L. 1982b: 464. (**tx**) Blandford 1897a: 172; Eggers 1932a: 227; Hagedorn 1910a: 53; Schedl 1951m: 86; Wood, S. L. 1974d: 281, 1982b: 464.
varius Schedl 1951m: 86 (*Problechilus*). Holotype ♀; "Mexico"; Schedl Collection in NHMW, Wien. Synonymy: Wood 1974d: 281.
References: (**tx**) Schedl 1951m: 86; Wood, S. L. 1974d: 281.

***pilifer* (Eggers)** 1932a: 229 (*Problechilus*). Holotype, sex?; Bolivien (Cochabamba); USNM, Washington.
Distribution: South America (Bolivia).
References: (**ds**) Blackwelder 1947: 786. (**tx**) Anderson, W. H. & Anderson 1971: 25; Eggers 1932a: 229; Schedl 1979c: 194.

***pilosulus* (Eggers)** 1932a: 234 (*Problechilus*). Holotype, sex?; Bolivia (Cochabamba); USNM, Washington.
Distribution: South America (Bolivia).
References: (**ds**) Blackwelder 1947: 786. (**tx**) Anderson, W. H. & Anderson 1971: 25; Eggers 1932a: 234.

***reitteri* Eichhoff** 1878b: 169. Lectotype ♂; America borealis (Mexico); USNM, Washington, designated by Wood 1979b: 135.
Distribution: North America (Costa Rica/ Guatemala/ Durango, Michoacan in Mexico/ Nicaragua/ Panama).
Hosts: *Ficus* spp.
References: (**ec**) Equihua & Atkinson 1986: 627. (**hb**) Atkinson & Equihua 1985b: 232; Atkinson et al. 1986: 54; Burgos & Saucedo 1983: 77; Equihua & Atkinson 1986: 627; Wood, S. L. 1982b: 463. (**ds**) Atkinson & Equihua 1985b: 232, 1986a: 420, 1988: 90; Atkinson et al. 1986: 54; Blackwelder 1947: 786; Blandford 1897a; Burgos & Saucedo 1983: 77; Equihua & Atkinson 1986: 627; Ferrer 1942; Hagedorn 1910d: 34; Kleine 1912b: 190, 1914b: 349, 358. (**tx**) Blandford 1897a; Eggers 1932a: 227; Eichhoff 1878b: 169, 1898a: 388; Hagedorn 1910d: 53; Schedl 1940a: 336, 1979c: 210; Wood, S. L. 1979b: 135, 1982b: 463.
striatus Eggers 1932a: 227 (*Problechilus*). Holotype ♂; Mexico (Canelas) [probably Durango]; USNM, Washington. Synonymy: Wood 1979b: 135.
References: (**ds**) Blackwelder 1947: 786; Ferrer. (**tx**) Anderson, W. H. & Anderson 1971: 6; Eggers 1932a: 227; Schedl 1940a: 336, 1956b: 30; Wood, S. L. 1979b: 135.
bicolor Eggers 1932a: 228 (*Problechilus*). Holotype ♂; Nicaragua; USNM, Washington. Synonymy: Wood 1979b: 135.
References: (**ds**) Blackwelder 1947: 786. (**tx**) Eggers 1932a: 228; Wood, S. L. 1979b: 135.

***zonatus* Eichhoff** 1868a: 399. Holotype, sex?; Colombia; Hamburg Museum, lost.
Distribution: South America (Colombia/ Venezuela).
Hosts: *Ficus* spp.
References: (**ds**) Blackwelder 1947: 786; Gemminger & Harold 1872: 2693; Hagedorn 1910d: 34; Kleine 1912b: 190, 1914b: 341. (**tx**) Eggers 1931c: 19, 1932a: 226, 232, 1933b: 2, 1933g: 19; Eichhoff 1868a: 399, 1878b: 167, 169; Hagedorn 1910a: 53; Hopkins 1914: 122, 128; Lucas 1920: 537; Wood, S. L. 1974d: 281.
fallax Hagedorn 1905: 548 (*Meringopalpus*). Holotype, sex?; Colonia Tovar, Venezuela; not located. Synonymy: Wood 1974d: 281.
References: (**ds**) Hagedorn 1910d: 19; Kleine 1912b: 175, 1914b: 339. (**tx**) Eggers 1931c: 19, 1932a: 226, 1933b: 2, 1933g: 19; Hagedorn 1905: 547–548, 1910a: 53; Hopkins 1914: 124; Lucas 1920: 404; Wood, S. L. 1974d: 281. (**ms**) Lucas 1920: 404.
freyi Schedl 1966f: 103 (*Problochelus*). Holotype, sex?; Venezuela, Rancho Grande, Maracay, I; Frey Museum, Tutzing (now in NHMBS, Basel). Synonymy: Wood 1974d: 282.
References: (**ds**) Schedl 1966f: 79. (**tx**) Schedl 1966f: 103, 1979c: 100; Wood, S. L. 1974d: 282.

Genus *Scolytodes* Ferrari

SCOLYTODES FERRARI 1867a: 77. Type-species: *Scolytodes laevigatus* Ferrari, monobasic.
Hexacolus Eichhoff 1868a: 399. Type-species: *Hexacolus glaber* Eichhoff, monobasic. Synonymy: Wood 1972c: 141.
References: (**tx**) Blandford 1897a: 174, 180–183; Eggers 1940a: 123–141: Eichhoff 1868a: 399, 1878b: 306; Gemminger & Harold 1872: 2694; Hagedorn 1910a: 113–114, 1910d: 76; Schedl 1940c: 203–208, 1952d: 346, 1956a: 30; Wood, S. L. 1957c: 396, 1972c: 141.
Ctenophorus Chapuis 1869: 49. Type-species: *Ctenophorus laevigatus* Chapuis = *Scolytodes chapuisi* Wood, monobasic. Synonymy: Wood 1977b: 207.
References: (**tx**) Chapuis 1869: 49, 1873: 257; Eggers 1931c: 185; Hagedorn 1910a: 112–113, 1910d: 77; Hopkins 1914: 128; Schedl 1952d: 345; Wood, S. L. 1977b: 207.
Prionosceles Blandford 1897a: 177. Type-species: *Prionosceles atratus* Blandford, subsequent designation by Hopkins 1914: 128. Synonymy: Wood 1972a: 141.
References: (**tx**) Blandford 1897a: 177; Eggers

1940a: 123–141; Hopkins 1914: 128; Schedl 1952d: 345, 1962r: 85–107; Wood, S. L. 1972c: 141.

Epomadius Blandford 1897a: 179. Type-species: *Epomadius culcitatus* Blandford, monobasic. Synonymy: Wood 1977c: 384.
References: (**tx**) Blandford 1897a: 174, 179–180; Hagedorn 1910a: 118, 1910d: 76; Wood, S. L. 1977c: 384.

Erineophilus Hopkins 1902a: 34. Type-species: *Erineophilus schwarzi* Hopkins, original designation. Synonymy: Schedl 1952d: 346.
References: (**tx**) Chamberlin 1939: 238–239; Hagedorn 1910a: 133–135, 1910d: 82; Hopkins 1902a: 34; Schedl 1952d: 346; Swaine 1909: 108, 1918a: 39; Wood, S. L. 1957c: 396.

Hylocurosoma Eggers 1940a: 138. Type-species: *Hylocurosoma striatum* Eggers, monobasic. Synonymy: Schedl 1952d: 346.
References: (**tx**) Eggers 1940a: 138; Schedl 1952d: 346.

Hexacolinus Schedl 1963d: 217. Type-species: *Hexacolinus minutissimus* Schedl, 1963 = *Scolytodes minutissimus* Schedl, 1952, original designation. Synonymy: Wood 1984b: 228.
References: (**tx**) Schedl 1963d: 217; Wood, S. L. 1984b: 228.

Keys: Wood 1982b: 467.

References: (**hb**) Wood, S. L. 1986a: 60. (**ds**) Wood, S. L. 1986a: 60. (**tx**) Eggers 1931c: 185; Ferrari 1867a: 77; Schedl 1952d: 343, 1969a: 202–219; Wood, S. L. 1972c: 141, 1977b: 207, 1977c: 384, 1982b: 467, 1986a: 60.

***acares* Wood** 1969b: 15. Holotype ♀; Rio Damitas, Dota Mts., San Jose, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica/ Guatemala/ Panama).
Hosts: *Cecropis* sp. leaf petioles.
References: (**hb**) Wood, S. L. 1982b: 493. (**ds**) Wood, S. L. 1982b: 493. (**tx**) Wood, S. L. 1969b: 15, 1982b: 493.

***adustus* (Eggers)** 1943a: 368 (*Hylocurosoma*). Holotype ♂?; Bolivia (Cochabamba); USNM, Washington.
Distribution: South America (Bolivia).
References: (**tx**) Anderson, W. H. & Anderson 1971: 3; Eggers 1943a: 368; Schedl 1952d: 346.

***aequipunctatus* Eggers** 1943a: 361. Holotype, sex?; Bolivia (Cochabamba); MNHN, Paris.
Distribution: South America (Bolivia).
References: (**tx**) Eggers 1943a: 361.

***alni* Wood** 1969b: 20. Holotype ♀; Volcan Irazu, Cartago, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: *Alnus acuminatus*.
References: (**hb**) Wood, S. L. 1982b: 499. (**ds**) Wood, S. L. 1982b: 499. (**tx**) Wood, S. L. 1969b: 20, 1982b: 499.

***amabilis* Wood** 1975a: 26. Holotype ♀; Mt. Tzontehuitz, Chiapas, Mexico; CNCI, Ottawa.
Distribution: North America (Chiapas in Mexico).
Hosts: *Quercus* sp.
References: (**ds**) Wood, S. L. 1982b: 490. (**tx**) McNamara 1984: 759; Wood, S. L. 1975a: 26, 1982b: 490.

***amoenus* Wood** 1967c: 128. Holotype ♀; 35 km N Juchitlan, Jalisco, Mexico; Wood Collection.
Distribution: North America (Jalisco, Tamaulipas in Mexico).
Hosts: *Ficus* sp.
References: (**ec**) Equihua & Atkinson 1986: 627. (**hb**) Equihua & Atkinson 1986: 627; Wood, S. L. 1982b: 479. (**ds**) Atkinson et al. 1986: 56; Equihua & Atkinson 1986: 627; Wood, S. L. 1982b: 479. (**tx**) Wood, S. L. 1967c: 128, 1982b: 479.

***anceps* Wood** 1981: 126. Holotype ♀; Piedras Blancas, 11 km W Medellin, Antioquia, Colombia; Wood Collection.
Distribution: South America (Colombia).
Hosts: *Cecropia* sp. leaf petioles.
References: (**tx**) Wood, S. L. 1981: 126.

***argentinensis* (Eggers)** 1928c: 87 (*Prionosceles*). Lectotype, sex?; Argentina; USNM, Washington, designated by Anderson & Anderson 1971.
Distribution: South America (Argentina).
References: (**ds**) Blackwelder 1947: 786. (**tx**) Anderson, W. H. & Anderson 1971: 4; Eggers 1928c: 87.

***ater* (Eggers)** 1943a: 365 (*Prionosceles*). Holotype, sex?; Bolivia (Cochabamba); USNM, Washington.
Distribution: South America (Bolivia).
Notes: (1) Originally spelled *atrum*, gender change required the spelling correction.
References: (**tx**) Anderson, W. H. & Anderson 1971: 5; Eggers 1943a: 365–366; Schedl 1952d: 346.

***aterrimus* Wood** 1988a: 32. Holotype, sex?; Bolivia (Cochabamba); MNHN, Paris, automatic.
Distribution: South America (Bolivia).
References: (**tx**) Wood, S. L. 1988a: 32.

ater Eggers 1943a: 371 (*Hylocurosoma*). Holotype, sex?; Bolivia (Cochabamba); MNHN, Paris, preocupiedby Eggers 1943.
Notes: (1) This name was originally spelled *atrum* before the gender change.
References: (**tx**) Eggers 1943a: 371; Schedl 1952d: 346.

***atratus* (Blandford)** 1897a: 178 (*Prionosceles*). Lectotype ♂; Senahu, Vera Paz, Guatemala; BMNH, London, designated by Wood 1982b: 475.
Notes: (1) Wood 1982b: 475 (subspecies recognized; however, additional studies in Nicaragua and El Salvador might indicate gradual clinal intergradation, not subspecies).
References: (**hb**) Atkinson & Equihua 1985b: 232, 1986a: 420; Wood, S. L. 1982b: 475. (**ds**) Atkinson & Equihua 1985b: 232, 1986a: 420; Blackwelder

1947: 786; Bright 1972b: 1497; Hagedorn 1910d: 76; Kleine 1914b: 370; Wood, S. L. 1982b: 475. (**tx**) Blandford 1897a: 178; Hagedorn 1910a: 117; Hopkins 1914: 128; Wood, S. L. 1982b: 475.

Distribution: North America (Guatemala/ Honduras/ Chiapas, Oaxaca, Veracruz in Mexico).

Hosts: *Cecropia* sp. leaf petioles.

Notes: (1) Wood 1982b: 475 (subspecies recognized).

References: (**tx**) Blandford 1897a: 178; Wood, S. L. 1982b: 475.

atratus panamensis (Wood) 1961d: 103 (*Prionosceles*). Holotype ♂; Summit, Canal Zone, Panama; USNM, Washington.

Notes: Wood 1982b: 476 (reduced to subspecific rank).

Distribution: North America (Costa Rica/ Panama).

Hosts: *Cecropia* sp. leaf petioles.

References: (**ec**) Wood, S. L. 1983b: 768. (**hb**) Wood, S. L. 1983b: 768. (**ds**) Kleine 1914b: 370; Wood, S. L. 1982b: 476. (**tx**) Wood, S. L. 1961d: 103, 1982b: 476.

***atrotibialis* (Eggers)** 1943a: 365 (*Prionosceles*). Holotype, sex?; Bolivia (Cochabamba); MNHN, Paris.

Distribution: South America (Bolivia).

References: (**tx**) Eggers 1943a: 365; Schedl 1979c: 31.

***banosus* (Hagedorn)** 1909a: 743 (*Hexacolus*). Syntypes 2, sex?; Banos, Ecuador; MNHN, Paris.

Distribution: South America (Ecuador).

References: (**ds**) Blackwelder 1947: 786; Hagedorn 1910d: 77; Kleine 1914b: 343. (**tx**) Hagedorn 1909a: 743, 1910a: 114; Schedl 1979c: 33.

***bicolor* (Eggers)** 1931b: 33 (*Hexacolus*). Holotype ♂; Sao Paulo, Brazil); Prague Museum.

Distribution: South America (Brazil).

References: (**ds**) Blackwelder 1947: 786. (**tx**) Eggers 1931b: 33, 1940a: 132; Schedl 1954b: 22.

***blandfordi* (Schedl)** 1936i: 104 (*Hexacolus*). Holotype ♂; Costa Rica, Hamburgfarm, Rio Reventazon, Ebene Limon; Schedl Collection in NHMW, Wien.

Distribution: North America (Costa Rica).

Hosts: *Cecropia* sp. leaf petioles.

References: (**hb**) Wood, S. L. 1982b: 484. (**ds**) Blackwelder 1947: 786; Wood, S. L. 1982b: 484. (**tx**) Blackman 1943a: 381; Schedl 1936i: 104, 1937g: 66, 1952d: 346, 355, 1979c: 42.

***boliviae* (Schedl)** 1951m: 80 (*Hexacolus*). Holotype ♂; Bolivien, Cochabamba; Eggers Collection, in NHMW, Wien.

Distribution: South America (Bolivia).

Notes: (3) Schedl 1951m: 80 (*Pityophthorus glaber* Eggers, nomen nudum, synonymy).

References: (**tx**) Schedl 1951m: 80, 1979c: 42.

***bolivianus* Eggers** 1928a: 86. Lectotype, sex?; Cochabamba, Bolivia; USNM, Washington, designated by Anderson & Anderson 1971: 7.

Distribution: South America (Bolivia).

References: (**ds**) Blackwelder 1947: 784. (**tx**) Anderson, W. H. & Anderson 1971: 7; Eggers 1928a: 86, 1934a: 80–81; Schedl 1935m: 51, 1979c: 43.

***boliviensis* Wood** 1988a: 32. Lectotype, sex?; Boliviens (Cochabamba); USNM, Washington, designated by Anderson & Anderson 1971: 7, automatic.

Distribution: South America (Bolivia).

References: (**tx**) Anderson W. H. & Anderson 1971: 7; Wood, S. L. 1988a: 32.

bolivianus Eggers 1928a: 88 (*Prionosceles*). Lectotype, sex?; Boliviens (Cochabamba); USNM, Washington, designated by Anderson & Anderson 1971: 7, preoccupied by Eggers 1928a: 86.

References: (**ds**) Blackwelder 1947: 786. (**tx**) Anderson, W. H. & Anderson 1971: 7; Eggers 1928a: 88, 1934a: 80f; Schedl 1979c: 43.

***brasilianus* Wood** 1988a: 32. Holotype ♂?; Brazil; Schedl Collection in NHMW, Wien, automatic.

Distribution: South America (Brazil).

References: (**tx**) Wood, S. L. 1988a: 32.

brasiliensis Schedl 1935f: 274 (*Hexacolus*). Holotype ♂?; Brazil; Schedl Collection in NHMW, Wien, preoccupied by Eggers 1928a: 89.

References: (**tx**) Schedl 1935f: 274, 1979c: 45; Wood, S. L. 1988a: 32.

***brasiliensis* (Eggers)** 1928a: 89 (*Prionosceles*). Holotype, sex?; Blumenau, Brazil; USNM, Washington.

Distribution: South America (Brazil).

References: (**ds**) Blackwelder 1947: 786. (**tx**) Eggers 1928a: 89–90; Schedl 1935f: 274.

***bruchi* (Hagedorn)** 1909: 743 (*Hexacolus*). Syntypes (several), sex?; Argentinien; Hamburg Museum, lost.

Distribution: South America (Argentina/ Brazil).

References: (**cn**) Costa Lima 1956. (**hb**) Costa Lima 1956. (**ds**) Blackwelder 1947: 784; Bruch 1914a; Costa Lima 1956; Hagedorn 1910d: 77; Kleine 1914b: 333. (**tx**) Bruch 1938; Costa Lima 1956; Eggers 1931c: 185; Hagedorn 1909a: 743, 1910a: 114; Schedl 1951h: 284, 1958f: 34.

***canaliculus* Wood** 1977d: 517. Holotype ♀; La Carbonera Experimental Forest, 50 km NW Merida, Merida, Venezuela; Wood Collection.

Distribution: South America (Venezuela).

Hosts: *Clusia* sp.

References: (**tx**) Wood, S. L. 1977d: 517.

***canalis* Wood** 1974a: 13. Holotype ♀; Mt. Tzontehuitz, Chiapas, Mexico; CNCI, Ottawa.

Distribution: North America (Chiapas in Mexico).

References: (**ds**) Wood, S. L. 1982b: 490. (**tx**) McNamara 1984: 759; Wood, S. L. 1974a: 13, 1982b: 490.

***cecropiavorus* Wood** 1969b: 17. Holotype ♀; San Ignacio de Acosta, San Jose, Costa Rica; Wood Collection.
Notes: (1) Wood 1982b: 482 (Subspecies are recognized in the upland area and on opposite sides of Costa Rica).
References: (**hb**) Wood, S. L. 1982b: 482. (**ds**) Wood, S. L. 1982b: 482. (**tx**) Wood, S. L. 1969b: 17, 1982b: 482.

cecropiavorus cecropiavorus:
Distribution: North America (central plateau and northern Costa Rica).
Hosts: *Cecropia peltata* leaf petioles.
References: (**tx**) Wood, S. L. 1969b: 17, 1982b: 483.

***cecropiavorus acuminatus* Wood** 1969b: 17. Holotype ♀; Tapanti, Cartago, Costa Rica; Wood Collection.
Distribution: North America (eastern Costa Rica).
Hosts: *Cecropia peltata* leaf petioles.
References: (**tx**) Wood, S. L. 1969b: 17–18, 1982b: 483.

***cecropiavorus punctifer* Wood** 1969b: 18. Holotype ♂; Gatun Dam, Canal Zone, Panama; Wood Collection.
Distribution: North America (Pacific slope of Costa Rica and Panama).
Hosts: *Cecropia peltata* leaf petioles.
References: (**hb**) Wood, S. L. 1982b: 483. (**ds**) Wood, S. L. 1982b: 483. (**tx**) Wood, S. L. 1969b: 18, 1982b: 483.

***cecropicolens* Wood** 1969b: 16. Holotype ♀; Peralta, Cartago, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: *Cecropia* sp. branch terminal.
References: (**hb**) Wood, S. L. 1982b: 481. (**ds**) Wood, S. L. 1982b: 481. (**tx**) Wood, S. L. 1967c: 123, 1969b: 16, 1982b: 481.

***cecropii* (Schedl)** 1937g: 66 (*Hexacolus*). Holotype ♀; La Hondura, Costa Rica; Schedl Collection in NHMW, Wien.
Distribution: North America (Costa Rica).
Hosts: *Cecropia peltata* leaf petioles.
References: (**hb**) Wood, S. L. 1982b: 484. (**ds**) Blackwelder 1947: 786; Wood, S. L. 1982b: 484. (**tx**) Blackman 1943a; Schedl 1937g: 66, 1952d: 346, 1955d: 274, 1979c: 55; Wood, S. L. 1969b: 17, 1982b: 484.

***cedrelae* Wood** 1969b: 19. Holotype ♀; Rincon de Osa, Puntarenas, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: *Cedrela mexicana, Vismia guianensis*.
References: (**hb**) Wood, S. L. 1982b: 495. (**ds**) Wood, S. L. 1982b: 495. (**tx**) Wood, S. L. 1969b: 19, 1982b: 495.

***chapuisi* Wood** 1977b: 210. Syntypes 2 ♂; Colombie; IRSNB, Brussels, automatic.
Distribution: North America (Panama), South America (Colombia/ Venezuela).
Hosts: *Cecropia* spp. leaf petioles.
References: (**tx**) Wood, S. L. 1977b: 210, 1977d: 517.

laevigatus Chapuis 1869: 49 (*Ctenophorus*). Syntypes ♂; Colombie; IRSNB, Brussels, preoccupied by Ferrari 1867a: 77.
References: (**tx**) Chapuis 1869: 49, 1873: 257; Schedl 1935f: 273; Wood, S. L. 1977b: 210, 1977d: 517.

levis Blackman 1943a: 382 (*Hexacolus*). Holotype ♀; Paraiso, Canal Zone, Panama; USNM, Washington, preoccupied by *laevis* Eggers 1928 [Code, Article 58(2)]. Synonymy: Wood 1977d: 517.
References: (**hb**) Wood, S. L. 1982b: 478. (**ds**) Wood, S. L. 1982b: 478. (**tx**) Blackman 1943a: 382; Wood, S. L. 1977b: 210, 1977d: 517, 1982b: 478.

***clusiacolens* Wood** 1967c: 121. Holotype ♀; 10 km E Volcan Paricutin, Michoacan, Mexico; Wood Collection.
Distribution: North America (Guatemala/ Honduras/ Chiapas, Michoacan in Mexico).
Hosts: *Clusia* sp.
References: (**hb**) Wood, S. L. 1982b: 489. (**ds**) Atkinson & Equihua 1985b: 233; Wood, S. L. 1982b: 489. (**tx**) Wood, S. L. 1967c: 121, 1982b: 489.

***clusiae* Wood** 1969b: 14. Holotype ♀; Volcan Poas, Heredia, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: *Clusia* sp.
References: (**hb**) Wood, S. L. 1982b: 488. (**ds**) Wood, S. L. 1982b: 488. (**tx**) Wood, S. L. 1967c: 122, 1969b: 14, 1982b: 488.

***clusiavorus* Wood** 1967c: 122. Holotype ♀; Volcan de Agua, Esquintla, Guatemala; Wood Collection.
Distribution: North America (Guatemala/ Veracruz in Mexico).
Hosts: *Clusia* sp.
References: (**hb**) Wood, S. L. 1982b: 489. (**ds**) Wood, S. L. 1982b: 489. (**tx**) Wood, S. L. 1967c: 122, 1982b: 489.

***columbianus* (Schedl)** 1967f: 160 (*Hexacolus*). Holotype ♂; Colombia, Sierra S. Lorenzo; NHMB, Budapest.
Distribution: South America (Colombia).
References: (**tx**) Schedl 1967f: 160–161.

***comitabilis* Wood** 1978b: 401. Holotype ♀; Merida, Merida, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Clusia* sp.
References: (**tx**) Wood, S. L. 1978b: 401.

***confusus* (Eggers)** 1943a: 370 (*Hylocurosoma*). Holotype, sex?; Bolivia (Cochabamba); USNM, Washington.
Distribution: South America (Bolivia).

Notes: (1) Name originally spelled *confusum*.
References: (**tx**) Anderson, W. H. & Anderson 1971: 10; Eggers 1943a: 370; Schedl 1952d: 346.

***constrictus* Wood** 1977d: 518. Holotype ♀; Piedras Blancas, 11 km W Medellin, Antioquia, Colombia; Wood Collection.
Distribution: South America (Colombia).
Hosts: (?) *Baccharus* sp.
References: (**tx**) Wood, S. L. 1977d: 518.

***contractus* Wood** 1977d: 518. Holotype ♀; 13 km SE El Vigia, Merida, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: Liana.
References: (**tx**) Wood, S. L. 1977d: 518.

***costabilis* Wood** 1974a: 13. Holotype ♀; Lago Catemaco, Veracruz, Mexico; CNCI, Ottawa.
Distribution: North America (Veracruz in Mexico).
References: (**ds**) Wood, S. L. 1982b: 481. (**tx**) McNamara 1984: 759; Wood, S. L. 1974a: 13, 1982b: 481.

***crassus* Wood** 1971: 16. Holotype ♂; Barro Colorado Island, Canal Zone, Panama; Wood Collection.
Distribution: North America (Panama).
References: (**ds**) Wood, S. L. 1982b: 487. (**tx**) Wood, S. L. 1971: 16, 1982b: 487.

***crinalis* Wood** 1978b: 402. Holotype ♀; La Carbonera Experimental Forest, 50 km NW Merida, Merida, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Clusia* sp.
References: (**tx**) Wood, S. L. 1978b: 402.

***crinitus* Wood** 1978b: 402. Holotype ♀; El Laurel Experimental Farm, 12 km SE Caracas, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: Leguminous liana.
References: (**tx**) Wood, S. L. 1978b: 402.

***cubensis* (Schedl)** 1972g: 56 (*Hexacolus*). Holotype ♂; Cuba, Prov. Pinar del Rio, Malas; Schedl Collection in NHMW, Wien.
Distribution: Antilles Islands (Cuba).
Hosts: *Ficus* sp.
Notes: (3) Schedl labeled the male holotype as a female.
References: (**ds**) Bright 1985c: 172. (**tx**) Bright 1985c: 172; Schedl 1972g: 56, 1979c: 71.

***culcitatus* (Blandford)** 1897a: 179 (*Epomadius*). Lectotype ♀?; Pena Blanca, 3000–4000 ft., Chiriqui, Panama; BMNH, London, designated by Wood 1982b: 494.
Distribution: North America (Panama).
References: (**ds**) Blackwelder 1947: 786; Hagedorn 1910d: 76; Kleine 1914b: 370; Wood, S. L. 1982b: 494. (**tx**) Blandford 1897a: 179; Hagedorn 1910a: 118; Hopkins 1914: 121; Lucas 1920: 271; Wood, S. L. 1977c: 384, 1982b: 494. (**ms**) Lucas 1920: 271.

***cylindricus* Schedl** 1978c: 297. Holotype ♀; Peru, Machu-Picchu, 2000 m; Schedl Collection in NHMW, Wien.
Distribution: South America (Peru).
References: (**tx**) Schedl 1978c: 297–298.

***declivistriatus* Schedl** 1967a: 126. Holotype ♂?; Buenaventura, Columbien to Tokyo (Japan), imported; PPST, Tokyo.
Distribution: South America (Colombia).
Notes: *Virola* sp.
References: (**tx**) Schedl 1967a: 126, 1979c: 76.

***decorus* Wood** 1978b: 402. Holotype ♂; 40 km E Canton, Barinas, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Nectandra* sp.
References: (**tx**) Wood, S. L. 1978b: 402.

***discedens* (Eggers)** 1940a: 133 (*Hexacolus*). Holotype ♀; Guadeloupe (Trois Rivieres); Eggers Collection, in NHMW, Wien.
Distribution: Antilles Islands (Guadeloupe).
References: (**ds**) Bright 1985c: 172. (**tx**) Bright 1985c: 172; Eggers 1940a: 133; Schedl 1979c: 82.

***discriminatus* Wood** 1988a: 32. Holotype, sex?; Bolivia (Cochabamba); MNHN, Paris, automatic.
Distribution: South America (Bolivia).
References: (**tx**) Wood, S. L. 1988a: 32.

discedens Eggers 1943a: 360. Holotype, sex?; Bolivia (Cochabamba); MNHN, Paris, preoccupied by Eggers 1940.
References: (**tx**) Eggers 1943a: 360; Schedl 1979c: 82.

***dissimilis* Schedl** 1967d: 5. Holotype ♂; Brasilien, Ibicare, 27 degrees 09′-51 degrees 18′, 600 m; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1967d: 5–6, 1979c: 82–83.

***dubiosus* (Schedl)** 1972g: 55 (*Prionosceles*). Holotype ♂; Brasilien, S. Bocaina, S. J. Berreira, 1650 m; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1972g: 55, 1979c: 84.

***eggersi* (Schedl)** 1952d: 346 (*Hexacolus*). Holotype, sex?; Bolivia (Cochabamba); MNHN, Paris, automatic.
Distribution: South America (Bolivia).
References: (**tx**) Schedl 1952d: 346.

bicolor Eggers 1943a: 363. Holotype, sex?; Bolivia (Cochabamba); MNHN, Paris, preoccupied by Eggers 1931.
References: (**tx**) Eggers 1943a: 363; Schedl 1952d: 346, 1954b: 22.

***elongatissismus* Wood** 1988a: 32. Lectotype, sex?; Bolivia (Cochabamba); USNM, Washington, designated by Anderson & Anderson 1971: 12, automatic.
Distribution: South America (Bolivia).

References: (**tx**) Wood, S. L. 1988a: 32.

elongatus Eggers 1943a: 369 (*Hylocurosoma*). Lectotype, sex?; Bolivia (Cochabamba); USNM, Washington, designated by Anderson & Anderson 1971: 12, preoccupied by Schedl 1935.
Notes: (1) The name *elongatus* Schedl is treated below as a synonym of *trispinosus* Eggers, but it is an available name.
References: (**ds**) Schedl 1970e: 91, 1973a: 366, 1973d: 154. (**tx**) Anderson, W. H. & Anderson 1971: 12; Eggers 1943a: 369; Schedl 1952d: 346, 1979c: 89.

***erineophilus* Wood** 1969b: 20. Holotype ♀; Tapanti, Cartago, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: *Ficus* sp.
References: (**hb**) Wood, S. L. 1982b: 499. (**ds**) Wood, S. L. 1982b: 499. (**tx**) Wood, S. L. 1969b: 20–21, 1982b: 499.

***exiguus* Wood** 1969b: 22. Holotype ♂; San Isidro del General, San Jose, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: *Ficus* sp.
References: (**hb**) Wood, S. L. 1982b: 506. (**ds**) Wood, S. L. 1982b: 506. (**tx**) Wood, S. L. 1969b: 22–23, 1982b: 506.

***eximius* Wood** 1981: 122. Holotype ♀; Peru, Machu-Pichu, 2000 m; Schedl Collection in NHMW, Wien, automatic.
Distribution: South America (Peru).
References: (**tx**) Wood, S. L. 1981: 122.

grandis Schedl 1978c: 298. Holotype ♀; Peru, Machu-Pichu, 2000 m; Schedl Collection in NHMW, Wien, preoccupied by Schedl 1962.
References: (**tx**) Schedl 1978c: 298, 1979c: 109.

***facetus* Wood** 1967c: 126. Holotype ♀; Palin, Esquintla, Guatemala; Wood Collection.
Distribution: North America (Guatemala).
Hosts: *Ficus* sp.
References: (**hb**) Wood, S. L. 1982b: 497. (**ds**) Wood, S. L. 1982b: 497. (**tx**) Wood, S. L. 1967c: 126, 1982b: 497.

***festus* Wood** 1977d: 519. Holotype ♀; Piedras Blancas, 11 km W Medellin, Antioquia, Colombia; Wood Collection.
Distribution: South America (Colombia).
Hosts: *Cecropia* sp. leaf petioles.
References: (**tx**) Wood, S. L. 1977d: 519.

***ficicolens* Wood** 1981: 126. Holotype ♀; Merida, Merida, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Ficus* sp.
References:(**tx**) Wood, S. L. 1981: 126.

***ficivorus* Wood** 1967c: 125. Holotype ♀; Paulin, Guatemala; Wood Collection.
Distribution: North America (Guatemala).
Hosts: *Ficus* sp.
References: (**hb**) Wood, S. L. 1982b: 500. (**ds**) Wood, S. L. 1982b: 500. (**tx**) Wood, S. L. 1967c: 125, 1982b: 500.

***frontoglabratus* (Schedl)** 1935f: 274 (*Hexacolus*). Holotype ♀; Argentine: San Ignacio; Schedl Collection in NHMW, Wien.
Distribution: South America (Argentina).
References: (**ds**) Blackwelder 1947: 786. (**tx**) Schedl 1935f: 274, 1979c: 101.

***fulmineus* Wood** 1977b: 217. Holotype ♀; La Carbonera Experimental Forest, 50 km NW Merida, Merida, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Clusia* sp.
References: (**tx**) Wood, S. L. 1977b: 217.

***genialis* Wood** 1975a: 27. Holotype ♀; Laguna Santa Maria, Nayarit, Mexico; Wood Collection.
Distribution: North America (Jalisco, Nayarit in Mexico).
Hosts: *Ficus* sp.
References: (**tx**) Wood, S. L. 1975a: 27.

***gennaeus* Wood** 1988a: 33. Holotype ♀; 30 km N Merida, Merida, Venezuela; Wood Collection, automatic.
Distribution: South America (Venezuela).
Hosts: *Podocarpus* sp.
References: (**tx**) Wood, S. L. 1988a: 33.

genialis Wood 1978b: 403. Holotype ♀; 30 km N Merida, Merida, Venezuela; Wood Collection, preoccupied by Wood 1975.
References: (**hb**) Wood, S. L. 1982b: 480. (**ds**) Wood, S. L. 1982b: 480. (**tx**) Wood, S. L. 1978b: 403, 1982b: 480.

***glaber* (Eichhoff)** 1868a: 400 (*Hexacolus*). Holotype, sex?; Cuba; IRSNB, Brussels.
Distribution: Antilles Islands (Cuba).
References: (**ds**) Blackwelder 1947: 786; Bright 1985c: 172; Gemminger & Harold 1872: 2694; Hagedorn 1903b: 546, 1910d: 77; Kleine 1914b: 378. (**tx**) Bright 1985c: 172; Eggers 1933b: 2, 17; Eichhoff 1868a: 400, 1878b: 307; Hagedorn 1903b: 546, 1910a: 114; Hopkins 1914: 122; Lucas 1920: 328. (**ms**) Lucas 1920: 328.

***glaberescens* Wood** 1972c: 152. Holotype ♂; Summit, Canal Zone, Panama; USNM, Washington, automatic.
Distribution: North America (Costa Rica/ Panama), South America (Colombia/ Venezuela).
Hosts: *Cecropia* sp. leaf petioles.
References: (**hb**) Wood, S. L. 1982b: 474. (**ds**) Atkinson & Equihua 1985b: 232; Wood, S. L. 1982b: 474. (**tx**) Wood, S. L. 1972c: 152, 1982b: 474.

glaber Wood 1961a: 102 (*Prionosceles*). Holotype ♂; Summit, Canal Zone, Panama; USNM, Washington, preoccupied by Eichhoff 1868.
References: (**tx**) Wood, S. L. 1961a: 102, 1972c: 152.

***glaberrimus* Wood** 1972c: 152. Syntypes ♂ ♀; Bolivia (Cochabamba); MNHN, Paris, automatic.

Distribution: South America (Bolivia).
References: (**tx**) Schedl 1979c: 105; Wood, S. L. 1972c: 152.

glaber Eggers 1943a: 360. Syntypes 1 ♂, 1 ♀; Bolivia (Cochabamba); MNHN, Paris, preoccupied by Eichhoff 1868.
References: (**tx**) Eggers 1943a: 360; Schedl 1979c: 104–105; Wood, S. L. 1972c: 152.

***glabratus* (Schedl)** 1954b: 23 (*Hexacolus*). Syntypes ♂; Brasilien, Nova Teutonia; Schedl Collection in NHMW, Wien, and Plaumann Collection.
Distribution: South America (Brazil).
Notes: (1) Schedl 1979c: 105 (citation of holotype invalid).
References: (**tx**) de Ruette 1970: 101; Schedl 1954b: 23, 1979c: 105.

***glabrellus* (Schedl)** 1954b: 21 (*Hexacolus*). Syntypes ♀; Brasilien: Parana, Rondon, 500 m; Schedl Collection in NHMW, Wien, and Plaumann Collection.
Distribution: South America (Brazil).
Notes: (1) Schedl 1979c: 106 (citation of holotype invalid).
References: (**ds**) Schedl 1967d: 2. (**tx**) Schedl 1954b: 21, 1962r: 98, 1979c: 106; Wood, S. L. 1961d: 98.

***gracilis* Schedl** 1976a: 61. Holotype ♀; Corcovado, Guanabara; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1976a: 61.

***grandis* (Schedl)** 1962r: 100 (*Hexacolus*). Holotype ♂; Bolivien: Cochabamba; Schedl Collection in NHMW, Wien.
Distribution: South America (Bolivia).
References: (**tx**) Schedl 1962r: 100, 1979c: 109.

***guyanaensis* (Schedl)** 1937c: 13 (*Erineophilus*). Syntypes ♂ ♀; British Guiana: N. W. District; BMNH, London, and Schedl Collection in NHMW, Wien.
Distribution: Antilles Islands (Guadeloupe), South America (Guyana).
Hosts: *Swietenia* sp.
Notes: (3) Schedl 1962r: 96 (*mohogani* Sampson, nomen nudum, synonymy).
References: (**cn**) Gruner 1974. (**ec**) Cornic 1978; Gruner 1974; Laumond & Mauleon 1982. (**hb**) Cornic 1978; Gruner 1974. (**ds**) Blackwelder 1947: 786; Bright 1985c: 172; Schedl 1960a: 78, 1970e: 91. (**tx**) Bright 1985c: 172; Schedl 1937c: 13, 1960g: 5, 1962r: 96, 1979c: 115.

***habilis* Wood** 1978b: 403. Holotype ♀; 30 km E Merida, Merida, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Croton* sp.
References: (**tx**) Wood, S. L. 1978b: 403.

***hagedorni* (Schedl)** 1962r: 101 (*Prionosceles*). Holotype, sex?; Equateur: Mirador, 3800 m; Schedl Collection in NHMW, Wien.
Distribution: South America (Ecuador).
References: (**tx**) Schedl 1962r: 101, 1979c: 115.

***hirsutus* Wood** 1971: 16. Holotype ♂; Tapanti, Cartago, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: Liana.
References: (**hb**) Wood, S. L. 1982b: 487. (**ds**) Wood, S. L. 1982b: 487. (**tx**) Wood, S. L. 1971: 16, 1982b: 487.

***imitans* (Eggers)** 1940a: 136 (*Prionosceles*). Holotype, sex?; Guadeloupe (Trois-Rivieres); Eggers Collection, in NHMW, Wien.
Distribution: Antilles Islands (Guadeloupe).
References: (**ds**) Bright 1985c: 172. (**tx**) Bright 1985c: 172; Eggers 1940a: 136; Schedl 1979c: 121.

***immanis* Wood** 1969b: 19. Holotype ♀; Villa Mills near Cerro de la Muerte, Cartago, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: *Miconia* sp.
References: (**hb**) Wood, S. L. 1982b: 498. (**ds**) Wood, S. L. 1982b: 498. (**tx**) Wood, S. L. 1969b: 19–20, 1982b: 498.

***impressus* Wood** 1969b: 22. Holotype ♂; Turrialba, Cartago, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
References: (**hb**) Wood, S. L. 1982b: 501. (**ds**) Wood, S. L. 1982b: 501. (**tx**) Wood, S. L. 1969b: 22, 1982b: 501.

***ingae* (Blackman)** 1943c: 383 (*Prionosceles*). Holotype ♀; La Esperanza, Colombia; USNM, Washington.
Distribution: South America (Colombia).
References: (**ds**) Blackwelder 1947: 787. (**tx**) Blackman 1943c: 383.

***ingavorus* Wood** 1967c: 126. Holotype ♀; Los Corchos, Nayarit, Mexico; Wood Collection.
Distribution: North America (Nayarit in Mexico).
Hosts: *Inga* sp.
References: (**hb**) Wood, S. L. 1982b: 504. (**ds**) Wood, S. L. 1982b: 504. (**tx**) Wood, S. L. 1967c: 126, 1982b: 504.

***insularis* (Schedl)** 1952d: 357 (*Hexacolus*). Holotype ♀; Guadeloupe, Trois Rivieres; Schedl Collection in NHMW, Wien.
Distribution: Antilles Islands (Guadeloupe).
References: (**ds**) Bright 1985c: 172. (**tx**) Bright 1985c: 172; Schedl 1952d: 357, 1979c: 125.

***interpunctatus* (Eggers)** 1943a: 366 (*Prionosceles*). Holotype, sex?; Bolivien (Cochabamba); MNHN, Paris.
Distribution: South America (Bolivia).
References: (**tx**) Eggers 1943a: 366; Schedl 1979c: 127.

***irazuensis* Wood** 1969b: 15. Holotype ♀; Volcan Irazu, Cartago, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: *Oreopanax nubigenus, O. xalapense*.
References: (**hb**) Wood, S. L. 1982b: 491. (**ds**)

Wood, S. L. 1982b: 491. (**tx**) Wood, S. L. 1969b: 15–16, 1982b: 491.

***jucundus* Wood** 1977d: 519. Holotype ♀; Rancho Grande, Aragua, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Cecropia* sp. leaf petiole.
References: (**tx**) Wood, S. L. 1977d: 519.

***laevicorpus* Wood** 1988a: 33. Holotype, sex?; Bolivia (Cochabamba); MNHN, Paris, automatic.
Distribution: South America (Bolivia).
References: (**tx**) Wood, S. L. 1988a: 33.
laevis Eggers 1943a: 367 (*Hylocurosoma*). Holotype, sex?; Bolivia (Cochabamba); MNHN, Paris, preoccupied by Eggers 1928.
Notes: (1) Original spelling was *laeve*; when transferred to *Scolytodes*, due to a change in gender, it became a junior homonym.
References: (**tx**) Eggers 1943a: 367; Schedl 1952d: 346.

***laevigatulus* Wood** 1988a: 33. Holotype ♂; Argentinia, Misiones, Dept. Concept., Sta. Maria; Schedl Collection in NHMW, Wien, automatic.
Distribution: South America (Argentina).
References: (**tx**) Wood, S. L. 1988a: 33.
laevigatus Schedl 1962r: 98 (*Hexacolus*). Holotype ♀; Argentinia, Misiones, Dept. Cocept., Sta. Maria; Schedl Collection in NHMW, Wien, preoccupied by Ferrari 1867.
References: (**ds**) Gemminger & Harold 1872: 2696; Hagedorn 1910d: 77; Kleine 1914b: 342; Schedl 1972g: 42. (**tx**) Gemminger & Harold 1872: 2677; Hagedorn 1910a: 113; Hopkins 1914: 119, 129; Schedl 1962r: 98, 1979c: 135; Wood, S. L. 1988a: 33.

***laevigatus* Ferrari** 1867a: 77. Syntypes 2 ♂; Colombia; NHMW, Wien.
Distribution: South America (Colombia).
References: (**ds**) Blackwelder 1947: 784. (**tx**) Eggers 1934a: 81; Ferrari 1867a: 77.

***laevis* (Eggers)** 1928c: 88 (*Prionosceles*). Holotype, sex?; Ostbolivien; Eggers Collection, in NHMW, Wien.
Distribution: South America (Bolivia).
References: (**hb**) Wood, S. L. 1982b: 478. (**ds**) Blackwelder 1947: 787; Wood, S. L. 1982b: 478. (**tx**) Eggers 1928c: 88, 1943a: 362; Schedl 1952d: 346, 1979c: 135; Wood, S. L. 1982b: 478.

***lepidus* Wood** 1975a: 27. Holotype ♀; 33 km N Juchitlan, Jalisco, Mexico; Wood Collection.
Distribution: North America (Jalisco in Mexico).
Hosts: *Ficus* sp.
References: (**hb**) Wood, S. L. 1982b: 479. (**ds**) Wood, S. L. 1982b: 479. (**tx**) Wood, S. L. 1975a: 27, 1982b: 479.

***libidus* Wood** 1978b: 404. Holotype ♀; Rancho Grande, Pittier National Park, Aragua, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: Cucurbitaceae vine.
References: (**tx**) Wood, S. L. 1978b: 404.

***limbatus* (Eggers)** 1943a: 370 (*Hylocurosoma*). Holotype, sex?; Bolivia (Cochabamba); USNM, Washington.
Distribution: South America (Bolivia).
References: (**tx**) Anderson, W. H. & Anderson 1971: 17; Eggers 1943a: 370–371; Schedl 1952d: 346.

***longicollis* (Eggers)** 1951: 152 (*Hexacolus*). Holotype ♂; Guadeloupe; Eggers Collection, in NHMW, Wien.
Distribution: Antilles Islands (Guadeloupe).
References: (**ds**) Bright 1985c: 172. (**tx**) Bright 1985c: 172; Eggers 1951: 152; Schedl 1979c: 140.

***longipennis* Eggers** 1943a: 363. Holotype, sex?; Bolivia (Cochabamba); MNHN, Paris.
Distribution: South America (Bolivia).
References: (**tx**) Eggers 1943a: 363; Schedl 1979c: 141.

***major* (Eggers)** 1928c: 86 (*Prionosceles*). Holotype, sex?; Bolivia; USNM, Washington.
Distribution: South America (Bolivia).
References: (**ds**) Blackwelder 1947: 787. (**tx**) Anderson, W. H. & Anderson 1971: 19; Eggers 1928c: 86–87.

***majus* Wood** 1988a: 33. Holotype, sex?; Bolivia (Cochabamba); USNM, Washington, automatic.
Distribution: South America (Bolivia).
References: (**tx**) Wood, S. L. 1988a: 33.
major Eggers 1943a: 361. Holotype, sex?; Bolivia (Cochabamba); USNM, Washington, preoccupied by Eggers 1928.
References: (**tx**) Anderson, W. H. & Anderson 1971: 19; Eggers 1943a: 361; Wood, S. L. 1988a: 33.

***marginatus* Wood** 1969b: 21. Holotype ♀; Dominical Puntarenas, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica/ Chiapas in Mexico).
References: (**hb**) Wood, S. L. 1982b: 501. (**ds**) Wood, S. L. 1982b: 501. (**tx**) Wood, S. L. 1969b: 21, 1982b: 501.

***maurus* (Blandford)** 1897a: 178 (*Prionosceles*). Lectotype ♂; Pantaleon, Guatemala; BMNH, London, designated by Wood 1982b: 474.
Distribution: Antilles Islands (Dominica), North America (Costa Rica/ Guatemala/ Honduras/ Chiapas, Oaxaca, Veracruz in Mexico/ Panama), South America (Venezuela).
Hosts: *Cecropia* spp. leaf petioles.
References: (**hb**) Atkinson & Equihua 1985b: 232; Wood, S. L. 1982b: 474. (**ds**) Atkinson & Equihua 1985b: 232, 1986a: 420; Blackwelder 1947: 787; Bright 1972b: 1497, 1985c: 172; Estrada & Atkinson 1988: 205; Hagedorn 1910d: 76; Kleine 1914b: 370; Wood, S. L. 1982b: 474. (**tx**) Blandford 1897a: 178; Bright 1985c: 172; Hagedorn

1910a: 117; Muskus 1984: 73; Wood, S. L. 1975a: 22; 1982b: 474.

ellipticus Eggers 1934a: 80 (*Hexacolus*). Holotype ♂; Turrialba, Costa Rica; Strohmeyer Collection. Synonymy: Wood 1975a: 22.
References: (**ds**) Blackwelder 1947: 786. (**tx**) Eggers 1934a: 80; Wood, S. L. 1975a: 22.

***medialis* Wood** 1988a: 33. Holotype ♂; Bolivia (Cochabamba); MNHN, Paris, automatic.
Distribution: South America (Bolivia).
References: (**tx**) Wood, S. L. 1988a: 33.

medius Eggers 1943a: 359. Holotype ♂; Bolivia (Cochabamba); MNHN, Paris, preoccupied by Eggers 1928.
References: (**tx**) Anderson, W. H. & Anderson 1971: 19; Eggers 1943a: 359–360; Wood, S. L. 1988a: 33.

***medius* (Eggers)** 1928c: 89 (*Prionosceles*). Lectotype, sex?; Ostbolivien; USNM, Washington, designated by Anderson & Anderson 1971: 19.
Distribution: South America (Bolivia).
References: (**ds**) Blackwelder 1947: 787; Schedl 1970f: 581. (**tx**) Anderson, W. H. & Anderson 1971: 19; Eggers 1928c: 89; Schedl 1979c: 150–151.

***melanocephalus* (Blandford)** 1897a: 181 (*Hexacolus*). Lectotype ♀; Cerro Zunil, Guatemala; BMNH, London, designated by Wood 1982b: 482.
Distribution: North America (Guatemala).
References: (**ec**) Wichmann 1955a: 107. (**ds**) Blackwelder 1947: 786; Hagedorn 1910d: 77; Kleine 1914b: 370; Wichmann 1955a: 107. (**tx**) Blandford 1897a: 181; Eggers 1931b: 33, 1940a: 132; Hagedorn 1910a: 114; Schedl 1952d: 359, 1979c: 15; Wood, S. L. 1982b: 482.

***micidus* Wood** 1971: 17. Holotype ♀; 7 km N Totolapan, Oaxaca, Mexico; Wood Collection.
Distribution: North America (Guatemala/ Oaxaca in Mexico).
Hosts: *Ficus* sp.
References: (**hb**) Atkinson et al. 1986: 56; Burgos & Saucedo 1983: 81; Wood, S. L. 1982b: 506. (**ds**) Atkinson et al. 1986: 56; Burgos & Saucedo 1983: 81; Wood, S. L. 1982b: 506. (**tx**) Wood, S. L. 1971: 17, 1982b: 506.

***minor* (Eggers)** 1928c: 89 (*Prionosceles*). Lectotype, sex?; Ostbolivien; USNM, Washington, designated by Anderson & Anderson 1971: 20.
Distribution: South America (Bolivia).
References: (**ds**) Blackwelder 1947: 787. (**tx**) Anderson, W. H. & Anderson 1971: 20; Eggers 1928c: 89; Schedl 1979c: 155.

***minutissimus* Schedl** 1952d: 355. Holotype ♀; Hamburgfarm on Rio Reventazon, Limon, Costa Rica; Schedl Collection in NHMW, Wien.
Distribution: North America (Costa Rica), South America (Brazil).
References: (**ds**) Schedl 1967d: 2; Wood, S. L. 1982b: 478. (**tx**) Schedl 1952d: 355, 1979c: 156–157; Wood, S. L. 1982b: 478.

minutissimus Schedl 1963d: 217 (*Hexacolinus*). Holotype ♂?; Brasilien: Santa Catarina, Nova Teutonia; Schedl Collection in NHMW, Wien, preoccupied by Schedl 1952. Synonymy: Wood 1984b: 228.
References: (**tx**) Schedl 1963d: 217, 1979c: 156; Wood, S. L. 1984b: 228.

***minutus* Wood** 1981: 122. Holotype ♂?; Brasilien, Nova Teutonia, 300–500 m, 27 degrees 11′ Br., 52 degrees 23′ L.; Schedl Collection in NHMW, Wien, automatic.
Distribution: South America (Brazil).
References: (**tx**) Wood, S. L. 1981: 122.

minutissimus Schedl 1978c: 297 (*Hexacolus*). Holotype ♂?; Brasilien, Nova Teutonia, 300–500 m, 27 degrees 11′ Br., 52 degrees 23′ L.; Schedl Collection in NHMW, Wien, preoccupied by Schedl 1952.
References: (**tx**) Schedl 1978c: 297.

***morulus* (Schedl)** 1952d: 356 (*Hexacolus*). Holotype ♂; Brasilien, Santa Catarina; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1952d: 356, 1979c: 160.

***multistriatus* (Wood)** 1961d: 97 (*Hexacolus*). Holotype ♀; 8 km W Villa Juarez, Puebla, Mexico; Wood Collection.
Distribution: North America (Puebla in Mexico).
References: (**hb**) Wood, S. L. 1982b: 503. (**ds**) Atkinson & Equihua 1986a: 420; Wood, S. L. 1982b: 503. (**tx**) Wood, S. L. 1961d: 97, 1967c: 128, 1982b: 503.

***naevius* Wood** 1981: 127. Holotype ♀; 40 km SE Socopo, Barinas, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Clusia* sp.
References: (**tx**) Wood, S. L. 1981: 127.

***nanellus* Wood** 1967c: 124. Holotype ♀; Barro Colorado Island, Canal Zone, Panama; Wood Collection.
Distribution: North America (Panama).
References: (**hb**) Wood, S. L. 1982b: 508. (**ds**) Wood, S. L. 1982b: 508. (**tx**) Wood, S. L. 1967c: 124, 1982b: 508.

***nardus* (Schedl)** 1976a: 62 (*Hexacolus*). Holotype ♂?; Brazil [probably Cayenne]; Schedl Collection in NHMW, Wien.
Distribution: South America (Cayenne?).
References: (**tx**) Schedl 1976a: 62.

***nitellus* (Schedl)** 1954b: 22 (*Hexacolus*). Syntypes ♀; Brasilien: Parana, Rondon, 500 m; Schedl Collection in NHMW, Wien, and Plaumann Collection.
Distribution: South America (Brazil).
Notes: (1) Schedl 1979c: 168 (citation of holotype invalid).

References: (**tx**) Schedl 1954b: 22, 1979c: 168.

***nitens* (Schedl)** 1954b: 23 (*Hexacolus*). Syntypes ♀; Brasilien: Parana, Rondon, 500 m; Schedl Collection in NHMW, Wien, and Plaumann Collection.
Distribution: South America (Brazil).
Notes: (1) Schedl 1979c: 168 (citation of holotype invalid).
References: (**tx**) Schedl 1954b: 23, 1979c: 162.

***nitidissimus* (Eggers)** 1940a: 135 (*Hexacolus*). Holotype ♀; Guadeloupe (Trois Rivieres); Eggers Collection, in NHMW, Wien.
Distribution: Antilles Islands (Guadeloupe).
References: (**ds**) Bright 1985c: 172. (**tx**) Bright 1985c: 172; Eggers 1940a: 135; Schedl 1979c: 169.

***nitidus* (Eggers)** 1928c: 88 (*Prionosceles*). Holotype sex?; Ostbolivien; Eggers Collection, in NHMW, Wien.
Distribution: South America (Bolivia).
References: (**ds**) Blackwelder 1947: 787; Schedl 1973d: 154. (**tx**) Eggers 1928c: 88; Schedl 1979c: 170.

***notatus* (Eggers)** 1940a: 133 (*Hexacolus*). Holotype, sex?; Guadeloupe (Trois Rivieres); Eggers Collection, not mentioned by Anderson & Anderson 1971 or Schedl 1979c, a female Eggers cotype in NHMW, Wien.
Distribution: Antilles Islands (Cuba/ Dominica/ Guadeloupe/ Puerto Rico), North America (Mexico?).
References: (**ds**) Bright 1981c: 156, 1985c: 172; Schedl 1976a: 50. (**tx**) Bright 1985c: 172; Eggers 1940a: 133; Schedl 1951m: 80, 1954b: 23, 1979c: 171.

pseudobicolor Eggers 1940a: 132 (*Hexacolus*). Holotype ♂; Guadeloupe (Trois Rivieres); USNM, Washington. Synonymy: Wood 1985: 269.
References: (**ds**) Bright 1981c: 156, 1985c: 172; Schedl 1972g: 39, 1976a: 50. (**tx**) Anderson, W. H. & Anderson 1971: 26; Bright 1985c: 172; Eggers 1940a: 132–133; Schedl 1952d: 357, 1954b: 23, 1979c: 200; Wood, S. L. 1985: 269.

subparallelus Eggers 1940a: 134 (*Hexacolus*). Holotype ♂; Guadeloupe (Trois Rivieres); Fleutiaux Collection. Synonymy: Wood 1985: 269.
References: (**ds**) Bright 1985c: 172; Schedl 1976a: 50. (**tx**) Bright 1985c: 172; Eggers 1940a: 134; Schedl 1979c: 243; Wood, S. L. 1985: 269.

pelicerinus Schedl 1952d: 358 (*Hexacolus*). Holotype, sex?; vermutlich Mexico; Schedl Collection in NHMW, Wien. Synonymy: Wood 1985: 269.
Notes: (3) It is doubtful that the holotype came from Mexico; a Caribbean island is a more likely site.
References: (**ds**) Wood, S. L. 1982b: 503. (**tx**) Schedl 1952d: 357–358, 1979c: 187; Wood, S. L. 1982b: 503, 1985: 269.

***obesus* Wood** 1975a: 26. Holotype ♀; Barro Colorado Island, Canal Zone, Panama; Wood Collection.
Distribution: North America (Panama).
References: (**ds**) Wood, S. L. 1982b: 498. (**tx**) Wood, S. L. 1975a: 26, 1982b: 498.

***oblongus* (Eggers)** 1940a: 134 (*Hexacolus*). Holotype ♂; Guadeloupe (Env. de Trois Rivieres); MNHN, Paris.
Distribution: Antilles Islands (Guadeloupe).
References: (**ds**) Bright 1985c: 172. (**tx**) Bright 1985c: 172; Eggers 1940a: 134; Schedl 1979c: 174.

***obscurus* (Wood)** 1961d: 100 (*Hexacolus*). Holotype ♀; 5 km SW Martinez de la Torre, Veracruz, Mexico; Wood Collection.
Distribution: North America (Veracruz in Mexico).
References: (**hb**) Wood, S. L. 1982b: 508. (**ds**) Wood, S. L. 1982b: 508. (**tx**) Wood, S. L. 1961d: 100, 1982b: 508.

***ochromae* Wood** 1969b: 19. Holotype ♀; Playon, San Jose, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: *Ochroma velutina*.
References: (**hb**) Wood, S. L. 1982b: 493. (**ds**) Wood, S. L. 1982b: 493. (**tx**) Wood, S. L. 1969b: 19, 1982b: 493.

***ommateus* Wood** 1971: 15. Holotype ♀; 8 km S Colonia (near Buenaventura), Valle de Cauca, Colombia; Wood Collection.
Distribution: South America (Colombia).
Hosts: *Clusia* sp.
References: (**tx**) McNamara 1977: 199; Wood, S. L. 1971: 15.

***opacicollis* (Eggers)** 1928c: 90 (*Prionosceles*). Holotype, sex?; Ostbolivien; Eggers Collection, in NHMW, Wien.
Distribution: South America (Bolivia).
References: (**ds**) Blackwelder 1947: 787. (**tx**) Eggers 1928c: 90; Schedl 1979c: 179.

***opacus* Wood** 1977d: 520. Holotype ♀; Merida, Merida, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
References: (**tx**) Wood, S. L. 1977d: 520.

***opimus* Wood** 1977d: 520. Holotype ♀; La Carbonera Experimental Forest, 50 km NW Merida, Merida, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: Liana.
References: (**tx**) Wood, S. L. 1977d: 520.

***ovalis* (Eggers)** 1940a: 132 (*Hexacolus*). Holotype, sex?; Guadeloupe; Fleutiaux Collection.
Distribution: Antilles Islands (Guadeloupe).
References: (**ds**) Bright 1985c: 172. (**tx**) Bright 1985c: 172; Eggers 1940a: 132.

***pannuceus* Wood** 1971: 16. Holotype ♀; La Ceiba, Atlantida, Honduras; Wood Collection.
Distribution: North America (Honduras).

References: (**ds**) Wood, S. L. 1982b: 503. (**tx**) Wood, S. L. 1971: 16–17, 1982b: 503.

***parallelus* (Schedl)** 1962r: 99 (*Hexacolus*). Holotype ♂?; Venezuela; Schedl Collection in NHMW, Wien.
Distribution: South America (Venezuela).
Notes: (3) Schedl labeled the holotype as a female; it appears to be a male.
References: (**tx**) Schedl 1962r: 99, 1979c: 185.

***parvulus* Wood** 1969b: 14. Holotype ♀; Pandora, Limon, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica/ Chiapas, Veracruz in Mexico).
Hosts: *Cecropia* sp. leaf petiole.
References: (**hb**) Atkinson & Equihua 1985b: 233; Wood, S. L. 1982b: 492. (**ds**) Atkinson & Equihua 1985b: 233, 1986a: 420; Wood, S. L. 1982b: 492. (**tx**) Wood, S. L. 1969b: 14–15; 1982b: 492

***parvus* (Eggers)** 1943a: 371 (*Hylocurosoma*). Holotype, sex?; Bolivia (Cochabamba); USNM, Washington.
Distribution: South America (Bolivia).
References: (**ds**) Schedl 1979c: 186. (**tx**) Anderson, W. H. & Anderson 1971: 24; Eggers 1943a: 371; Schedl 1952d: 346, 1979c: 186.

***pelicipennis* (Schedl)** 1952d: 356 (*Hexacolus*). Holotype ♂; Costa Rica, Jimenez, Halbinsel Osa; Schedl Collection in NHMW, Wien.
Distribution: North America (Costa Rica).
References: (**ds**) Wood, S. L. 1982b: 502. (**tx**) Schedl 1952d: 356, 1979c: 187; Wood, S. L. 1982b: 502.

***perditus* Wood** 1967c: 123. Holotype ♀; Fort Clayton, Canal Zone, Panama; Wood Collection.
Distribution: North America (Panama).
Hosts: *Cecropia* sp. branch terminal.
References: (**hb**) Wood, S. L. 1982b: 480. (**ds**) Wood, S. L. 1982b: 480. (**tx**) Wood, S. L. 1967c: 123, 1982b: 480.

***permagnus* (Eggers)** 1943c: 364 (*Prionosceles*). Holotype, sex?; Bolivia (Cochabamba); Eggers Collection, in NHMW, Wien.
Distribution: South America (Bolivia).
References: (**tx**) Eggers 1943c: 364; Schedl 1979c: 189.

***perplexus* Schedl** 1972g: 56. Holotype ♀; Brasilien, Corcovado, Guanabara; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1972g: 56, 1979c: 190.

***perpusillus* Wood** 1978b: 404. Holotype ♀; Rancho Grande, Pittier National Park, Aragua, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
References: (**tx**) Wood, S. L. 1978b: 404.

***phoebeae* Wood** 1969b: 16. Holotype ♀; Tapanti, Cartago, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: *Phoebea mexicana*.
References: (**hb**) Bright 1964b: 16; Wood, S. L. 1982b: 477. (**ds**) Wood, S. L. 1982b: 477. (**tx**) Wood, S. L. 1969b: 16, 1982b: 477.

***piceus* (Blandford)** 1897a: 183 (*Hexacolus*). Lectotype ♂; Volcan de Chiriqui, Chiriqui, Panama; BMNH, London, designated by Wood 1982b: 497.
Distribution: North America (Costa Rica/ Panama).
Hosts: *Cecropia peltata, Phoebea mexicana*.
References: (**hb**) Wood, S. L. 1982b: 497. (**ds**) Blackwelder 1947: 786; Hagedorn 1910d: 77; Kleine 1914b: 370; Wood, S. L. 1982b: 497. (**tx**) Blandford 1897a: 183; Hagedorn 1910a: 114; Schedl 1936i: 104, 1937g: 66, 1954b: 21; Wood, S. L. 1982b: 497.

***pilifer* Wood** 1982a: 230. Holotype ♀; Uxpanapa, Veracruz, Mexico; Wood Collection.
Distribution: North America (Veracruz in Mexico).
References: (**ds**) Atkinson & Equihua 1986a: 420. (**tx**) Wood, S. L. 1982a: 230.

***pilifrons* (Schedl)** 1962r: 100 (*Hexacolus*). Holotype ♂; Venezuela, Maracay, Rancho Grande; Frey Museum, Tutzing (now in NHMBS, Basel).
Distribution: South America (Venezuela).
References: (**tx**) Schedl 1962r: 100, 1979c: 194.

***plumeriae* Wood** 1969b: 17. Holotype ♀; Playa del Coco, Guanacaste, Costa Rica; Wood Collection.
Figures: Atkinson et al. 1986: 63.
Distribution: North America (Costa Rica/ Guatemala).
Hosts: *Plumeria rubra*.
References: (**ec**) Equihua & Atkinson 1986: 627. (**hb**) Atkinson & Equihua 1985b: 232; Atkinson et al. 1986: 56; Equihua & Atkinson 1986: 627; Wood, S. L. 1982b: 476. (**ds**) Atkinson & Equihua 1985b: 232; Atkinson et al. 1986: 56; Equihua & Atkinson 1986: 627; Wood, S. L. 1982b: 476. (**tx**) Atkinson et al. 1986: 63; Wood, S. L. 1969b: 17, 1982b: 476.

***plumericolens* Wood** 1983a: 658. Holotype ♀; Estacion de Biologia, Chamela, Jalisco, Mexico; Wood Collection.
Distribution: North America (Jalisco in Mexico).
Hosts: *Plumeria rubra*.
References: (**ec**) Equihua & Atkinson 1986: 627. (**hb**) Equihua & Atkinson 1986: 627. (**ds**) Equihua & Atkinson 1986: 627. (**tx**) Wood, S. L. 1983a: 658.

***praeceps* Wood** 1977d: 521. Holotype ♀; Piedras Blancas, 10 km E Medellin, Antioquia, Colombia; Wood Collection.
Distribution: South America (Colombia).
Hosts: *Clusia* sp.
References: (**tx**) Wood, S. L. 1977d: 521.

***proximus* Wood** 1967c: 127. Holotype ♀; El Hato del Volcan, Chiriqui, Panama; Wood Collection.
Distribution: North America (Panama).
Hosts: *Clusia* sp.
References: (**hb**) Wood, S. L. 1982b: 505. (**ds**) Wood, S. L. 1982b: 505. (**tx**) Wood, S. L. 1967c: 127, 1982b: 505.

***pseudoacuminatus* (Schedl)** 1935m: 51 (*Hexacolus*). Syntypes, sex?; Saude bei Sao Paulo, Brasilien; Strohmeyer Collection, Eberswald, and Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**ds**) Blackwelder 1947: 784. (**tx**) Schedl 1935f: 274, 1935m: 51, 1952d: 346, 1962r: 100, 1979c: 200.

***pseudopiceus* Wood** 1969b: 18. Holotype ♀; San Isidro del General, San Jose, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: *Ficus* sp.
References: (**hb**) Wood, S. L. 1982b: 485. (**ds**) Wood, S. L. 1982b: 485. (**tx**) Wood, S. L. 1969b: 18–19, 1982b: 485.

***pubescens* Wood** 1969b: 21. Holotype ♀; San Ignacio de Acosta, San Jose, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
References: (**hb**) Wood, S. L. 1982b: 504. (**ds**) Wood, S. L. 1982b: 504. (**tx**) Wood, S. L. 1967b: 21, 1969b: 21–22, 1982b: 504.

***puer* (Schedl)** 1952d: 359 (*Hexacolus*). Holotype ♂?; Paraguay; Schedl Collection in NHMW, Wien.
Distribution: South America (Paraguay).
References: (**tx**) Schedl 1952d: 359, 1979c: 203.

***pumilus* Wood** 1969b: 23. Holotype ♀; Volcan Poas, Heredia, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: *Drimys granadensis, Miconia globuliflora, Sapium thelocarpum.*
References: (**hb**) Wood, S. L. 1982b: 507. (**ds**) Wood, S. L. 1982b: 507. (**tx**) Wood, S. L. 1967c: 124, 1969b: 23, 1982b: 507.

***punctatus* (Eggers)** 1943a: 368 (*Hylocurosoma*). Holotype, sex?; Bolivia (Cochabamba); MNHN, Paris.
Distribution: South America (Bolivia).
References: (**tx**) Eggers 1934a: 79, 1943a: 368; Schedl 1952d: 346, 1979c: 204.

***punctiferus* Wood** 1976a: 348. Holotype ♂; Volcan Irazu, Cartago, Costa Rica; Wood Collection, automatic.
Distribution: North America (Costa Rica).
Hosts: *Oreopanax nubigenus.*
References: (**hb**) Wood, S. L. 1982b: 486. (**ds**) Wood, S. L. 1982b: 486. (**tx**) Wood, S. L. 1976a: 348, 1982b: 486.
punctifer Wood 1971: 15. Holotype ♂; Volcan Irazu, Cartago, Costa Rica; Wood Collection, preoccupied by Wood 1969.
References: (**tx**) Wood, S. L. 1971: 15–16, 1976a: 348.

***pusillimus* Wood** 1981: 127. Holotype ♀; 27 km NE Montoya, Santander, Colombia; Wood Collection.
Distribution: South America (Colombia).
References: (**tx**) Wood, S. L. 1981: 127.

***pusillus* (Eggers)** 1943a: 367 (*Hylocurosoma*). Holotype ♂?; Bolivia (Cochabamba); USNM, Washington.
Distribution: South America (Bolivia).
References: (**tx**) Anderson, W. H. & Anderson 1971: 27; Eggers 1943a: 367; Schedl 1952d: 346.

***radiatus* Wood** 1977b: 218. Holotype ♀; La Georgiana, 79 km SE San Jose, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: *Quercus* sp.
References: (**ds**) Wood, S. L. 1982b: 489. (**tx**) Wood, S. L. 1977b: 218, 1982b: 489.

***reticulatus* (Wood)** 1961d: 98 (*Hexacolus*). Holotype ♀; 19 km SE Matamoros, Puebla, Mexico; SMUK, Lawrence.
Distribution: North America (Michoacan, Morelos, Puebla in Mexico).
Hosts: *Ficus* spp.
References: (**hb**) Atkinson & Equihua 1985b: 233; Burgos & Saucedo 1983: 80; Wood, S. L. 1982b: 500. (**ds**) Atkinson & Equihua 1985b: 233; Atkinson et al. 1986: 56; Burgos & Saucedo 1983: 80; Wood, S. L. 1982b: 500. (**tx**) Wood, S. L. 1961d: 98, 1982b: 500.

***retifer* Wood** 1983a: 658. Holotype ♀; Texeal, Mpiotepoztlan, Morelos, Mexico; Wood Collection.
Distribution: North America (Morelos in Mexico).
Hosts: *Ceiba* sp.
References: (**ds**) Atkinson et al. 1986: 56. (**tx**) Wood, S. L. 1983a: 658.

***rugicollis* (Schedl)** 1940c: 205 (*Hexacolus*). Lectotype ♀; Hamburgfarm on Rio Reventazon, Limon, Costa Rica; Schedl Collection in NHMW, Wien, designated by Wood 1974d: 287.
Distribution: North America (Costa Rica).
Hosts: *Ficus* sp.
Notes: (1) Schedl 1979c: 216 (citation of holotype invalid).
References: (**hb**) Wood, S. L. 1982b: 502. (**ds**) Wood, S. L. 1982b: 502. (**tx**) Schedl 1940c: 205, 1979c: 215–216; Wood, S. L. 1974d: 287, 1982b: 502.
plicatus Wood 1969b: 21. Holotype ♀; 25 km SE Guapiles, Limon, Costa Rica; Wood Collection. Synonymy: Wood 1974d: 287.
References: (**tx**) Wood, S. L. 1969b: 21, 1974d: 287.

***rugulosus* Eggers** 1943a: 362. Holotype, sex?; Bolivia (Cochabamba); USNM, Washington.
Distribution: South America (Bolivia).
References: (**tx**) Anderson, W. H. & Anderson 1971: 28; Eggers 1943a: 362–363.

***schwarzi* (Hopkins)** 1902a: 36 (*Erineophilus*). Holotype ♂; Coconut Grove, Dade Co., Florida [USA]; USNM, Washington.
Distribution: Antilles Islands (Andros in Bahamas Islands), North America (Jalisco, Veracruz in Mexico/ S Florida in USA).
Hosts: *Ficus* spp.
References: (**cn**) Doane et al. 1936. (**hb**) Atkinson & Equihua 1985b: 233; Chamberlin 1939: 239; Doane et al. 1936; Wood, S. L. 1982b: 496. (**ds**) Atkinson & Equihua 1985b: 233, 1986a: 420; Atkinson et al. 1991: 157; Blatchley & Leng 1916: 585; Chamberlin 1939: 239; Hagedorn 1910d: 82; Hamilton 1895b: 318; Kleine 1913b: 149, 1914b: 384, 1934a: 168; Swaine 1909: 108; Wood, S. L. 1957c: 396, 1982b: 496. (**tx**) Blatchley & Leng 1916: 585; Chamberlin 1939: 239; Hagedorn 1910a: 135; Hopkins 1902a: 36, 1903a, 1914: 121; Leng 1920: 337; Lucas 1920: 273; Swaine 1909: 108; Wood, S. L. 1957c: 396, 1961d: 97, 1967c: 125, 1982b: 496. (**ms**) Lucas 1920: 273.

***semipunctatus* Wood** 1978b: 405. Holotype ♀; Merida, Merida, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
References: (**tx**) Wood, S. L. 1978b: 405.

***serenus* Wood** 1977d: 521. Holotype ♀; La Mucuy, 20 km W Merida, Merida, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: Martino (? *Meriana* sp.).
References: (**tx**) Wood, S. L. 1977d: 521.

***setosus* (Blandford)** 1897e: 181 (*Hexacolus*). Holotype ♀?; Cerro Zunil, Guatemala; BMNH, London.
Distribution: North America (Guatemala).
References: (**ds**) Blackwelder 1947: 786; Hagedorn 1910d: 77; Kleine 1914b: 370; Wood, S. L. 1982b: 486. (**tx**) Blandford 1897e: 181; Eggers 1933b: 18; Hagedorn 1910a: 114; Wood, S. L. 1982b: 486.

***similis* (Eggers)** 1928c: 87 (*Prionosceles*). Lectotype, sex?; Argentinien; USNM, Washington, designated by Anderson & Anderson 1971: 30.
Distribution: South America (Argentina/ Bolivia).
References: (**ds**) Blackwelder 1947: 787. (**tx**) Anderson, W. H. & Anderson 1971: 30; Eggers 1928c: 87; Schedl 1979c: 230.

***spadix* (Blackman)** 1943c: 384 (*Prionosceles*). Holotype ♂; intercepted at New York in log from Guatemala; USNM, Washington.
Distribution: North America (Guatemala).
Hosts: *Swietenia* sp. (hybrid).
References: (**ds**) Blackwelder 1947: 787; Wood, S. L. 1982b: 494. (**tx**) Blackman 1943c: 384; Wood, S. L. 1982b: 494.

***striatulus* Wood** 1979b: 136. Holotype, sex?; Guadeloupe (Trois Rivieres); MNHN, Paris, automatic.
Distribution: Antilles Islands (Guadeloupe).
References: (**ds**) Bright 1985c: 172. (**tx**) Bright 1985c: 172; Wood, S. L. 1979b: 136.

striatus Eggers 1940a: 139 (*Hylocurosoma*). Holotype, sex?; Guadeloupe (Trois Rivieres); MNHN, Paris, preoccupied by Eggers 1934.
References: (**tx**) Anderson, W. H. & Anderson 1971: 32; Eggers 1940a: 139; Schedl 1952d: 346, 1979c: 238; Wood, S. L. 1979b: 136.

***striatus* (Eggers)** 1934a: 79 (*Hexacolus*). Holotype ♂; Turrialba, Costa Rica; USNM, Washington.
Distribution: North America (Costa Rica).
References: (**ds**) Blackwelder 1947: 786; Wood, S. L. 1982b: 485. (**tx**) Anderson, W. H. & Anderson 1971: 31; Eggers 1934a: 78–80; Schedl 1935f: 274, 1952d: 346, 358; Wood, S. L. 1979b: 136, 1982b: 485.

***subcribrosus* (Eggers)** 1933b: 17 (*Hexacolus*). Holotype, sex?; Venezuela (Colonia Tovar); MNHN, Paris.
Distribution: South America (Venezuela).
References: (**ds**) Blackwelder 1947: 786. (**tx**) Eggers 1933b: 17.

***suturalis* Wood** 1977d: 521. Holotype ♂; El Laurel Expermental Farm, 12 km SW Caracas, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Cecropia* sp. leaf petiole.
References: (**tx**) Wood, S. L. 1977d: 521.

***swieteniae* (Blackman)** 1943c: 381 (*Hexacolus*). Holotype ♀; intercepted at New York in logs from Costa Rica; USNM, Washington.
Distribution: North America (Costa Rica).
Hosts: *Swietenia* sp., *Cedrela* sp.
References: (**ds**) Blackwelder 1947: 786; Wood, S. L. 1982b: 494. (**tx**) Blackman 1943c: 381–382; Wood, S. L. 1969b: 19, 1982b: 494.

***tardus* Wood** 1981: 127. Holotype ♀; Piedras Blancas, 10 km E Medellin, Antioquia, Colombia; Wood Collection.
Distribution: South America (Colombia).
Hosts: *Clusia* sp.
References: (**tx**) Wood, S. L. 1981: 127.

***tenuis* (Wood)** 1961d: 99 (*Hexacolus*). Holotype ♀; 19 km SE Matamoros, Puebla, Mexico; SMUK, Lawrence.
Distribution: North America (Guatemala/ Honduras/ Jalisco, Morelos, Puebla in Mexico).
Hosts: *Ficus* spp.
References: (**ec**) Equihua & Atkinson 1986: 627. (**hb**) Atkinson et al. 1986: 56; Burgos & Saucedo 1983: 80; Equihua & Atkinson 1986: 627; Wood, S. L. 1982b: 505. (**ds**) Atkinson & Equihua 1985b:

233; Atkinson et al. 1986: 56; Burgos & Saucedo 1983: 80; Equihua & Atkinson 1986: 627; Wood, S. L. 1982b: 505. (**tx**) Wood, S. L. 1961d: 99, 1967c: 127, 1982b: 505.

***tolimanus* (Schedl)** 1962r: 102 (*Prionosceles*). Holotype, sex?; Tolima; Schedl Collection in NHMW, Wien.
Distribution: South America (Colombia).
References: (**tx**) Schedl 1962r: 102, 1979c: 253.

***trispinosus* Eggers** 1934a: 80. Holotype ♀; Amatan; USNM, Washington.
Distribution: South America (Brazil).
References: (**ds**) Blackwelder 1947: 784; Ferrer 1942; Wood, S. L. 1982b: 509. (**tx**) Anderson, W. H. & Anderson 1971: 34; Eggers 1934a: 80–81; Schedl 1935m: 51, 1940a: 336; Wood, S. L. 1982b: 509.
elongatus Schedl 1935f: 273. Holotype ♀?; Brazil; Schedl Collection in NHMW, Wien. Synonymy: Wood 1979b: 136.
References: (**ds**) Blackwelder 1947: 784. (**tx**) Schedl 1935f: 273; 1967a: 126, 1979c: 90; Wood, S. L. 1979b: 136.

***unipunctatus* (Blandford)** 1897a: 182 (*Hexacolus*). Lectotype ♀; Cubilguitz, Alta Verapaz, Guatemala; BMNH, London, designated by Wood 1982b: 483.
Distribution: North America (Guatemala).
References: (**ds**) Blackwelder 1947: 786; Hagedorn 1910d: 77; Kleine 1914b: 370; Nunberg 1964a: 234; Wood, S. L. 1982b: 483. (**tx**) Blandford 1897a: 182; Eggers 1934a: 79; Hagedorn 1910a: 114; Nunberg 1964: 234; Schedl 1962r: 100, 1979c: 260; Wood, S. L. 1982b: 483.

***varius* Wood** 1977d: 522. Holotype ♀; La Mucuy, 20 km W Merida, Merida, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
References: (**tx**) Wood, S. L. 1977d: 522.

***venustulus* Wood** 1967c: 124. Holotype ♂; Cerro Punta, Chiriqui, Panama; Wood Collection.
Distribution: North America (Panama).
Hosts: *Oreopanax* cf. *xalapense*.
References: (**hb**) Wood, S. L. 1982b: 487. (**ds**) Wood, S. L. 1982b: 487. (**tx**) Wood, S. L. 1967c: 124–125, 1982b: 487.

***venustus* Wood** 1969b: 18. Holotype ♀; Rodeo, Esquintla, Guatemala; Wood Collection.
Distribution: North America (Costa Rica/ Guatemala).
Hosts: *Ficus* sp., *Plumeria rubra*.
References: (**hb**) Wood, S. L. 1982b: 484. (**ds**) Wood, S. L. 1982b: 484. (**tx**) Wood, S. L. 1967c: 124, 1969b: 18, 1982b: 484.

***vesculus* Wood** 1981: 128. Holotype ♂; Piedras Blancas, 10 km E Medellin, Antioquia, Colombia; Wood Collection.
Distribution: South America (Colombia).
Hosts: *Croton guianensis*.
References: (**tx**) Wood, S. L. 1981: 128.

***vestitus* (Eggers)** 1932a: 233 (*Problechilus*). Holotype, sex?; Bolivien (Cochabamba); USNM, Washington.
Distribution: South America (Bolivia).
References: (**ds**) Blackwelder 1947: 786. (**tx**) Anderson, W. H. & Anderson 1971: 35; Eggers 1932a: 233; Schedl 1979c: 266.

***vicinus* (Eggers)** 1928c: 87 (*Prionosceles*). Holotype, sex?; Brasil (Petropolis, Staat Rio de Janeiro); SMTD, Dresden.
Distribution: South America (Brazil).
References: (**ds**) Blackwelder 1947: 787. (**tx**) Eggers 1928c: 87.

***volcanus* Wood** 1969b: 14. Holotype ♀; Volcan Poas, Heredia, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: Liana.
References: (**hb**) Wood, S. L. 1982b: 491. (**ds**) Wood, S. L. 1982b: 491. (**tx**) Wood, S. L. 1969b: 14, 1982b: 491.

Tribe Scolytoplatypodini Blandford

Scolytoplatypini
References: Blandford 1893d: 425; Hagedorn 1908: 382.

Scolytoplatypodidae
References: Brues & Melander 1932: 446.

Scolytoplatypodinae
References: Hopkins 1915c: 225; Lucas 1920: 57; Reitter 1913a: 13.

Scolytoplatypodini
References: Handlirsch 1925: 692; Wood, S. L. 1978a: 113, 1982b: 63, 1986a: 61.

Scolytoplatypi
References: Lucas 1920: 57.

Scolytoplatpidae
References: Blackman 1943d: 121; Hagedorn 1908: 382.

Taeniocerini
References: Blandford 1893d: 428.

Spongocerinae
References: Hagedorn 1909: 162, 1910a: 24, 159, 1910d: 117.

Genus *Scolytoplatypus* Schaufuss

SCOLYTOPLATYPUS SCHAUFUSS 1890: 31. Type-species: *Scolytoplatypus permirus* Schaufuss, monobasic.

Spongocerus Blandford 1893d: 431. Type-species: *Scolytoplatypus tycon* Blandford, subsequent designation by Hopkins 1914: 129. Synonymy: Wood 1983a: 649.
References: (**tx**) Blandford 1893d: 431; Hagedorn 1904d: 124, 1905b: 11, 1910a: 159, 161, 1910d: 117, 1913: 257; Hopkins 1914: 130, 134; Schedl 1962k: 578; Wood, S. L. 1983a: 649.

Taeniocerus Blandford 1893d: 431, 437. Type-species: *Scolytoplatypus mikado* Blandford, subsequent designation by Hopkins 1914: 130, preoccupied by Kaup 1871. Synonymy: Wood 1983a: 649.
References: (**tx**) Blandford 1893d: 437; Hagedorn 1904c: 412, 1904d: 126, 1905: 63–64, 1910a: 161, 1910d: 117, 1913b: 257; Hopkins 1914: 130, 134; Sampson 1921: 36; Schaufuss 1905: 11; Schedl 1962k: 578; Wood, S. L. 1983a: 649.

Strophionocerus Sampson 1921: 36. Type-species: *Scolytoplatypus mikado* Blandford, automatic. Synonymy: Wood 1983a: 649.
References: (**tx**) Sampson 1921: 36; Wood, S. L. 1983a: 649.

Keys: Browne 1971b: 113, Schedl 1975b: 219, Nobuchi 1980b: 46.

References: (**ay**) Berger & Kholodkovskii 1916: 1–7. (**cn**) Hargreaves 1925: 21–28. (**hb**) Beeson 1941: 364–368, 372, 383; Browne 1936: 1, 1961c: 189–190; Gardner 1934: 4–5; Roepke 1911: 10–11; Schedl 1958d: 195; Wood, S. L. 1986a: 61. (**ds**) Browne 1958: 164–182; Hagedorn 1910d: 117; Schedl 1934f: 1647, 1966b: 81; Wood, S. L. 1986a: 61. (**tx**) Blackman 1943d: 121; Blandford 1893d: 425–442, 1894d: 126, 141, 1895a: 84; Browne 1971b: 111–129; Choo 1983: 35–37; Hagedorn 1904c: 404–413, 1904d: 124, 126, 1905b: 63, 1907b: 112, 1909b: 163, 1910a: 159–161, 1913: 253, 257; Hopkins 1914: 129–130, 134, 1915c: 198–199, 227; Kurenzov 1941: 13, 70, 73; Menzel 1923b: 3–4; Murayama 1936: 137, 1953: 24, 1954: 205; Niisima 1908: 313–317, 1909: 167; Nobuchi 1980b: 46; Nunberg 1951: 261–265, 1960: 287–308; Sampson 1921: 36; Schaufuss 1891: 31, 1905: 11–12; Schedl 1931d: 118–122, 1957e: 865–883, 1962k: 577, 1975b: 199–267, 1977b: 225; Spessivtsev 1931: 83; Stark 1952: 441–442; Stebbing 1914: 604; Van Hall 1922: 1–42; Wichmann 1954: 539; Wood, S. L. 1957a: 342–343, 1986a: 61; Zazawa 1957: 287–308.

***africanus* Eggers** 1920: 122. Holotype ♀; Sesse am Victoria Nyanza, Africa; MCG, Genova.
Figures: Schedl 1975b: 234 (male).
Distribution: Africa (Ivory Coast/ Tanzania/ Uganda/ Zaire).
Hosts: *Albizzia zygia, Maesopsis eminii, Pseudospondias microcarpa.*
Notes: (3) Eggers 1932d: 294 (described male). Schedl 1975b: 233–234 (redescribed).
References: (**cn**) Anonymous 1970c: 13. (**ds**) Anonymous 1970c: 13; Browne 1971b: 116; Schedl 1962j: 580, 1964f: 618, 1967e: 220, 1971e: 4, 1975b: 233. (**tx**) Browne 1971b: 116; Eggers 1920: 122, 1927a: 199, 1932d: 294, 1936c: 37, 39; Schedl 1939g: 170, 1948c: 615–665, 1962h: 72, 1962j: 580–581, 1964f: 618, 1967e: 220, 1975b: 233–234.

***armatus* Eggers** 1924: 109. Holotype ♂; Zwischen Dibatwa und Kilungwe (Congostaat); Eggers Collection, in NHMW, Wien.
Figures: Schedl 1962j: 581, 1975b: 232 (male).
Distribution: Africa (Kenya/ Tanzania/ Zaire).
Hosts: *Albizzia* spp., *Allophyllus kivuensis, Combretum paniculatum.*
Notes: (3) Schedl 1952i: 19 (described female), 1975b: 231–233 (redescribed).
References: (**ds**) Browne 1971b: 127; Mayne & Donis 1962: 310; Nunberg 1961: 332; Schedl 1962j: 581, 1962k: 1105, 1975b: 231. (**tx**) Browne 1971b: 113, 127; Eggers 1924: 109; Nunberg 1961: 332; Schedl 1952i: 19, 1962j: 581, 1975b: 231–232, 1979c: 26.

***congonus* Schedl** 1952i: 21. Holotype ♀; Congo Belge: Ituri, Mulungu; MRCB, Tervuren.
Figures: Schedl 1962j: 583, 1975b: 228 (female).
Distribution: Africa (Cameroon/ Kenya/ Nigeria/ Ruanda/ Tanzania/ Uganda/ Zaire).
Hosts: More than 18 host genera (Schedl 1962j: 582, 1975b: 227).

Notes: (3) Schedl 1957d: 116 (described male), 1975b: 227 (redescribed).
References: (**hb**) Schedl 1962j: 582. (**ds**) Browne 1971b: 114; Gardner 1957a: 32; Mayne & Donis 1962: 310; Schedl 1962j: 582, 1975b: 227. (**tx**) Browne 1971b: 114–116; Roberts 1969: 128; Schedl 1952i: 21, 1957d: 116, 1962j: 582–584, 1975b: 227–228, 1979c: 63.

***daimio* Blandford** 1893d: 433. Syntypes ♂ ♀; Japan, Nikko; BMNH, London.
Figures: Nakane et al. 1963: 384, Nobuchi 1980b: 45, Schedl 1975b: 252 (male), Tsai & Li 1959: 104.
Distribution: Asia (Japan/ E USSR).
Hosts: *Acer* sp., *Alnus* spp., *Cornus* sp., *Fagus* sp., *Fraxinus* sp., *Pyrus* sp., *Quercus* sp., *Abies* sp.
Notes: (3) Schedl 1975b: 251 (redescribed).
References: (**cn**) Anonymous 1980g; Inouye & Yamaguchi 1955a: 235; Katsumata 1940: 194–198. (**ec**) Inouye & Yamaguchi 1955a: 235. (**hb**) Krivolutskaya 1973: 143; Niisima 1907: 315–316; Stark 1952: 442. (**ds**) Anonymous 1980g; Blandford 1894c; Gebien 1907: 223; Hagedorn 1910d: 117; Kleine 1913b: 171, 1914b: 262, 1934a: 179; Krivolutskaya 1965a: 242, 1973: 143; Murayama 1953c: 145, 162, 1954b: 185; Nakane et al. 1963: 384; Nobuchi 1980b: 51; Schedl 1971f: 148, 1975b: 251; Stark 1952: 442. (**tx**) Blandford 1893d: 433, 1894d: 580; Hagedorn 1904c: 410, 413, 1904d: 126–127, 1905b: 64, 1910a: 161; Murayama 1936: 149, 1953: 163, 1954b: 185–186, 1961: 26, 28; Nakane et al. 1963: 384, pl. 192; Niisima 1909: 167–168, 1910a: 5; Nobuchi 1980b: 45, 51; Schaufuss 1905: 11; Schedl 1934f: 1646, 1952c: 61, 1954a: 138, 1975b: 251–252; Stark 1952: 442–443; Strohmeyer 1908: 1; Tsai & Li 1959: 104; Wichmann 1954: 539.
muticus Hagedorn 1904c: 124. Syntypes 1 ♂, 2 ♀; Nippon (Japan); ♂ MNHN, Paris, 2 ♀ lost with Hamburg Museum. Synonymy: Schedl 1952c: 61.
References: (**ds**) Hagedorn 1910d: 117; Kleine 1913b: 172, 1914b: 262. (**tx**) Hagedorn 1904c: 124, 1910a: 161; Schaufuss 1905: 5; Schedl 1934f: 1647, 1952c: 61.

***darjeelingi* Stebbing** 1914: 607. Syntypes ♂ ♀; Darjeeling, East Himalaya; FRI, Dehra Dun.
Distribution: Asia (Assam, Bengal, Uttar Pradesh in India).
Hosts: *Acer caesium, Alnus nepalensis, A. theaefolia, Eucalyptus globulus, Litsaea* spp., *Prunus nepalensis, Quercus lamellosa, Symplocos theaefolia.*
References: (**cn**) Mathur & Singh 1961a: 83; Roonwal 1954: 59; Stebbing 1914: 607. (**ec**) Beeson 1922c; Stebbing 1914: 607. (**hb**) Beeson 1922c; Stebbing 1914: 607. (**ds**) Beeson 1922c, 1961: 295; Kleine 1934a: 179; Mathur & Singh 1961a: 83; Nobuchi 1967: 24; Roonwal 1954: 59. (**tx**) Eggers 1939c: 114; Schedl 1975b: 200, 217; Stebbing 1914: 607.

***eichelbaumi* Hagedorn** 1905b: 64. Syntypes 2 ♂; Amani, Deutsch-Ost-Afrika; Hamburg Museum, lost.
Figures: Browne 1971b: 124, Schedl 1962j: 585, 1975b: 230 (male).
Distribution: Africa (Ghana/ Kenya/ Nigeria/ Tanzania/ Zaire).
Hosts: *Acacia mollissima, Albizzia* spp., *Ekebergia* sp., *Trichilia lanata.*
Notes: (3) Schedl 1979c: 87 (invalid designation of neotype), 1957e: 878 (described var. *grandidentatus,* no status), 1957e: 879 (described var. *aervidentatus,* no status), 1975b: 230–231 (redescribed).
References: (**ds**) Browne 1961e: 13, 1963a: 233, 1971b: 124; Gardner 1957a: 32; Gebien 1907: 222; Hagedorn 1910d: 117; Kleine 1913b: 171, 1914b: 323; Schedl 1962h: 64, 1962j: 585, 1965e: 356, 1975b: 230. (**tx**) Browne 1971b: 124; Eggers 1923a: 179; Hagedorn 1905b: 64, 1908: 382, 1910a: 160, 1913b: 382; Powell, W. 1980: 29; Roberts 1969: 128; Schedl 1957d: 116, 1957e: 878–879, 1957h: 72, 1962j: 578–585, 1962k: 1105, 1973g: 210, 1975b: 230–231, 1979c: 87.
acuminatus Schedl 1957d: 116. Holotype ♀; Congo Belge, Kivu, route Tshibinda-Bunyakiri, Km 66, 1120 m; MRCB, Tervuren. Synonymy: Browne 1971b: 124.
References: (**tx**) Browne 1961e: 13, 1971b: 124; Roberts 1969: 128; Schedl 1957d: 116; 1962h: 72, 1962j: 578, 1979c: 11.
octospinosus Nunberg 1960: 295. Holotype ♂; Tanganyika Terr.: Ngorogoro, region bocagere, 2300 m; MRCB, Tervuren. Synonymy: Schedl 1962k: 1105.
References: (**tx**) Nunberg 1960a: 295–296; Schedl 1962h: 62, 1962k: 1105.

***eutomoides* Blandford** 1896b: 196. Holotype ♂; Celebes; IRSNB, Brussels, cotype deposited in Eggers Collection, in NHMW, Wien.
Figures: Schedl 1975b: 245 (male).
Distribution: Asia (Bangladesh/ Burma/ Assam, Bengal in India), Indonesia (Celebes, Java).
Hosts: *Cryptocarya wrightiana, Ilex dipyrena, Swietenia mahagoni.*
Notes: (3) Schedl 1975b: 244 [treatment of this name includes a mixture of at least two biological species (SLW)].
References: (**hb**) Kalshoven 1959a: 225, 1959c: 169. (**ds**) Gebien 1907: 223; Hagedorn 1910d: 117; Kalshoven 1924: 8, 1959c: 169; Kleine 1913b: 171, 1914b: 295, 1928: 309; Menzel 1923b: 3–4; Nobuchi 1979a: 407; Sampson 1921: 37; Schedl 1965g: 24, 1974c: 262, 1975b: 244. (**tx**) Blandford 1896b: 195–196, 1898a: 426; Browne 1955: 361, 1968b: 644; Eggers 1920: 122, 1923: 164; Hagedorn 1904a, 1904c: 407, 413, 1910a:

161; Kalshoven 1959a: 225; Sampson 1921: 36–37; Schaufuss 1905: 11; Schedl 1950f: 46–49, 1954c: 155, 1975b: 244–245.

brahma Blandford 1898: 425. Holotype ♀; India, Chittagong Hills; BMNH, London. Synonymy: Browne 1955: 361.
References: (**cn**) Hagedorn 1913a; Mathur & Singh 1960b: 63, 1961a: 80; Stebbing 1914: 607. (**ec**) Stebbing 1914: 607. (**hb**) Hagedorn 1913a; Stebbing 1914: 607. (**ds**) Beeson 1961: 295; Hagedorn 1910d: 117, 1913a; Kleine 1913b: 171, 1934a: 179; Mathur & Singh 1960b: 63, 1961a: 80. (**tx**) Blandford 1898: 425; Browne 1955: 361; Eggers 1920; Hagedorn 1904c, 1904d, 1910a: 161; Schedl 1952k: 159, 1954a: 144; Stebbing 1914: 607.

hamatus Hagedorn 1904b: 260. Syntypes 4 ♂ ♀; Ost-Java (Montes Tengger); Hamburg Museum, lost. Synonymy: Schedl 1952k: 159.
References: (**cn**) Kleine 1932a: 309; Menzel 1923b: 3–4. (**hb**) Kleine 1932a: 309. (**ds**) Hagedorn 1910d: 117; Kalshoven 1924b: 357; Kleine 1913b: 171, 1914b: 288, 1932a: 309, 1934a: 179. (**tx**) Browne 1955: 361; Eggers 1920: 122, 1923a: 164–165, 1935b: 242; Hagedorn 1904b: 260, 1904c, 1910a: 161; Schaufuss 1905: 5; Schedl 1931d: 118, 1942d: 1, 1951i: 46, 1952k: 159, 1954a: 144.

bombycinus Browne 1955: 361. Holotype ♂; Malay Peninsula: Kelantan, Jeram; BMNH, London. Synonymy: Schedl 1975b: 217.
References: (**hb**) Browne 1961c: 190. (**ds**) Beaver & Browne 1975: 295; Browne 1955: 361, 1961c: 190–191, 1962c: 201, 1968b: 644. (**tx**) Browne 1955: 361; Schedl 1975b: 217.

***fasciatus* Hagedorn** 1904c: 405. Holotype ♂; Caffraria; Hamburg Museum, lost.
Distribution: Africa (Ethiopia/ Kenya/ Tanzania/ South Africa).
Hosts: *Bersama* sp., *Buxus* sp., *Cedrus* sp., *Grevillea* sp., *Gymnosporia* sp., *Maba* sp., *Maytenus* sp., *Prunus domesticus*.
Notes: (3) Schedl 1957c: 325 (described female), 1975b: 224 (redescribed).
References: (**cn**) Anonymous 1970c: 13. (**ds**) Anonymous 1970c: 13; Browne 1971b: 122, 1975b: 394; Gardner 1957: 32; Gebien 1907: 222; Hagedorn 1910d: 117; Kleine 1913b: 171, 1914b: 317; Nunberg 1964a: 235; Schedl 1962b: 61, 1962j: 587, 1965g: 20, 1970h: 180, 1975b: 224, 1975k: 278, 1982: 279. (**tx**) Browne 1971b: 122; Hagedorn 1904c: 405, 1905b: 63, 1910a: 160, 1910d: 117, 1913b: 257; Nunberg 1964: 235; Schaufuss 1905: 11; Schedl 1953d: 70–72, 1955d: 272, 1955i: 213, 1957b: 151, 1957c: 325, 1960b: 164, 1962h: 64, 1962j: 587, 1962k: 1106, 1965g: 21, 1970h: 180, 1975b: 202–219, 224.

strohmeyeri Eggers 1920: 123. Holotype ♂; Kikuyu, British-Ostafrika; MNB, Berlin. Synonymy: Browne 1971b: 122.
References: (**ds**) Gardner 1957a: 32; Schedl 1962j: 593. (**tx**) Browne 1971b: 122, Eggers 1920: 123; Powell, W. 1980: 29; Schedl 1955i: 212, 1962j: 593.

maculatus Nunberg 1960: 299. Holotype ♂; Tanganyika; MRCB, Tervuren. Synonymy: Schedl 1962h: 64.
References: (**tx**) Nunberg 1960a: 296, 298–299; Schedl 1962h: 64, 1962k: 1106.

***glaber* Eggers** 1935b: 240. Lectotype ♀; Pahang, F. M. S. Camerons Highland, 4800 ft.; Eggers Collection, in NHMW, Wien, designated by Schedl 1979c: 105.
Distribution: Asia (Malaya).
Notes: (1) Schedl 1979c: 105 [designated the Eggers male as lectotype; however, it was not a syntype and was not eligible for such designation (SLW)]. (3) Schedl 1975b: 242–243 (redescribed).
References: (**ds**) Browne 1961c: 192, 1965a: 188–189; Schedl 1965g: 24, 1975b: 242. (**tx**) Eggers 1935b: 240; Schedl 1975b: 242, 1979c: 105.

***hirsutus* Blackman** 1943d: 124. Holotype ♀; Buitenzorg, Java; USNM, Washington.
Distribution: Indonesia (Java).
Hosts: *Erythrina lithosperma*.
Notes: (3) Browne 1955: 361 (treated as = *eutomoides*), Schedl 1975b (this name not listed).
References: (**hb**) Kalshoven 1959a: 225. (**tx**) Blackman 1943d: 124; Browne 1955: 361; Kalshoven 1959a: 225; Schedl 1952k: 159.

***hova* Schaufuss** 1905: 12. Holotype ♀; Madagascar; Hamburg Museum, lost.
Figures: Schedl 1975b: 240 (male, female).
Distribution: Madagascar.
Hosts: *Cinchona ledgeriana, C. succirubra*.
Notes: (3) Schedl 1975b: 239–241 (redescribed).
References: (**hb**) Paulian 1950: 8. (**ds**) Breniere & Dubois 1965: 20, 125; Hagedorn 1910d: 117; Kleine 1913b: 171, 1914b: 326; Schedl 1975b: 239, 1977b: 227. (**tx**) Eggers 1920: 122; Hagedorn 1905: 63, 1910a: 160, 1910d: 117, 1913b: 257; Schaufuss 1905: 7, 12; Schedl 1953d: 72, 1975b: 239, 1977b: 227–228.

***javanus* Eggers** 1923a: 164. Lectotype ♀; Java; USNM, Washington, designated by Anderson & Anderson 1971: 16.
Distribution: Asia (Malaya), Indonesia (Java, Sumatra), Philippine Islands (Luzon).
Notes: (3) Schedl 1975b: 216 (treated as = *eutomoides*).
References: (**cn**) Kalshoven 1959c: 170; Yunus & Hua 1980: 229. (**ec**) Browne 1958b. (**hb**) Browne 1958b, 1961c: 191; Kalshoven 1959c: 170. (**ds**) Beaver & Browne 1975: 295; Browne 1961c: 191–192; Schedl 1966b: 82, 1975a: 453; Yunus & Hua 1980: 229. (**tx**) Anderson, W. H. & Anderson 1971: 16; Browne 1955: 361; Eggers 1920, 1923a:

164–165, 1935b: 244; Schedl 1920: 122, 1931d: 118, 122, 1939e: 329, 1942a: 170, 1942c: 192, 1942d: 1, 1951i: 46, 1952k: 159, 1954a: 144, 1975b: 216, 1979c: 129.

piceus Blackman 1943d: 122. Holotype ♂; Mt. Banahao, Luzon, Philippine Islands; USNM, Washington. Synonymy: Schedl 1952k: 159.

References: (**tx**) Blackman 1943d: 122; Schedl 1952k: 159.

***kivuensis* Schedl** 1957d: 117. Holotype ♂; Congo Belge: Hembe Bitale; MRCB, Tervuren.

Figures: Schedl 1975b: 228 (female).

Distribution: Africa (Kenya/ Uganda/ Zaire).

Hosts: *Acacia* spp., *Alchornea* sp., *Carapa* sp., *Cassipourea* sp., *Celtis* sp., *Ekelbergia* sp., *Ficus* sp., *Gymnosporia* sp., *Maesa* sp., *Maesobothrya* sp., *Panda* sp., *Podocarpus* sp., *Syzygium* sp.

References: (**ec**) Schedl 1958d: 192. (**hb**) Schedl 1962j: 588. (**ds**) Gardner 1957a: 32; Mayne & Donis 1962: 310; Schedl 1962h: 72, 1962j: 588, 1963a: 29, 32, 1971e: 4, 1975b: 228. (**tx**) Browne 1971b: 114; Roberts 1969: 128; Schedl 1955i: 213, 216, 1957d: 117, 1958d: 192, 1962h: 72, 1962k: 588–592, 1975b: 228, 1979c: 133.

***mikado* Blandford** 1893d: 437. Syntypes ♂ ♀; Japan, Nikko, Oyama, Sapporo, and Nyayama; BMNH, London.

Figures: Blandford 1893d:figs. 4–5, Nakane et al. 1963:pl. 192, Nobuchi 1980b: 45, Schedl 1975b: 249 (male).

Distribution: Asia (Fujian, Sichuan in China/ India/ Japan/ Korea/ Malaysia/ Sakhalin Island in USSR/ Taiwan).

Hosts: *Acanthopanax, Acer* spp., *Alnus* sp., *Bambusa* sp., *Benzoin* sp., *Carapa* sp., *Cinnamomum camphora, Cornus* sp., *Fagus* sp., *Macaranga* sp., *Machilus* spp., *Phyllostachys* spp., *Prunus* sp., *Quercus* spp.

Notes: (3) Schedl 1975b: 248–249 (redescribed).

References: (**cn**) Anonymous 1980g; Kenny et al. 1989; Shiraki 1952; Uchida et al. 1958: 181; Ueno 1960. (**ec**) Banno, Mikata, & Kodama 1963: 445; Inouye et al. 1955: 86, 87; Kenny et al. 1989. (**hb**) Inouye et al. 1955: 86–87; Niisima 1907: 314. (**ds**) Anonymous 1980g; Beeson 1922c: 499–500, 1941: 384; Blandford 1894c; Cho 1957, 1963; Choo 1983: 35; Choo & Woo 1985: 163; Choo, Woo, & Nobuchi 1988a: 133; Hagedorn 1910d: 117; Kleine 1913b: 171, 1914b: 262, 270, 1934a: 179; Ko 1969: 282; Ku 1964; Mengel 1923; Murayama 1929b: 2, 1930b: 23, 1931a: 48, 1934d: 511, 1936a: 137, 1936b: 117, 1937b: 375, 1949c: 104, 1950b: 1298, 1953c: 145, 162, 1954b: 186, 1955: 100; Nakane et al. 1963: 384; Nobuchi 1967: 24, 1980b: 47; Nohira & Ogawa 1986; Schedl 1971f: 148, 1975b: 248, 1975c: 384; Shiraki 1952. (**tx**) Blandford 1893d: 437, 1894c: 580, 1894d: 126–127, 1896b: 195–196, 1898a: 425–426; Choo 1983: 35; Eggers 1939c: 114; Hagedorn 1904b: 261, 1904c: 410–413, 1904d: 122, 126, 1905b: 64, 1910a: 161; Hopkins 1914: 130; Krivolutskaya 1958: 170; Murayama 1928a: 288, 1929b: 1–13, 1930b: 23, 27, 31, 1931a: 48–49, 1934c: 300, 1934d: 505–512, 1936a: 137, 1937b: 375, 1950b: 1298, 1954b: 186, 1955: 100–101; Nakane et al. 1963: 384, pl. 192; Niisima 1907: 313–316, 1909: 167–169, 1910a: 15, 1913a: 5; Nobuchi 1967: 24–25, 1980b: 45, 47; Schaufuss 1905: 11; Schedl 1931d: 122, 1934f: 1647, 1975b: 248–249; Strohmeyer 1908: 2–4, 1909: 249, 1914: 32; Takahashi 1989: 403; Wylie & Yule 1977.

sinensis Tsai & Huang 1965: 123. Holotype ♂; Fukien: Nanzing; IZAS, Beijing. Synonymy: Wood 1989: 175.

References: (**tx**) Tsai & Huang 1965: 123; Wood, S. L. 1989: 175.

***minimus* Hagedorn** 1904d: 125. Holotype ♀; Darjiling; MNHN, Paris.

Distribution: Asia (Assam, Bengal, Uttar Pradesh in India).

Hosts: *Alnus nitida, Cornus macrophylla, Machilus odorissima, Prunus armeniaca, Salix tetrasperma, Wendlandia tinctoria.*

Notes: (3) Schedl 1975b: 246 (described male), 1975b: 247 (redescribed).

References: (**cn**) Kleine 1932a: 309; Mathur & Singh 1960a: 25, 1961b: 90; Roonwal 1954: 60. (**ec**) Beeson 1922c: 499. (**hb**) Beaver & Browne 1975: 295; Beeson 1922c: 499; Kleine 1932a: 309. (**ds**) Beaver & Browne 1975: 295; Beeson 1922c: 499, 1941: 384, 1961: 295; Hagedorn 1910d: 117; Kleine 1913b: 171, 1914b: 277, 1928: 309, 1932a: 309, 1934a: 179; Mathur & Singh 1960a: 25, 1961b: 90; Roonwal 1954: 60. (**tx**) Beeson 1922c: 499; Eggers 1935b: 243–244; Hagedorn 1904c: 413, 1904d: 125, 1910a: 161; Schaufuss 1905: 11, 15; Schedl 1975b: 247.

***mutabilis* Schedl** 1965c: 78. Holotype ♂; Madagascar, Perinet; Schedl Collection in NHMW, Wien.

Figures: Schedl 1975b: 238 (male).

Distribution: Madagascar.

Notes: (3) Schedl 1975b: 239 (redescribed).

References: (**ds**) Schedl 1975b: 239. (**tx**) Schedl 1965c: 78, 1975b: 238–239, 1977b: 230, 1979c: 162.

***nanus* Schedl** 1931d: 118. Holotype ♀; Java, Mount Salak, 800 m; Schedl Collection in NHMW, Wien.

Distribution: Indonesia (Java).

Notes: (3) Schedl 1975b: 255 (redescribed).

References: (**hb**) Kalshoven 1959e: 171. (**ds**) Kalshoven 1959e: 171; Schedl 1975b: 255. (**tx**) Eggers 1935b: 243; Schedl 1931d: 118, 1975b: 255, 1979c: 163.

***neglectus* Schedl** 1975b: 235. Holotype ♂; Belgisch Congo, Route Tshibinda-Bunyakiri, Km 77, 1000 m; Schedl Collection in NHMW, Wien.

Figures: Schedl 1975b: 235 (female).

Distribution: Africa (Zaire).

Hosts: *Panda oleosa.*

References: (**tx**) Schedl 1975b: 235, 1979c: 164.

***nitidicollis* Eggers** 1935b: 241. Holotype ♀; Java, Batoerraden; Eggers Collection, in NHMW, Wien.
Distribution: Indonesia (Java).
Notes: (3) Schedl 1975b: 251 (redescribed).
References: (**ds**) Schedl 1975b: 251. (**tx**) Eggers 1935b: 240–241, 1939b: 10; Schedl 1975b: 251, 1979c: 168.

***nitidus* Eggers** 1923a: 166. Syntypes 2 ♀; Mt. Singalang auf Sumatra; MCG, Genova and MNB, Berlin.
Figures: Schedl 1975b: 265 (male).
Distribution: Indonesia (Java, Sumatra).
Hosts: *Acacia decurrens, Cinchona* sp., *Eupatorium* sp., *Ficus fistulosa, Podocarpus imbricata*.
Notes: (3) Eggers 1927b: 405 (described male). Schedl 1975b: 264 (redescribed).
References: (**hb**) Kalshoven 1959c: 171; Wichmann & Sorauer 1954: 539. (**ds**) Kalshoven 1959c: 171; Kleine 1934a: 179; Schedl 1975b: 264. (**tx**) Eggers 1923a: 166, 1927b: 390, 405; Schedl 1942d: 1, 1951i: 46, 48, 1954a: 144, 1975b: 264–265, 1979c: 170.

***obtectus* Schedl** 1975b: 226. Holotype ♂; Sudafrika, Willowvale, Cape Province, Alexandria; NICP, Pretoria.
Distribution: Africa (South Africa).
Hosts: *Buxus macrowanii*.
References: (**tx**) Schedl 1975b: 226–227, 1979c: 175.

***occidentalis* Browne** 1971b: 118. Holotype ♂; Ghana: Bobiri, Kumasi; MRCB, Tervuren.
Distribution: Africa (Ghana/ Nigeria/ Sierra Leone).
Hosts: *Bussea* sp., *Macaranga* sp., *Parkia* sp., *Sterculia* sp., *Trichilia* sp.
Notes: (3) Schedl 1975b: 236–237 (redescribed).
References: (**ds**) Schedl 1975b: 236. (**tx**) Browne 1971b: 118–119; Schedl 1972q: 260, 1975b: 236.

***opacicollis* Eggers** 1936c: 38. Holotype ♂; S. Rhodesia: Salisbury; BMNH, London.
Figures: Schedl 1975b: 226 (male).
Distribution: Africa (Zambia).
Notes: (3) Schedl 1975b: 225 (redescribed male).
References: (**ds**) Browne 1971b: 123; Schedl 1975b: 225. (**tx**) Browne 1971b: 113, 123; Eggers 1936c: 38; Schedl 1962j: 592–593, 1975b: 225–226.

***papuanus* Eggers** 1923a: 165. Holotype ♂; Deutsch Neu Guinea, Etappenberg am Kaiserin Augustafluss; MNB, Berlin.
Distribution: New Guinea, Philippine Islands.
Notes: (3) Schedl 1975b: 216 (treated as = *eutomoides*).
References: (**ds**) Schedl 1966b: 82. (**tx**) Eggers 1923a: 165; Schedl 1931d: 118, 1942c: 192, 1951i: 52, 1952k: 159, 1954a: 138, 1979c: 184.
luzonicus Eggers 1935b: 244. Holotype ♀; Philippinen (Luzon, Benguet, Baguio); USNM, Washington. Synonymy: Wood 1989: 175.
Notes: (3) Schedl 1975b: 217 (treated as = *eutomoides*).
References: (**tx**) Anderson, W. H. & Anderson 1971: 8; Eggers 1935b: 244; Schedl 1952b: 365, 1979c: 143; Wood, S. L. 1989: 175.
macgregori Blackman 1943d: 121. Holotype ♂; Port Galera, Mindoro, Philippine Islands; USNM, Washington. Synonymy: Schedl 1952k: 159.
References: (**tx**) Blackman 1943d: 121; Schedl 1952k: 159.
benguetus Blackman 1943d: 123. Holotype ♀; Benguet, Luzon, Philippine Islands; USNM, Washington. Synonymy: Schedl 1975b: 217.
References: (**ds**) Schedl 1966b: 81. (**tx**) Blackman 1943d: 123; Schedl 1975b: 217.
setosus Schedl 1942c: 192. Holotype ♂; Neu Guinea; Schedl Collection in NHMW, Wien. Synonymy: Schedl 1975b: 217.
References: (**tx**) Schedl 1942c: 192, 1975b: 217, 1979c: 226.

***parvus* Sampson** 1921: 36. Holotype ♂; Mt. Matang, Sarawak; BMNH, London.
Distribution: Asia (Burma/ Bengal in India/ Malaysia), Indonesia (Sarawak in Borneo).
Hosts: *Dipterocarpus* sp., *Dryobalanops* sp., *Engelhardtia spicata, Eugenia* sp., *Grewia* sp., *Heritiera* sp., *Mandani* sp., *Shorea* sp.
Notes: (3) Browne 1949b: 909 (described male). Schedl 1975b: 259 (original description quoted).
References: (**cn**) Yunus & Hua 1980: 229. (**ec**) Browne 1958b: 176. (**hb**) Browne 1958b: 176, 1961c: 191–193. (**ds**) Browne 1961c: 193; Sampson 1921: 36; Schedl 1975b: 259; Yunus & Hua 1980: 229. (**tx**) Browne 1949b: 909; Eggers 1935b: 243; Sampson 1921: 36; Schedl 1975b: 259.
ruficauda Eggers 1939b: 9. Holotype ♀; Kambaiti, Nordost-Birma, 7000 ft.; NHR, Stockholm. Synonymy: Wood 1992b: 84.
Notes: (3) Schedl 1975b: 265 (redescribed).
References: (**ds**) Schedl 1975b: 265. (**tx**) Eggers 1939b: 9; Schedl 1975b: 265; Wood, S. L. 1992b: 84.

***paucegranulatus* Eggers** 1935b: 242. Lectotype ♀; Java (Batoerraden); USNM, Washington, designated by Anderson & Anderson 1971: 24.
Figures: Schedl 1975b: 244 (male).
Distribution: Indonesia (Java).
Notes: (3) Schedl 1975b: 243–244 (redescribed).
References: (**ds**) Schedl 1975b: 243. (**tx**) Anderson, W. H. & Anderson 1971: 24; Eggers 1935b: 243; Schedl 1975b: 243–244, 1979c: 186.

***permirus* Schaufuss** 1891: 31. Holotype ♂; Madagascar; Hamburg Museum, lost.
Figures: Schedl 1975b: 242 (male, female).
Distribution: Madagascar.

Hosts: *Cinchona* sp.
Notes: (3) Blandford 1893d: 435 (redescribed). Schedl 1975b: 241 (redescribed), 1979c: 190 (invalid designation of neotype).
References: (**ec**) Schedl 1977b: 231. (**hb**) Schedl 1977b: 231. (**ds**) Alluaud 1900: 441; Anonymous 1892: 165–166; Fairmaire 1892b; Hagedorn 1910d: 117; Kleine 1913b: 171, 1914b: 326; Schedl 1975b: 241, 1977b: 231. (**tx**) Blandford 1893d: 435–437; Eggers 1920: 122; Fairmaire 1892b; Hagedorn 1904c: 406, 413, 1904d, 1905b: 63, 1910a: 160, 1913b: 257; Hopkins 1914: 129, 134; Lucas 1920: 572; Schaufuss 1891: 31; Schedl 1953d: 67, 71–72, 1965c: 78, 1975b: 241–242, 1977b: 231, 1979c: 190. (**ms**) Lucas 1920: 572.

madagascariensis Schedl 1953d: 71. Holotype ♂; Madagascar, Mt. d'Ambre; IRSM, Madagascar. Synonymy: Schedl 1975b: 216.
References: (**tx**) Schedl 1953d: 71, 1965c: 78, 1975b: 216, 1977b: 229–230, 1979c: 145.

***pubescens* Hagedorn** 1904d: 123. Syntypes, sex?; Dardjiling; Hamburg Museum, lost.
Figures: Nobuchi 1967:pl. 2, Schedl 1975b: 261 (male, male frons).
Distribution: Asia (Assam, Bengal, Uttar Pradesh in India).
Hosts: *Acer campbelli, Alnus nepalensis, Amoora wallichii, Engelhardtia spicata, Evodia fraxinifolia, Litsaea elongata, Prunus nepalensis, Quercus incana.*
Notes: (3) Schedl 1975b: 260 (redescribed).
References: (**ay**) Gardner 1934b. (**cn**) Anonymous 1979p; Mathur & Singh 1961a: 84; Roonwal 1954: 29. (**ec**) Beeson 1922c: 499. (**hb**) Beeson 1922c: 499. (**ds**) Anonymous 1979p; Beaver & Browne 1975: 295; Beeson 1922c: 499, 1961: 295; Hagedorn 1910d: 117; Kleine 1913b: 172, 1914b: 277, 1934a: 179; Mathur & Singh 1961a: 84; Murayama 1934d: 512; Nobuchi 1967: 24; Roonwal 1954: 29; Schedl 1975b: 260. (**tx**) Eggers 1925: 160, 1939c: 114; Gardner 1934b; Hagedorn 1904c, 1904d: 123, 1905b: 64, 1910a: 161; Nobuchi 1967:pl. 2; Schaufuss 1905: 5; Schedl 1975b: 260–261.

***pusillus* Eggers** 1935b: 243. Holotype ♂; Philippinen (Luzon: Baguio); USNM, Washington.
Figures: Schedl 1975b: 254 (male).
Distribution: Philippine Islands.
Hosts: *Dryobalanops oblongifolia, Ficus* sp., *Mallotus ricinoides, Pinus insularis.*
Notes: (3) Schedl 1975b: 253–255 (redescribed).
References: (**ds**) Browne 1961c: 192; Nobuchi 1979a: 407; Schedl 1966b: 82, 1971c: 362, 1975b: 253. (**tx**) Anderson, W. H. & Anderson 1971: 27; Eggers 1935b: 243; Schedl 1952b: 365, 1975b: 253–254, 1979c: 206.

***raja* Blandford** 1893d: 440. Syntypes 1 ♂, 1 ♀; India (Himalaya); ♂ in BMNH, London, ♀ in IRSNB, Brussels.
Figures: Nobuchi 1967:pl. 2.
Distribution: Asia ("China"/ Assam, Bengal, Himachal Pradesh, Kashmir, Uttar Pradesh in India/ Nepal).
Hosts: *Abies webbiana, Acacia decurrens, Cedrus deodara, Cornus macrophylla, Engelhardtia spicata, Litsaea elongata, Macaranga denticulata, Machilus odoratissima, Picea morinda, Prunus nepalensis, Quercus* spp., *Symplocos theaefolia.*
References: (**cn**) Mathur & Singh 1960a: 25, 1961a: 84; Roonwal 1954: 29; Yunus & Hua 1980: 229. (**ec**) Beeson 1922c: 499–500. (**hb**) Beeson 1922c: 499–500; Bhalla & Sharma 1963: 86. (**ds**) Beaver & Browne 1975: 295; Beeson 1922c: 499–500, 1961: 296; Bhalla & Sharma 1963: 86; Blandford 1896b; Browne 1961c: 192; Hagedorn 1910d: 117; Kleine 1913b: 171, 1914b: 277, 1934a: 179; Mathur & Singh 1960a: 25, 1961a: 84; Nobuchi 1967: 24; Roonwal 1954: 29; Schedl 1936d: 5, 329, 1962b: 185, 1965a: 340, 1969c: 55, 1973b: 211, 1974c: 262; Yin & Huang 1981: 565; Yunus & Hua 1980: 229. (**tx**) Blandford 1893d: 440; Eggers 1939c: 114; Hagedorn 1904c, 1904d, 1910a: 161; Nobuchi 1967:pl. 2; Schedl 1939e: 329; Strohmeyer 1908a: 161; Yin & Huang 1981: 565.

himalayensis Stebbing 1914: 604. Holotype ♂; labeled Chamba St., Punjab, published as North-West Himalaya; FRI, Dehra Dun. Synonymy: Beeson 1922c: 500.
References: (**cn**) Stebbing 1914: 604. (**ec**) Stebbing 1914: 604. (**hb**) Stebbing 1914: 604. (**tx**) Beeson 1922c: 500; Stebbing 1914: 604.

***shogun* Blandford** 1894d: 126. Syntypes ♂ ♀; Higo, Japan; IRSNB, Brussels.
Figures: Nobuchi 1980b: 45, 1975b: 257.
Distribution: Asia (Japan).
Hosts: *Acer* spp., *Fagus* sp., *Magnolia* sp., *Abies* sp.
References: (**cn**) Anonymous 1980g; Nakashima 1983; Wichmann 1954: 539. (**ec**) Banno, Mikata, & Kodama 1983: 445; Nakashima 1983, 1989; Nakashima, Goto, & Iizuka 1987. (**ds**) Anonymous 1980g; Blandford 1894c: 580; Hagedorn 1910d: 117; Kleine 1913b: 172, 1914b: 262, 1934a: 179; Murayama 1934c: 300, 1936a: 137–138, 1954b: 186; Nobuchi 1967: 13, 25, 1980b: 50; Schedl 1975b: 257. (**tx**) Blandford 1894d: 126; Hagedorn 1904c: 409–410, 413, 1904d: 122, 1910a: 161; Murayama 1934c: 300, 1936a: 137, 1954b: 186–187, 205, 1961: 104; Niisima 1907: 313, 1909: 167, 169; Nobuchi 1980b: 45, 50; Schaufuss 1905: 11; Schedl 1934f: 1647, 1975b: 257; Schedl, W. 1962: 376–378.

***siomio* Blandford** 1893d: 436. Syntypes ♂ ♀; Japan, Nikko, Sendai; BMNH, London.
Figures: Schedl 1975b: 258 (male).
Distribution: Asia (Bhutan/ Bengal, Kashmir,

Himachal Pradesh, Punjab, Uttar Pradesh in India/ Japan/ Nepal).

Hosts: *Abies pindrow*, *Acer caesium*, *Cedrus deodara*, *Hedera helix*, *Parrottia jacquemontiana*, *Picea morinda*, *Prunus padus*, *Pyrus lanata*, *Quercus* spp., *Taxus baccata*.

Notes: (3) Schedl 1975b: 216 (treated as =*daimio*).

References: (**ds**) Hagedorn 1910d: 117; Kleine 1913b: 172, 1914b: 262; Murayama 1949c: 104, 1954b: 187. (**tx**) Blandford 1893d: 436, 1894d; Hagedorn 1904c, 1904d, 1910a: 161; Murayama 1954b: 187; Schedl 1934f: 1647.

kunala Strohmeyer 1908a: 161 (reprint p. 1). Holotype ♀; Kashmir; IPKE, Eberswalde. Synonymy: Wood 1989: 175.

Notes: (3) Schedl 1975b: 262 (redescribed).

References: (**cn**) Bhasin, Roonwal, & Singh 1958: 102; Mathur & Singh 1960b: 36, 1961b: 8; Roonwal 1954: 17. (**ec**) Beeson 1922c: 499. (**hb**) Beeson 1922c: 499. (**ds**) Beeson 1922c: 499, 1941: 383–384, 1961: 295; Hagedorn 1910d: 117; Kleine 1913b: 171, 1914b: 271, 1934a: 179; Mathur & Singh 1960b: 36, 1961b: 8; Nobuchi 1967: 13, 24; Roonwal 1954: 9, 17, 29; Schedl 1973b: 211, 1975b: 262, 1975c: 384, 1975e: 452. (**tx**) Eggers 1939: 114; Hagedorn 1910a: 161; Schedl 1934f: 1647, 1975b: 262–263; Strohmeyer 1908a: 161 (reprint p. 1); Wood, S. L. 1989: 175.

***supercilliosus* Tsai & Huang** 1965: 124. Holotype ♂; Szechuan: Leibo; IZAS, Beijing.

Distribution: Asia (Sichuan in China).

Hosts: *Castanopsis fargesii*.

References: (**ds**) Yin & Huang 1981: 566. (**tx**) Tsai & Huang 1965: 124; Yin & Huang 1981: 566.

***truncatus* Browne** 1971b: 120. Holotype ♂; Nigeria, Kamatan Forest Reserve; MRCB, Tervuren.

Distribution: Africa (Nigeria).

Hosts: *Macaranga* sp.

Notes: (3) Schedl 1975b: 237–238 (redescribed).

References: (**ds**) Schedl 1975b: 237. (**tx**) Browne 1971b: 120, Schedl 1975b: 237.

***tycon* Blandford** 1893d: 432. Syntypes ♂ ♀; Japan, Nikko and Kiga; BMNH, London.

Figures: Blandford 1893d:figs. 1–2, Nakane et al. 1963:pl. 192, Nobuchi 1980b: 45.

Distribution: Asia (Japan/ Korea/ Manchuria [Heilongjiang?] in China/ E USSR).

Hosts: *Abies* sp., *Aesculus* sp., *Acer* spp., *Alnus* sp., *Bengoin* sp., *Carpinus* sp., *Fagus* spp., *Fraxinus* sp., *Juglans* sp., *Lindera* sp., *Machilus* sp., *Parabenzoin* sp., *Phellodendron* sp., *Picea* sp., *Pinus* sp., *Populus* sp., *Quercus* sp., *Zelkowa* sp.

Notes: (3) Schedl 1975b: 255–256 (redescribed).

References: (**cn**) Anonymous 1980g; Jehoko 1969: 282; Kurenzov 1935c: 187, 1957c: 78; Shiraki 1952; Uchida et al. 1958: 181. (**ec**) Banno, Mikata, & Kodama 1983: 445. (**hb**) Berger & Kholodkovskii 1916: 1–7; Krivolutskaya 1973: 142; Kurenzov 1934a: 57, 1935a: 37, 1948b: 113, 1957c: 24; Niisima 1907: 316; Stark 1952: 443. (**ds**) Anonymous 1980g; Blandford 1894c; Cho 1957, 1963; Choo 1983: 36; Choo & Woo 1985: 163; Hagedorn 1910d: 117; Kleine 1913b: 172, 1914b: 262, 1934a: 179; Ko 1969: 282; Krivolutskaya 1965a: 243, 1973: 142, 1983; Kurenzov 1934a: 51, 1935a: 37, 1935c: 187, 1936b: 350, 1951: 24, 78–80, 1965; Murayama 1928: 290, 1929b: 2, 1930b: 23, 1931a: 50, 1936a: 138, 1937b: 375, 1948: 6, 1950b: 1298, 1953c: 145, 163, 1954b: 187, 205, 1955: 100, 103, 1961a: 104, 1961b: 26, 28; Nakane et al. 1963: 384; Nobuchi 1967: 25, 1980b: 49; Schedl 1975b: 255; Shiraki 1952; Stark 1952: 443. (**tx**) Berger & Kholodkovskii 1916: 1–7; Blandford 1893d: 432, 1894c: 580, 1894d: 126–127; Choo 1983: 36; Hagedorn 1904c: 409, 413, 1904d: 122, 1910a: 161; Hopkins 1914: 129, 136; Kurenzov 1941a: 193–195, 1948b: 113; Murayama 1930b: 23, 27, 31, 1931a: 50, 1934c: 300, 1936a: 138, 1937b: 375, 1950b: 1298, 1954b: 187, 1955: 100–101, 103; Nakane et al. 1963: 384, pl. 192; Niisima 1907: 313–316, 1909: 167, 170, 1910a: 5; Nobuchi 1967: 12, 25, 1980b: 45, 49; Schaufuss 1905: 11, Schedl 1934f: 1647, 1941a: 42, 1975b: 255; Schedl, W. 1962: 376; Stark 1952: 442–443; Wichmann 1954: 539.

ussuriensis Berger & Kholodkovskii 1916: 4. Syntypes ♂ ♀; Vladivostok; not given. Synonymy: Schedl, W. 1962: 376.

References: (**ay**) Farris & Funk 1965: 531. (**ec**) Farris & Funk 1965: 531. (**hb**) Berger & Kholodkovskii 1916: 4. (**tx**) Berger & Kholodkovskii 1916: 4; Schedl 1934f: 1647; Schedl, W. 1962: 376.

***uter* Schedl** 1938d: 457. Syntypes ♂; Kenia Colony, Maktaw; BMNH, London, and Schedl Collection in NHMW, Wien.

Distribution: Africa (Kenya).

Notes: (3) Schedl 1975b: 223 (redescribed male).

References: (**ds**) Browne 1971b: 121; Schedl 1938d: 457, 1975b: 223. (**tx**) Browne 1971b: 121; Eggers 1923a: 219; Schedl 1938d: 457, 1962j: 593, 1975b: 223, 1979c: 263.

Tribe Micracini LeConte

Micracides
References: LeConte 1876: 346, 367; LeConte & Horn 1883: 516.

Micracidae
References: Eichhoff 1878b: 302.

Micracinae
References: Beal & Massey 1945: 96; Blackman 1919b; Hopkins 1915c: 224; Leng 1920: 339.

Micracini
References: Handlirsch 1925: 692; Wood, S. L. 1978a: 113, 1982b: 65, 1986a: 61.

Hylocuridae
References: Eichhoff 1878b: 298, 306.

Hylocurinae
References: Hagedorn 1909: 162, 1910a: 24, 110, 1910d: 76; Lucas 1920: 32.

Hylocuri
References: Blandford 1898b: 219; Lucas 1920: 32.

Genus *Lanurgus* Eggers

LANURGUS EGGERS 1920: 36. Type-species: *Lanurgus barbatus* Eggers, monobasic.

Landolphianus Schedl 1950h: 106. Type-species: *Landolphianus elongatus* Schedl, subsequent designation by Schedl 1962j: 38. Synonymy: Schedl 1962j: 38.
References: (**tx**) Schedl 1950h: 106, 1962j: 38.

Micraciops Schedl 1953d: 86. Type-species: *Micraciops catenatus* Schedl, subsequent designation by Schedl 1962j: 38. Synonymy: Schedl 1962j: 38.
References: (**tx**) Nunberg 1961: 613; Schedl 1953d: 86, 1962j: 38, 1977b: 122.

Pseudohylocurus Nunberg 1961: 613. Type-species: *Pseudohylocurus caplandicus* Nunberg = *Lanurgus podocarpi* Schedl, original designation. Synonymy: Schedl 1962j: 38.
References: (**tx**) Nunberg 1961: 613; Schedl 1962j: 38.

References: (**hb**) Schedl 1958d: 184, 1962h: 65; Wood, S. L. 1986a: 63. (**ds**) Wood, S. L. 1986a: 63. (**tx**) Eggers 1920: 36; Nunberg 1961: 613; Schedl 1948c: 665, 1957d: 1–162, 1958a: 557–560, 1959q: 709, 1962j: 38, 1962k: 1083, 1962n: 697, 1977b: 114; Wood, S. L. 1986a: 63.

***barbatus* Eggers** 1920: 37. Lectotype ♀; Serue (Ost-Betschuanaland), Sudafrika; Eggers Collection, in NHMW, Wien, designated by Schedl 1979c: 34.
Distribution: Africa (South Africa).
Hosts: *Ligustrum* sp.
References: (**cn**) Anonymous 1970c: 13. (**ds**) Anonymous 1970c: 13; Schedl 1962j: 38. (**tx**) Eggers 1920: 37; Schedl 1948c: 665–666, 1957b: 151, 1962k: 38, 1979c: 34.

***bicolor* Schedl** 1961j: 350. Holotype, sex?; Cape Prov., Tonti, S. Africa; NICP, Pretoria.
Distribution: Africa (Natal in South Africa).
Hosts: *Hymenocardia capensis*.
References: (**tx**) Schedl 1961j: 350, 1962j: 39, 1962k: 1084.

***capensis* Schedl** 1965h: 115. Holotype, sex?; Cape Province, Alexandria; TMP, Pretoria.
Distribution: Africa (South Africa).
Hosts: *Ochna arborea*.
References: (**tx**) Browne 1970: 559; Schedl 1965h: 115.

***catenatus* (Schedl)** 1953d: 86 (*Macraciops*). Lectotype ♀; Madagascar, Pays Androy; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 54.
Distribution: Madagascar.
References: (**ds**) Schedl 1977b: 122. (**tx**) Schedl 1953d: 86, 1962h: 69, 1977b: 121–122, 1979c: 54.

***cribrellus* Schedl** 1965c: 67. Holotype ♂?; Madagascar, Sagewerk in Perinet; Schedl Collection in NHMW, Wien.
Distribution: Madagascar.
Hosts: *Eugenia* sp.
References: (**tx**) Schedl 1965c: 67, 1977b: 115.

***elongatus* (Schedl)** 1950h: 107 (*Landolphianus*). Lectotype ♂; Madagascar; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 89.
Distribution: Madagascar.
Hosts: Liana.
Notes: (3) Schedl 1965c: 65 (described female).
References: (**tx**) Schedl 1950h: 105–108, 1965c: 65, 1977b: 115, 1979c: 89.

***euphorbiae* Schedl** 1961e: 137. Holotype, sex?; Madagascar, Faux-Cap; IRSM, Madagascar.
Distribution: Madagascar.
Hosts: *Euphorbia stenoclada*.
References: (**tx**) Schedl 1961e: 137, 1977b: 116.

***frontalis* Schedl** 1953d: 85. Lectotype ♀; Madagascar (S.-O.), plaines du Filherena; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 100.
Distribution: Madagascar.
References: (**tx**) Schedl 1953d: 85, 1977b: 116, 1979c: 100.

***gracilis* Schedl** 1958h: 559. Holotype, sex?; S. Africa: Zululand, Eshowe; BMNH, London.
Distribution: Africa (South Africa).
Hosts: *Maytenus acuminatus*.
References: (**cn**) Anonymous 1970c: 13. (**ds**) Anonymous 1970c: 13; Schedl 1962h: 58, 1962j: 39, 1962k: 1084, 1965h: 112. (**tx**) Schedl 1958h: 559, 1962j: 39.

***minor* (Schedl)** 1950h: 108 (*Landolphianus*). Syntypes 2 ♀; Madagascar; Schedl Collection in NHMW, Wien, and Fleutiaux Collection.
Distribution: Madagascar.
Notes: (3) Schedl 1961e: 138 (described male).

References: (**hb**) Schedl 1977b: 116; Wichmann 1954: 525. (**ds**) Schedl 1977b: 116. (**tx**) Schedl 1950h: 108, 1961e: 138, 1977b: 116.

***minutissimus* Schedl** 1961h: 139. Holotype ♂; Madagascar, scierie a Perinet; IRSM, Madagascar.
Distribution: Madagascar.
References: (**hb**) Schedl 1977b: 117. (**ds**) Schedl 1977b: 117. (**tx**) Schedl 1961h: 139, 1977b: 117.

***obesus* (Schedl)** 1953d: 87 (*Micraciops*). Lectotype ♀; Madagascar, Mt. d'Ambre; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 174.
Distribution: Madagascar.
References: (**hb**) Schedl 1977b: 117. (**ds**) Schedl 1977b: 117. (**tx**) Schedl 1953d: 87, 1977b: 117, 1979c: 174.

***oleae* Schedl** 1955i: 216. Lectotype ♀; Kenya: Londiani; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 177.
Distribution: Africa (Kenya).
Hosts: *Olea africana, O. hochstetteri*.
References: (**ds**) Gardner 1957a: 31; Schedl 1962j: 40. (**tx**) Schedl 1955i: 211, 216, 1957b: 156, 1962j: 40, 1979c: 177.

***oleaeformis* Schedl** 1970h: 178. Holotype ♀; Cape Prov.: Grootvadersbos; TMP, Pretoria.
Distribution: Africa (South Africa).
Hosts: *Olea capensis, O. laurifolia, Podocarpus latifolius, Xymalos monospora*.
References: (**cn**) Anonymous 1970c: 13 (**ds**) Anonymous 1970c: 13. (**tx**) Schedl 1970h: 178.

***podocarpi* Schedl** 1955i: 216. Syntypes ♂ ♀; Kenya: Londiani; BMNH, London, and Schedl Collection in NHMW, Wien.
Figures: Nunberg 1961b: 626, Schedl 1962j: 41 (antenna).
Distribution: Africa (Kenya/ South Africa/ Tanzania).
Hosts: *Cordia caffra, Euclea natalensis, Podocarpus* sp., *Sussonia* sp.,
Notes: (1) Schedl 1979c: 196 (Type restricted to BMNH syntypes).
References: (**ds**) Gardner 1957a: 31. (**tx**) Powell, W. 1980: 29; Schedl 1955i: 211, 216, 1961a: 350, 1962h: 65, 1962j: 40–41, 1962k: 1084, 1962n: 697, 1979c: 196.

podocarpi Schedl 1957b: 156. Syntypes ♂ ♀; Kenya, Eldoret; BMNH, London. Synonymy: Schedl 1979c: 196.
References: (**cn**) Anonymous 1970c: 13. (**ds**) Anonymous 1970c: 13; Schedl 1957b: 156, 1962h: 58, 1962j: 40, 1962k: 1084, 1970h: 180, 1975k: 277. (**tx**) Schedl 1957b: 156, 1962b: 65, 1962j: 40, 1962k: 1084, 1962n: 697, 1979c: 196.

caplandicus Nunberg 1961: 613 (*Pseudohylocurus*). Holotype, sex?; Deepwalls, Cape Prov.; BMNH, London. Synonymy: Schedl 1962k: 1093–1094, 1962n: 697.
References: (**tx**) Nunberg 1961b: 613, 626–627; Schedl 1962h: 65, 1962k: 1093–1094, 1962n: 697.

***pygmaeus* Schedl** 1965c: 66. Holotype ♂; Madagascar, Ambila; Schedl Collection in NHMW, Wien.
Distribution: Madagascar.
References: (**hb**) Schedl 1977b: 118. (**tx**) Schedl 1965c: 66, 1977b: 118, 1979c: 207.

***rhusi* Schedl** 1962j: 42. Holotype ♀; Transvaal: Bronkhorstfontein; NICP, Pretoria.
Distribution: Africa (South Africa).
Hosts: *Rhus lancea*.
References: (**cn**) Anonymous 1970c: 13. (**ds**) Anonymous 1970c: 13; Schedl 1962j: 42, 1975k: 277. (**tx**) Schedl 1962j: 42, 1979c: 211.

***rugosipes* Schedl** 1961e: 138. Holotype, sex?; Madagascar, Faux-Cap; IRSM, Madagascar.
Distribution: Madagascar.
Hosts: *Euphorbia stenoclada*.
References: (**tx**) Schedl 1961e: 138, 1977b: 119, 1979c: 216.

***spathulatus* Schedl** 1948c: 666. Lectotype ♀; Grahamstown, C. P., S. Africa; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 233.
Distribution: Africa (South Africa).
Hosts: *Cassinae* sp., *Maytenus acuminatus, Olea capensis, Podocarpus falcatus*.
References: (**cn**) Anonymous 1970c: 13. (**ds**) Anonymous 1970c: 13; Schedl 1948c: 666, 1962h: 59, 1962j: 43, 1962k: 1085, 1965h: 112, 1970h: 180, 1975k: 277, 1982: 278. (**tx**) Schedl 1948c: 666, 1979c: 233.

***subdepressus* Schedl** 1965c: 66. Holotype ♀; Madagascar, Montagne d'Ambre; Schedl Collection in NHMW, Wien.
Distribution: Madagascar.
References: (**tx**) Schedl 1965c: 66, 1977b: 119, 1979c: 241.

***subsulcatus* Browne** 1970: 559. Holotype, sex?; Cape Prov., Swellendam; BMNH, London.
Distribution: Africa (South Africa).
References: (**tx**) Browne 1970: 559.

***widdringtoniae* Schedl** 1962h: 69. Holotype, sex?; Cape Prov., Sederberg, S. Africa; NICP, Pretoria.
Distribution: Africa (South Africa).
Hosts: *Widdringtonia juniperoides*.
References: (**ds**) Schedl 1962j: 48. (**tx**) Schedl 1962h: 69, 1962j: 48, 1962k: 1085, 1979c: 269.

***xanthophloeae* Schedl** 1957d: 70. Holotype ♀; Kenya: Rift Valley; Schedl Collection in NHMW, Wien.
Distribution: Africa (Kenya).
Hosts: *Acacia xanthophloea*.
References: (**ec**) Schedl 1962j: 44. (**hb**) Schedl 1962j: 44. (**ds**) Schedl 1962j: 44. (**tx**) Schedl 1957d: 70, 1958h: 559, 1962j: 44, 1979c: 269.

***xylographus* Schedl** 1962j: 46. Holotype ♀; Cape Prov.: Alexandria, S. Africa; NICP, Pretoria.
Distribution: Africa (Namibia/ South Africa).

Hosts: *Cassinae* sp., *Olea africana*, *O. capensis*.
References: **cn** Anonymous 1970c: 13. **ds** Anonymous 1970c: 13; Schedl 1962h: 59, 1962j: 46, 1962k: 1085, 1977c: 394. (**tx**) Schedl 1960a: 349, 1962j: 46, 1979c: 270.

Genus *Traglostus* Schedl

TRAGLOSTUS SCHEDL 1938d: 454. Type-species: *Traglostus exornatus* Schedl, monobasic.
References: (**hb**) Wood, S. L. 1986a: 63. (**ds**) Wood, S. L. 1986a: 63. (**tx**) Schedl 1938d: 450, 454, 1958a: 557–560, 1962j: 49; Wood, S. L. 1986a: 63.

***brevisetosus* Schedl** 1957b: 153. Lectotype ♀: Kokstad, Griqualand E.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 47.
Distribution: Africa (South Africa).
Hosts: *Podocarpus falcatus*.
References: (**cn**) Anonymous 1970c: 13. (**ds**) Anonymous 1970c: 13; Schedl 1962j: 49. (**tx**) Schedl 1957b: 150, 153–154, 1962j: 49, 1979c: 47.

***exornatus* Schedl** 1938d: 454. Lectotype ♂; Kenya, Colony, Londiani; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 94.
Figures: Schedl 1962j: 50 (adult, antenna).
Distribution: Africa (Kenya).
Hosts: *Gymnosporia luteola*.
Notes: (3) Schedl 1941d: 394 (described female)
References: (**ds**) Browne 1970: 540; Gardner 1957a: 31; Schedl 1938d: 454, 1962j: 49. (**tx**) Schedl 1938d: 454–455, 1941d: 394, 1962j: 49–50, 1979c: 94.

***longipilis* Schedl** 1958h: 558. Holotype, sex?; S. Africa: Aus: BMNH, London.
Distribution: Africa (South Africa).
References: (**tx**) Schedl 1958h: 588, 1962j: 51, 1979c: 141.

***pubescens* Schedl** 1941d: 395. Holotype ♀; Sud-Afrika, O. Betschuanaland; Schedl Collection in NHMW, Wien.
Distribution: Africa (South Africa).
References: (**tx**) Schedl 1941d: 395, 1962j: 51, 1979c: 203.

***spatulatus* Schedl** 1982: 282. Holotype, sex?; Transvaal, Pretoria distr., Roodephaat; not seen, repository?
Distribution: Africa (South Africa).
Notes: (3) Allotype and 3 paratypes are in NHMW, Wien.
References: (**tx**) Schedl 1979c: 233, 1982: 282.

Genus *Miocryphalus* Schedl

MIOCRYPHALUS SCHEDL 1939i: 381. Type-species: *Stephanoderes natalensis* Eggers, monobasic.
Afromicracis Schedl 1959q: 709. Type-species: *Afromicracis kenyaensis* Schedl, monobasic. Synonymy: Wood 1986a: 63.
References: (**tx**) Schedl 1959q: 709, 1962j: 37; Wood, S. L. 1986a: 63.
Notes: (3) A careful study of this genus is needed. A mixture of unrelated genera may be included in the species listed here.
References: (**hb**) Wood, S. L. 1986a: 63. (**ds**) Wood, S. L. 1986: 63. (**tx**) Eggers 1940: 102; Schedl 1939i: 381–382, 1957d: 52–54, 1961j: 349, 1961k: 534, 1962j: 349–379, 1977b: 57; Wood, S. L. 1986a: 63.

***agnatus* Schedl** 1942c: 168. Holotype, sex?; Melville-Insel; Schedl Collection in NHMW, Wien.
Distribution: Australia (Melville Island).
References: (**tx**) Schedl 1939i: 381, 1942c: 168, 1979c: 15.

***angolensis* (Schedl)** 1962k: 1081 (*Afromicracis*). Holotype, sex?; Angola: Lunda, Nova Chaves; Schedl Collection in NHMW, Wien.
Distribution: Africa (Angola).
References: (**tx**) Schedl 1962k: 1081–1082, 1979c: 20.

***attenuatus* (Eggers)** 1935c: 306 (*Stephanoderes*). Holotype ♀; Congostaat (Stanleyville); USNM, Washington [2 cotypes in NHMW, Wien].
Distribution: Africa (Sierra Leone/ Uganda/ Zaire).
Hosts: *Bauhinia tomentosa*, *Cola acuminata*, *C. nitida*, *Spathodea campanulata*, *Theobroma cacao*.
References: (**cn**) Schmitz & Crisinel 1957: 12. (**hb**) Hargreaves 1937: 509; Pujol 1957: 245; Schedl 1961k: 535; Schmitz & Crisinel 1957: 12. (**ds**) Schedl 1961k: 535. (**tx**) Anderson, W. H. & Anderson 1971: 5; Eggers 1935c: 306–307; Schedl 1950d: 3, 17–18, 1952: 535, 1961k: 535, 1979c: 31.

***ciliatipennis* Schedl** 1979f: 105. Holotype, sex?; Fiji; published as Schedl Collection in NHMW, Wien, actually in BPBM, Honolulu.
Distribution: Fiji Islands.
References: (**tx**) Schedl 1979f: 105.

***congonus* Eggers** 1940b: 102. Holotype, sex?; Congostaat (Kivu: Lacs Mokoto); MRCB, Tervuren.
Figures: Schedl 1961k: 536.
Distribution: Africa (Cameroon/ Tanzania/ Zaire).
Hosts: *Guaria laurentii*.
References: (**hb**) Schedl 1961k: 536. (**ds**) Gardner 1957a: 31; Schedl 1961k: 536, 1965g: 19. (**tx**) Eggers 1940b: 102–103; Schedl 1939i: 381, 1950d: 6–7, 1961k: 536, 1979c: 63.

***convexus* (Schedl)** 1962k: 1082 (*Afromicracis*). Holotype, sex?; Natal; Schedl Collection in NHMW, Wien.
Distribution: Africa (Natal).
References: (**tx**) Schedl 1962k: 1082, 1979c: 65.

***dubius* Schedl** 1950d: 21. Holotype, sex?; D. E. Afrika; Schedl Collection in NHMW, Wien.
Distribution: Africa (Tanzania).
References: (**tx**) Schedl 1950d: 21, 1951m: 96, 1961k: 538, 1979c: 85.

***elongatus* Schedl** 1965e: 366. Holotype, sex?; Sudafrika, Pt. St. John; Schedl Collection in NHMW, Wien.
Distribution: Africa (South Africa).
References: (**tx**) Schedl 1965e: 366, 1979c: 89.

***grobleri* Schedl** 1961j: 349. Holotype, sex?; Cape Province, Grootvadersbosh; NICP, Pretoria.
Distribution: Africa (South Africa).
References: (**cn**) Anonymous 1970c: 13. (**ds**) Anonymous 1970c: 13; Schedl 1961j: 349, 1969d: 5. (**tx**) Schedl 1961j: 349, 1979c: 113.

***kenyaensis* (Schedl)** 1959q: 709 (*Afromicracis*). Holotype, sex?; Kenya, Kampi ya Moto; BMNH, London.
Distribution: Africa (Kenya).
References: (**ds**) Schedl 1959q: 705, 709. (**tx**) Schedl 1959q: 709, 1962j: 37, 1979c: 132.

***klainedoxae* Schedl** 1957d: 52. Holotype, sex?; Congo Belge: Yangambi; MRCB, Tervuren.
Distribution: Africa (Zaire).
Hosts: *Klainedoxa gabonensis* var. *oblongifolia*.
References: (**hb**) Schedl 1961k: 540. (**ds**) Schedl 1961k: 540. (**tx**) Schedl 1957d: 52, 1961k: 540, 1979c: 133.

***longus* Nunberg** 1964b: 434. Holotype, sex?; Abyssinien, Maraquo; NHMB, Budapest.
Figures: Nunberg 1964: 434.
Distribution: Africa (Ethiopia).
References: (**tx**) Nunberg 1964b: 434.

***natalensis* (Eggers)** 1936b: 36 (*Stephanoderes*). Holotype, sex?; Natal, Estcourt, 4000 ft.; BMNH, London.
Distribution: Africa (Natal in South Africa).
References: (**tx**) Eggers 1936b: 36, 1940b: 102; Schedl 1939i: 381–382, 1961k: 540, 1979c: 163.

***nigrinus* Schedl** 1957d: 53. Holotype, sex?; Congo Belge: Kabali-Ituri, Irumu; MRCB, Tervuren.
Figures: Schedl 1961k: 541.
Distribution: Africa (Zaire).
Hosts: Liana.
References: (**hb**) Schedl 1961k: 541. (**tx**) Schedl 1957d: 53, 1961k: 540–541, 1979c: 167.

***nitidus* (Schedl)** 1965g: 26 (*Eidophelus*). Holotype, sex?; Congo (Yangambi); Schedl Collection in NHMW, Wien.
Distribution: Africa (Zaire).
Hosts: *Randia congolana*.
References: (**tx**) Schedl 1965g: 26, 1979c: 170.

***pennatus* Schedl** 1953d: 79. Lectotype ♂; Madagascar, Mt. d'Ambre; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 187.
Distribution: Madagascar.
References: (**tx**) Schedl 1953d: 79, 1977b: 57, 1979c: 187.

***punctipennis* Schedl** 1965e: 367. Holotype, sex?; Ost-Afrika; Schedl Collection in NHMW, Wien.
Distribution: Africa (Tanzania).
References: (**tx**) Schedl 1965e: 367, 1979c: 205.

Genus *Pseudothysanoes* Blackman

PSEUDOTHYSANOES BLACKMAN 1920a: 46. Type-species: *Pseudothysanoes drakei* Blackman = *Cryphalus rigidus* LeConte, original designation.

Cryptocleptes Blackman 1920a: 51. Type-species: *Cryptocleptes dislocatus* Blackman, original designation, preoccupied by Simon 1884. Synonymy: Wood 1972c: 141.
References: (**tx**) Beal & Massey 1945: 59; Blackman 1920a: 51, 1922b: 73–74, 1928a: 186, 1943a: 359; Chamberlin 1939: 271; Schedl 1959m: 545–557; Wood, S. L. 1967d: 76, 1972c: 141.

Chalcohyus Blackman 1943a: 363. Type-species: *Chalcohyus securigerus* Blackman, original designation. Synonymy: Wood 1972c: 141.
References: (**tx**) Blackman 1943a: 363; Wood, S. L. 1972c: 141.

Bostrichips Schedl 1951d: 21. Type-species: *Bostrichips spinatus* Schedl, monobasic. Synonymy: Wood 1984b: 227.
References: (**tx**) Schedl 1951d: 21, 1958f: 33–46; Wood, S. L. 1984b: 227.

Gretschkinia Sokanovskii 1959: 276. Type-species: *Gretschkinia mongolica* Sokanovskii, monobasic. Synonymy: Wood 1984b: 227.
References: (**tx**) Schedl 1962p: 204; Sokanovskii 1959: 276; Wood, S. L. 1984b: 227.

Aphanocleptus Wood 1960b: 63. Type-species: *Aphanocleptus coniferae* Wood, original designation. Synonymy: Wood 1982b: 510.
References: (**tx**) Wood, S. L. 1960b: 63, 1982b: 510.

Cryptulocleptus Wood 1967d: 76. Type-species: *Cryptocleptes dislocatus* Blackman, automatic. Synonymy: Wood 1972c: 141.
References: (**tx**) Wood, S. L. 1967d: 76, 1972c: 141.

Neoglostatus Schedl 1978e: 300. Type-species: *Neoglostatus squamosus* Schedl, monobasic. Synonymy: Wood 1984b: 227.
References: (**tx**) Schedl 1978e: 300; Wood, S. L. 1984b: 227.

Keys: Wood 1982b: 511–519.
References: (**hb**) Wood, S. L. 1986a: 63. (**ds**) Wood, S. L. 1986a: 63. (**tx**) Beal & Massey 1945: 59, 100; Blackman 1920a: 1–62, 1921: 6–7, 47, 1922b: 65, 73, 1928a: 186, 199–200, 1943a: 355; Bright & Stark 1973: 63; Bruck 1936b: 30; Chamberlin 1939: 266–271; Wood, S. L. 1956b: 239, 1967d: 37–57, 1972c: 141, 1982b: 510–555, 1986a: 63.

***abbreviatus* (Schedl)** 1954b: 26 (*Cryptocleptes*). Lectotype ♂; Brasilien: Parana, Rondon, 500 m; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 8.
Distribution: South America (Brazil).
References: (**ds**) Schedl 1966f: 86, 1970e: 82. (**tx**) de Ruette 1970: 100; Schedl 1954b: 26, 1979c: 8.

***acaciae* (Blackman)** 1943a: 362 (*Cryptocleptes*). Holotype ♀; Brownsville, Texas [USA]; USNM, Washington.
Distribution: North America (Tamaulipas in Mexico/ S Texas in USA).
Hosts: *Mimosa* sp.
References: (**hb**) Wood, S. L. 1982b: 550. (**ds**) Blackwelder & Blackwelder 1948; Wood, S. L. 1982b: 550. (**tx**) Blackman 1943a: 362; Wood, S. L. 1956b: 238, 1982b: 550.

***acacicolens* Wood** 1969b: 23. Holotype ♂; Playa del Coco, Guanacaste, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: *Acacia* sp.
References: (**hb**) Wood, S. L. 1982b: 545. (**ds**) Wood, S. L. 1982b: 545. (**tx**) Wood, S. L. 1969b: 23, 1982b: 545.

***acares* (Wood)** 1969b: 32 (*Cryptulocleptus*). Holotype ♂; 30 km SE El Cameron, Oaxaca, Mexico; Wood Collection.
Distribution: North America (Jalisco, Oaxaca in Mexico).
Hosts: Leguminous tree branches.
References: (**ec**) Equihua & Atkinson 1986: 628. (**hb**) Equihua & Atkinson 1986: 628; Wood, S. L. 1982b: 551. (**ds**) Equihua & Atkinson 1986: 628; Wood, S. L. 1982b: 551. (**tx**) Wood, S. L. 1969b: 32, 1982b: 551.

***amassius* Wood** 1969b: 25. Holotype ♂; 20 km S Matias Romero, Oaxaca, Mexico; Wood Collection.
Distribution: North America (Oaxaca in Mexico).
Hosts: *Phoradendron* sp.
References: (**ds**) Wood, S. L. 1982b: 532. (**tx**) Wood, S. L. 1969b: 25, 1982b: 532.

***aquilus* (Wood)** 1969b: 32 (*Cryptulocleptus*). Holotype ♂; 26 km E Morelia, Michoacan, Mexico; Wood Collection.
Distribution: North America (Michoacan in Mexico).
Hosts: *Acacia* sp.
References: (**hb**) Atkinson et al. 1986: 29; Wood, S. L. 1982b: 552. (**ds**) Atkinson & Equihua 1985a: 82; Atkinson et al. 1986: 29; Wood, S. L. 1969b: 32, 1982b: 552. (**tx**) Wood, S. L. 1969b: 32, 1982b: 552.

***arbuti* (Wood)** 1969b: 30 (*Cryptulocleptus*). Holotype ♂; 13 km W Texmelucan, Puebla, Mexico; Wood Collection.
Distribution: North America (Puebla in Mexico).
Hosts: *Arbutus* sp.
References: (**hb**) Atkinson & Equihua 1985a: 82; Atkinson et al. 1986: 30; Burgos & Saucedo 1983: 84; Wood, S. L. 1982b: 541. (**ds**) Atkinson & Equihua 1985a: 82; Atkinson et al. 1986: 30; Burgos & Saucedo 1983: 84; Wood, S. L. 1982b: 541. (**tx**) Wood, S. L. 1969b: 30, 1982b: 541.

***argentiniae* (Schedl)** 1958f: 43 (*Bostrichips*). Lectotype, sex?; Argentinien: Cordoba, Dep. Punilla; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 25.
Distribution: South America (Argentina).
References: (**ds**) Schedl 1979e: 58. (**tx**) Schedl 1958f: 43, 1979c: 25; Wood, S. L. 1969d: 23–24.

***atomus* Wood** 1980b: 355. Holotype ♂; Finca Monasterios, Caucagua, Miranda, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Theobroma cacao*.
References: (**tx**) Wood, S. L. 1980b: 355.

***bartoni* Bruck** 1936b: 32. Holotype ♂; Saddle Peak, Santa Monica Mts., California [USA]; OSUC, Columbus.
Distribution: North America (S California in USA).
Hosts: *Sphaeracula fasciculata*.
References: (**ec**) Bright 1976a. (**hb**) Bright & Stark 1973: 63; Chamberlin 1939: 270. (**ds**) Blackwelder 1939; Bright & Stark 1973: 63; Chamberlin 1939: 270; Wood, S. L. 1982b: 554. (**tx**) Bruck 1936b: 32; Chamberlin 1939: 270; Wood, S. L. 1957d: 109, 1982b: 544.

***bellus* (Schedl)** 1954b: 28 (*Cryptocleptes*). Lectotype ♂; Brasilien: Parana, Rondon, 500 m; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 36.
Distribution: South America (Brazil).
References: (**ds**) Schedl 1966f: 86, 1970e: 82. (**tx**) Schedl 1954b: 28, 1979c: 36.

***brunneus* Wood** 1971: 72. Holotype ♂; Miller Canyon, Huachuca Mts., Arizona [USA]; Wood Collection.
Distribution: North America (Chihuahua in Mexico/ Arizona in USA).
Hosts: *Quercus* sp.
References: (**hb**) Wood, S. L. 1982b: 524. (**ds**) Wood, S. L. 1982b: 524. (**tx**) Wood, S. L. 1971: 72, 1982b: 524.

***bullatus* Wood** 1969b: 28. Holotype ♂; 42 km SE Nochixtlan, Oaxaca, Mexico; Wood Collection.
Distribution: North America (Oaxaca in Mexico).
Hosts: *Phoradendron* sp.
References: (**hb**) Wood, S. L. 1982b: 531. (**ds**) Wood, S. L. 1982b: 531. (**tx**) Wood, S. L. 1969b: 28–29, 1982b: 531.

***caritus* (Wood)** 1969b: 30 (*Cryptulocleptus*). Holotype ♂; Cerro Punta, Chiriqui, Panama; Wood Collection.
Distribution: North America (Panama).
Hosts: Tree branches.
References: (**hb**) Wood, S. L. 1982b: 542. (**ds**) Wood, S. L. 1982b: 542. (**tx**) Wood, S. L. 1969b: 30–31, 1982b: 542.

***colombianus* (Blackman)** 1943a: 361 (*Cryptocleptes*). Holotype ♂; San Vicente, Santander, Colombia; USNM, Washington.

Distribution: South America (Colombia).
References: (**tx**) Blackman 1943a: 361; Wood, S. L. 1969b: 33.

***concentralis* Wood** 1975a: 27. Holotype ♀; 10 km SE Totolapan, Oaxaca, Mexico; Wood Collection.
Distribution: North America (Oaxaca in Mexico).
Hosts: (?) *Cassia* sp.
References: (**ds**) Wood, S. L. 1982b: 523. (**tx**) Wood, S. L. 1975a: 27, 1982b: 523.

***coniferae* (Wood)** 1960b: 64 (*Aphanocleptus*). Holotype ♀; 30 km W La Laja, Chihuahua, Mexico; Wood Collection.
Distribution: North America (Chihuahua, Nuevo Leon in Mexico).
Hosts: *Picea chihuahuana, Pseudotsuga taxifolia*.
References: (**hb**) Wood, S. L. 1960b: 64, 1982b: 521. (**ds**) Atkinson & Equihua 1988: 100; Wood, S. L. 1982b: 521. (**tx**) Wood, S. L. 1960b: 64, 1982b: 521.

***contrarius* Wood** 1974a: 14. Holotype ♂; Lagos de Colores, Chiapas, Mexico; CNCI, Ottawa.
Distribution: North America (Chiapas in Mexico).
Hosts: *Acacia pennatula*.
References: (**ds**) Wood, S. L. 1982b: 544. (**tx**) McNamara 1984: 758; Wood, S. L. 1974a: 14, 1982b: 544.

***coracinus* Wood** 1969b: 29. Holotype ♂; 34 km N Juchitlan, Jalisco, Mexico; Wood Collection.
Distribution: North America (Jalisco in Mexico).
References: (**hb**) Wood, S. L. 1982b: 539. (**ds**) Wood, S. L. 1982b: 539. (**tx**) Wood, S. L. 1969b: 29, 1982b: 539.

***costatus* Wood** 1956b: 236. Holotype ♂; Madera Canyon, Santa Rita Mts., Arizona [USA]; SMUK, Lawrence.
Distribution: North America (Arizona in USA).
Hosts: *Quercus* sp.
References: (**hb**) Wood, S. L. 1982b: 547. (**ds**) Wood, S. L. 1982b: 547. (**tx**) Wood, S. L. 1956b: 236, 1982b: 547.

***crassinus* Wood** 1969b: 29. Holotype ♂; 24 km W Tehuantepec, Oaxaca, Mexico; Wood Collection.
Distribution: North America (Oaxaca in Mexico).
Hosts: Leguminous tree.
References: (**hb**) Wood, S. L. 1982b: 542. (**ds**) Wood, S. L. 1982b: 542. (**tx**) Wood, S. L. 1969b: 29, 1982b: 542.

***cuspidis* Wood** 1971: 22. Holotype ♀; 10 km NE Teziutlan, Puebla, Mexico, 1600 m; Wood Collection.
Distribution: North America (Puebla in Mexico).
Hosts: Tree branch.
References: (**tx**) Wood, S. L. 1971: 22, 1982b: 536.

***dimorphus* (Schedl)** 1954b: 25 (*Cryptocleptes*). Lectotype ♂; Brasilien: Parana, Rondon, 500 m; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 81.
Distribution: South America (Brazil).
References: (**ds**) Schedl 1966g: 86, 1970e: 82. (**tx**) Schedl 1951h: 284, 1954b: 25, 1957d: 70, 1979c: 81.

***dislocatus* (Blackman)** 1920a: 51 (*Cryptocleptes*). Lectotype ♀; Agricultural College [Starkville], Mississippi [USA]; USNM, Washington, designated by Wood 1982b: 553.
Distribution: Antilles Islands (Virgin Islands), North America (Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Texas, West Virginia in USA).
Hosts: *Carya* spp.
References: (**cn**) Blackman 1950. (**hb**) Baker, W. L. 1972: 253; Beal & Massey 1945: 100; Blackman 1922b: 74–75, 1950; Chamberlin 1939: 271; Drooz 1985: 357; Wood, S. L. 1982b: 553. (**ds**) Atkinson et al. 1991: 158; Beal & Massey 1945: 100; Blackman 1922b: 74–75, 1950; Bright 1985c: 172; Chamberlin 1939: 271; Deyrup 1981b: 5; Drooz 1985: 357; Kleine 1934a: 165; Leng & Mutchler 1927: 52; Wood, S. L. 1982b: 553. (**tx**) Beal & Massey 1945: 100; Blackman 1920a: 51, 1922b: 74–75, 1928a: 207, 1943a: 359; Bright 1985c: 172; Chamberlin 1939: 271; de Ruette 1970: 100; Schedl 1979c: 82; Wood, S. L. 1956b: 238, 1962: 76, 1982b: 553.

***excavatus* (Wood)** 1969b: 33 (*Cryptulocleptus*). Holotype ♂; 30 km SE El Cameron, Oaxaca, Mexico; Wood Collection.
Distribution: North America (Oaxaca in Mexico).
Hosts: *Gossypium* sp.
References: (**hb**) Wood, S. L. 1982b: 520. (**ds**) Wood, S. L. 1982b: 520. (**tx**) Wood, S. L. 1969b: 33, 1982b: 520.

***fimbriatus* Wood** 1982a: 229. Holotype ♀; Zacapoaxtla, Puebla, Mexico, 2150 m; Wood Collection.
Distribution: North America (Puebla in Mexico).
Hosts: *Phoradendron* sp.
References: (**hb**) Atkinson & Equihua 1985b: 233. (**ds**) Atkinson & Equihua 1985b: 233. (**tx**) Wood, S. L. 1982a: 229, 1982b: 543.

***frondicolens* Wood** 1971: 73. Holotype ♂; Herb Martyr Campground, Chiricahua Mts., Arizona [USA]; Wood Collection.
Distribution: North America (S Arizona in USA).
Hosts: *Yucca* sp. leaves.
References: (**hb**) Wood, S. L. 1982b: 543. (**ds**) Wood, S. L. 1982b: 543. (**tx**) McNamara 1977: 199; Wood, S. L. 1971: 73, 1982b: 543.

***funebris* Wood** 1969b: 27. Holotype ♂; 27 km W Durango, Durango, Mexico; Wood Collection.
Distribution: North America (Coahuila, Durango in Mexico).
Hosts: *Phoradendron boleanum*.
References: (**hb**) Wood, S. L. 1982b: 530. (**ds**) Atkinson & Equihua 1988: 100; Wood, S. L. 1982b: 530. (**tx**) Wood, S. L. 1969b: 27–28, 1982b: 530.

***funereus* Wood** 1971: 21. Holotype ♂; Volcan Colima, Jalisco, Mexico; Wood Collection.
Distribution: North America (Jalisco in Mexico).
Hosts: *Phoradendron longifolium*.
References: (**hb**) Wood, S. L. 1982b: 530. (**ds**) Wood, S. L. 1982b: 530. (**tx**) Wood, S. L. 1971: 21, 1982b: 530.

***furvatus* Wood** 1969b: 26. Holotype ♂; 35 km N Juchitlan, Jalisco, Mexico; Wood Collection.
Distribution: North America (Jalisco in Mexico).
Hosts: *Phoradendron* sp.
References: (**hb**) Atkinson & Equihua 1985b: 233. (**ds**) Atkinson & Equihua 1985b: 233; Wood, S. L. 1982b: 528. (**tx**) Wood, S. L. 1969b: 26–27, 1982b: 528.

***furvescens* Wood** 1971: 21. Holotype ♂; 18 km N Huajuapan, Oaxaca, Mexico; Wood Collection.
Distribution: North America (Oaxaca in Mexico).
Hosts: *Phoradendron* sp.
References: (**hb**) Wood, S. L. 1982b: 527. (**ds**) Atkinson et al. 1986: 60; Wood, S. L. 1982b: 527. (**tx**) Wood, S. L. 1971: 21, 1982b: 527.

***furvus* Wood** 1969b: 26. Holotype ♂; Canas, Guanacaste, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica/Honduras).
Hosts: *Phoradendron robustissimum*.
References: (**hb**) Atkinson et al. 1986: 30; Burgos & Saucedo 1983: 85; Wood, S. L. 1982b: 528. (**ds**) Atkinson & Equihua 1988: 100; Atkinson et al. 1986: 30, 60; Burgos & Saucedo 1983: 85; Wood, S. L. 1982b: 528. (**tx**) Wood, S. L. 1969b: 26, 1982b: 528.

***graniticus* Wood** 1971: 21. Holotype ♀; 43 km SE Nochixtlan, Oaxaca, Mexico; Wood Collection.
Distribution: North America (Oaxaca in Mexico).
Hosts: *Phoradendron* sp.
References: (**hb**) Wood, S. L. 1982b: 534. (**ds**) Wood, S. L. 1982b: 534. (**tx**) Wood, S. L. 1971: 21–22, 1982b: 534.

***guevinae* (Schedl)** 1966e: 45 (*Bostrichips*). Holotype ♀; Sudchile, Termas Manzanar; Schedl Collection in NHMW, Wien.
Distribution: South America (Chile).
Hosts: *Guevina avellana*.
References: (**tx**) Schedl 1966e: 45, 1979c: 114.

***heliura* Wood** 1956b: 237. Holotype ♂; Luling, Texas [USA]; SMUK, Lawrence.
Distribution: North America (S Texas in USA).
Hosts: *Condalia obtusifolia*.
References: (**hb**) Wood, S. L. 1982b: 548. (**ds**) Wood, S. L. 1982b: 548, 1956b: 237. (**tx**) Wood, S. L. 1956b: 237, 1959a: 58, 1969b: 24, 1982b: 548.

***hopkinsi* Blackman** 1928a: 200. Holotype ♂; Piru Ck., Ventura Co., California [USA]; USNM, Washington.
Distribution: North America (S California in USA).
Hosts: *Fremontia californica*.
References: (**cn**) Doane et al. 1936. (**ec**) Bushing & Bright 1965: 203. (**hb**) Bright & Stark 1973: 63; Chamberlin 1939: 269; Doane et al. 1936. (**ds**) Blackwelder 1939; Bright & Stark 1973: 63; Chamberlin 1939: 269; Furniss, R. L. & Carolin 1977: 383; Keen 1929a: 26; Kleine 1934a: 166; Leng & Mutchler 1933: 53; Wood, S. L. 1982b: 540. (**tx**) Blackman 1928a: 200–201; Bruck 1936b: 31; Chamberlin 1939: 269; Wood, S. L. 1969b: 29.

***huachucae* Blackman** 1943a: 355. Holotype ♂; Huachuca Mts., Arizona [USA]; USNM, Washington, lost.
Figures: Blackman 1943a:fig. 15.
Distribution: North America (Chihuahua in Mexico/ Arizona in USA).
References: (**ds**) Blackwelder & Blackwelder 1948; Wood, S. L. 1960: 65, 1982b: 554. (**tx**) Blackman 1943a: 355; McNamara 1984: 758; Wood, S. L. 1960b: 65, 1982b: 554.

***insularis* (Blackman)** 1943a: 359 (*Cryptocleptes*). Holotype ♀; Cayamas, Cuba; USNM, Washington.
Figures: Blackman 1943a:figs. 16–17.
Distribution: Antilles Islands (Cuba).
References: (**ds**) Bright 1985c: 172. (**tx**) Blackman 1943a: 359; Bright 1985c: 172.

***lecontei* Blackman** 1920a: 49. Holotype ♂; Washington, D. C. [USA]; MCZ, Cambridge.
Distribution: North America (District of Columbia, Georgia, Maryland, New Jersey, New York, North Carolina, Pennsylvania, Virginia, West Virginia in USA).
Hosts: *Castenea dentata, Celtis* sp., *Juglans nigra, Ostrya virginica, Quercus* spp.
References: (**cn**) Blackman 1950; Doane et al. 1936. (**hb**) Baker, W. L. 1972: 253; Beal & Massey 1945: 101; Blackman 1950; Chamberlin 1939: 269; Deyrup & Atkinson 1987a: 65; Doane et al. 1936; Wood, S. L. 1982b: 527. (**ds**) Atkinson et al. 1991: 158; Beal & Massey 1945: 101; Blackman 1950; Blackwelder 1939; Chamberlin 1939: 269; Deyrup 1981b: 5; Deyrup & Atkinson 1987a: 65; Drooz 1985: 356; Kirk 1970; Kleine 1934a: 166; Leng & Mutchler 1927: 52; Wood, S. L. 1982b: 527. (**tx**) Beal & Massey 1945: 101; Blackman 1920a: 46–50, 1928a: 200–203; Bruck 1936b: 31; Chamberlin 1939: 269; Wood, S. L. 1969d: 24, 1982b: 527.

***leechi* Wood** 1980b: 356. Holotype ♂; 3 km NNE Angwin, Napa Co., California [USA]; CAS, San Francisco.
Distribution: North America (California in USA).
Hosts: *Phoradendron flavescens* var. *villosum*.
References: (**ds**) Wood, S. L. 1982b: 529. (**tx**) Wood, S. L. 1980b: 356, 1982b: 529.

***mancus* Wood** 1969b: 24. Holotype ♂; 3 km E Armeria, Colima, Mexico; Wood Collection.
Distribution: North America (Colima in Mexico).
References: (**hb**) Wood, S. L. 1982b: 549. (**ds**)

Atkinson & Equihua 1988: 100; Wood, S. L. 1982b: 549. (**tx**) Wood, S. L. 1969b: 24–25, 1982b: 549.

***mandibularis* Wood** 1984: 118. Holotype ♂; Estacion de Biologia, Chamela, Jalisco, Mexico; Wood Collection.
Distribution: North America (Jalisco in Mexico).
References: (**ec**) Equihua & Atkinson 1986: 628. (**hb**) Equihua & Atkinson 1986: 628. (**ds**) Equihua & Atkinson 1986: 628. (**tx**) Wood, S. L. 1984: 118.

***mendicus* (Wood)** 1969b: 31 (*Cryptulocleptus*). Holotype ♂; 11 km S Colima, Colima, Mexico; Wood Collection.
Distribution: North America (Colima in Mexico).
Hosts: Leguminous tree.
References: (**ec**) Equihua & Atkinson 1986: 628. (**hb**) Equihua & Atkinson 1986: 628; Wood, S. L. 1982b: 554. (**ds**) Equihua & Atkinson 1986: 628; Wood, S. L. 1982b: 554. (**tx**) Wood, S. L. 1969b: 31–32, 1982b: 554.

***minor* (Blackman)** 1928a: 207 (*Cryptocleptes*). Holotype ♀; Cayamas, Cuba; USNM, Washington.
Distribution: Antilles Islands (Cuba).
References: (**ds**) Blackwelder 1947: 784; Bright 1985c: 172. (**tx**) Blackman 1928a: 207–208, 1943a: 359; Bright 1985c: 172.

***minulus* (Wood)** 1956b: 238 (*Cryptocleptes*). Holotype ♀; 10 km W Zanatepec, Oaxaca, Mexico; SMUK, Lawrence.
Distribution: North America (Oaxaca in Mexico).
Hosts: Malvaceae tree.
References: (**hb**) Wood, S. L. 1982b: 550. (**ds**) Wood, S. L. 1982b: 550. (**tx**) de Ruette 1970: 100; Wood, S. L. 1956b: 238, 1982b: 550.

***mirus* (Wood)** 1969b: 32 (*Cryptulocleptes*). Holotype ♂; 38 km S Matias Romero, Oaxaca, Mexico; Wood Collection.
Distribution: North America (Oaxaca in USA).
Hosts: Shrub.
References: (**hb**) Wood, S. L. 1982b: 552. (**ds**) Wood, S. L. 1982b: 552. (**tx**) Wood, S. L. 1969b: 32, 1982b: 552.

***mongolica* (Sokanovskii)** 1959a: 277 (*Gretschkinia*). Syntypes, sex?; Mongolia, pres de la frontiere de l'USSR; Sokanovskii Collection, not located.
Distribution: Asia (Gansu, Hebei, Liaoning, Shanxi in China/ Mongolia).
Hosts: *Ulmus pumila*.
References: (**ds**) Yanovskii & Tegshzhargal 1985: 409. (**tx**) Michalski 1969b: 568; Schedl 1962p: 204, 1979c: 158; Sokanovskii 1959a: 277.

***mucronatus* (Wood)** 1969b: 34 (*Cryptulocleptus*). Holotype ♂; La Lima, Cortez, Honduras; Wood Collection.
Distribution: North America (Honduras).
Hosts: Liana.
References: (**hb**) Wood, S. L. 1982b: 536. (**ds**) Wood, S. L. 1982b: 536. (**tx**) Wood, S. L. 1969b: 34–35, 1982b: 536.

***multispinatus* Wood** 1957b: 109. Holotype ♂; Gainesville, Florida [USA]; USNM, Washington.
Distribution: North America (Florida in USA).
Hosts: *Tilia cienserrata*.
References: (**ds**) Wood, S. L. 1982b: 545. (**tx**) Wood, S. L. 1957d: 109, 1982b: 545.

***murilloi* (Blackman)** 1943a: 360 (*Cryptocleptes*). Holotype ♀; San Vicente, Sant., Colombia, 692 m; USNM, Washington.
Figures: Blackman 1943a:fig. 21.
Distribution: South America (Colombia).
Hosts: *Albizzia macrocarpa*.
References: (**tx**) Blackman 1943a: 360; Schedl 1979c: 162.

***obesus* (Wood)** 1969b: 33 (*Cryptulocleptus*). Holotype ♂; 30 km SE El Cameron, Oaxaca, Mexico; Wood Collection.
Distribution: North America (Oaxaca in Mexico).
Hosts: *Gossypium* sp.
References: (**hb**) Wood, S. L. 1982b: 522. (**ds**) Wood, S. L. 1982b: 522. (**tx**) Wood, S. L. 1969b: 33, 1982b: 522.

***peniculus* Wood** 1969b: 28. Holotype ♂; 13 km W Texmelucan, Puebla, Mexico; Wood Collection.
Figures: Atkinson et al. 1986: 28.
Distribution: North America (Puebla in Mexico).
Hosts: *Phoradendron* sp.
References: (**hb**) Atkinson & Equihua 1985a: 81; Atkinson et al. 1986: 30; Burgos & Saucedo 1983: 82; Wood, S. L. 1982b: 532. (**ds**) Atkinson & Equihua 1985: 81; Atkinson et al. 1986: 30; Burgos & Saucedo 1983: 82; Wood, S. L. 1982b: 532. (**tx**) Atkinson et al. 1986: 28; Muskus 1984: 82; Wood, S. L. 1969b: 28, 1982b: 532.

***perseae* Wood** 1981: 125. Holotype ♂; Cerro Chipinque, Monterrey, Nuevo Leon, Mexico; Wood Collection.
Distribution: North America (Nuevo Leon in Mexico).
Hosts: *Persea* sp.
References: (**hb**) Atkinson & Equihua 1985b: 233. (**ds**) Atkinson & Equihua 1985b: 233; Wood, S. L. 1982b: 553. (**tx**) Wood, S. L. 1981: 125, 1982b: 553.

***phoradendri* Blackman** 1928a: 202. Holotype ♂; Victoria, Texas [USA]; USNM, Washington.
Distribution: North America (Chihuahua in Mexico/ S Arizona, S California, SW Texas in USA).
Hosts: *Phoradendron flavescens*.
References: (**hb**) Bright & Stark 1973: 64; Chamberlin 1939: 269; Wood, S. L. 1982b: 529. (**ds**) Atkinson 1989b: 336; Blackwelder 1939; Bright & Stark 1973: 64; Chamberlin 1939: 269; Furniss, R. L. & Carolin 1977: 383; Keen 1929a: 26; Kleine 1934a: 166; Leng & Mutchler 1933: 53;

Wood, S. L. 1960b: 65, 1982b: 529. (**tx**) Atkinson 1989b: 336; Blackman 1928a: 202–203; Bright 1966b: 306; Bruck 1936b: 31; Chamberlin 1939: 269; Keen 1929a: 26; de Ruette 1970: 113; Wood, S. L. 1960b: 65, 1969b: 25–26, 1982b: 529.

***pini* Wood** 1982a: 229. Holotype ♀; Km 43 on Texcoco-Calpualpan highway, Mexico, Mexico; Wood Collection.
Distribution: North America (Mexico in Mexico).
Hosts: *Pinus hartwegii* x *P. montezumae*.
References: (**hb**) Atkinson & Equihua 1985a: 82. (**ds**) Atkinson & Equihua 1985a: 82. (**tx**) Wood, S. L. 1982a: 229.

***plaumanni* (Schedl)** 1951m: 106 (*Cryptocleptes*). Syntypes, sex?; Brasilien, Santa Catarina, Nova Teutonia; Schedl Collection in NHMW, Wien, and Plaumann Collection.
Distribution: South America (Brazil).
Notes: (1) Schedl 1979c: 196 (citation of holotype invalid).
References: (**tx**) Schedl 1951m: 106, 1954b: 25, 1959m: 549, 1979c: 196.

***plumalis* Wood** 1969b: 29. Holotype ♂; 18 km N Huajuapan, Oaxaca, Mexico; Wood Collection.
Distribution: North America (Oaxaca in Mexico).
Hosts: *Psittacanthus* sp.
References: (**hb**) Wood, S. L. 1982b: 538. (**ds**) Wood, S. L. 1982b: 538. (**tx**) Wood, S. L. 1969b: 29, 1982b: 538.

***pumilus* (Wood)** 1969b: 31 (*Cryptulocleptus*). Holotype ♂; 53 km S Colima, Mexico; Wood Collection.
Distribution: North America (Colima in Mexico).
Hosts: Shrub.
References: (**ec**) Equihua & Atkinson 1986: 628. (**hb**) Equihua & Atkinson 1986: 628; Wood, S. L. 1982b: 555. (**ds**) Equihua & Atkinson 1986: 628; Wood, S. L. 1982b: 555. (**tx**) Wood, S. L. 1969b: 31, 1982b: 555.

***quercicolens* Wood** 1956b: 235. Holotype ♂; 50 km SE El Salto, Durango, Mexico; SMUK, Lawrence.
Distribution: North America (Durango, Michoacan, Sinaloa in Mexico).
Hosts: *Quercus* sp.
References: (**hb**) Wood, S. L. 1982b: 526. (**ds**) Wood, S. L. 1982b: 526. (**tx**) Wood, S. L. 1956b: 235, 1982b: 526.

***quercinus* (Wood)** 1969b: 30 (*Cryptulocleptus*). Holotype ♂; 37 km W Durango, Durango, Mexico; Wood Collection.
Distribution: North America (Durango, Oaxaca in Mexico).
Hosts: *Quercus* sp.
References: (**hb**) Wood, S. L. 1982b: 522. (**ds**) Wood, S. L. 1982b: 522. (**tx**) Wood, S. L. 1969b: 30, 1982b: 522.

***querneus* Wood** 1971: 20. Holotype ♂; 17 km E Pachuca, Hidalgo, Mexico; Wood Collection.
Distribution: North America (Hidalgo, Nuevo Leon, Queretaro, Vera Cruz in Mexico).
Hosts: *Quercus* spp.
References: (**hb**) Atkinson & Equihua 1985a: 81; Atkinson et al. 1986: 30; Burgos & Saucedo 1983: 82; Wood, S. L. 1982b: 521. (**ds**) Atkinson & Equihua 1985a: 81; Atkinson et al. 1986: 30; Burgos & Saucedo 1983: 82; Wood, S. L. 1971: 20–21, 1982b: 521. (**tx**) Wood, S. L. 1971: 20, 1982b: 521.

***recavus* Wood** 1974a: 14. Holotype ♀; 8 km S Simojovel, Chiapas, Mexico; CNCI, Ottawa.
Distribution: North America (Chiapas in Mexico).
References: (**ds**) Wood, S. L. 1982b: 519. (**tx**) McNamara 1984: 758; Wood, S. L. 1974a: 14, 1982b: 519.

***rigidus* (LeConte)** 1876: 362 (*Cryphalus*). Lectotype ♂; Canada; MCZ, Cambridge, designated by Wood 1982b: 541.
Figures: Blackman 1920a:figs. 35–36.
Distribution: North America (apparently Ontario in Canada/ E Kansas, Michigan, New York, Ohio, Pennsylvania in USA).
Hosts: *Tilia americana*.
Notes: (3) Blackman 1920a: 47 (redescribed), 1928a: 202 (redescribed).
References: (**cn**) Blackman 1950; Doane et al. 1936; Swaine 1918a: 82. (**hb**) Baker, W. L. 1972: 253; Blackman 1950; Bright 1976d: 103; Chamberlin 1939: 268; Deyrup & Atkinson 1987a: 65; Doane et al. 1936; Kirkendall 1984: 238; Swaine 1918a: 82; Wood, S. L. 1982b: 541. (**ds**) Blackman 1950; Blackwelder 1939; Blatchley & Leng 1916: 650; Bright 1976d: 103; Chamberlin 1939: 268; Deyrup 1981b: 5; Deyrup & Atkinson 1987a: 65; Drooz 1985: 356; Hagedorn 1910d: 45; Henshaw 1882: 269, 1885: 148; Hubbard & Schwarz 1878a: 666; Kleine 1913b: 119, 1914b: 409, 1934a: 166; Leng 1920: 339; Schwarz 1886: 42; Swaine 1909: 93; Ulke 1902: 56; Wood, S. L. 1982b: 541. (**tx**) Blackman 1920a: 36–37, 48–49, 1922b: 73, 1928a: 200–201, 1943a: 355, 1982a; Blatchley & Leng 1916: 650; Bright 1976d: 103; Bruck 1936b: 31; Chamberlin 1939: 268; Hagedorn 1910a: 87; LeConte 1876: 362; Schwarz 1886: 42; Sokanovskii 1959a: 277; Swaine 1909: 93, 1918a: 62–63, 82; Wood, S. L. 1967d: 402, 1982b: 541.

drakei Blackman 1920a: 48. Lectotype ♂; Syracuse, New York [USA]; USNM, Washington, designated by Wood 1982b: 541. Synonymy: Wood 1957c: 402.
References: (**cn**) Blackman 1950; Doane et al. 1936. (**hb**) Blackman 1950; Chamberlin 1939: 268; Doane et al. 1936. (**ds**) Anonymous 1926c: 517; Blackman 1950; Blackwelder 1939; Chamberlin 1939: 268; Leng & Mutchler 1927: 52; Leonard 1928: 517. (**tx**) Blackman 1920a: 48–49, 1928a: 200, 202; Bruck 1936b: 31; Chamberlin 1939: 268; Wood, S. L. 1957c: 402, 1982b: 541.

***securigerus* (Blackman)** 1943a: 364 (*Chalcoluyus*). Holotype ♀; Yauco, Puerto Rico; USNM, Washington.
Distribution: Antilles Islands (Haiti/ Puerto Rico), North America (Florida in USA).
Hosts: *Amyris balsamifera*.
References: (**ds**) Atkinson et al. 1991: 158; Bright 1985c: 172; Wolcott 1948: 384. (**tx**) Blackman 1943a: 364; Bright 1985c: 172; Schedl 1979c: 223; Wood, S. L. 1972b: 141.

***securus* Wood** 1977b: 216. Holotype ♀; 8 km W Tulancingo, Hidalgo, Mexico; Wood Collection.
Distribution: North America (Hidalgo in Mexico).
Hosts: *Quercus* sp.
References: (**ds**) Wood, S. L. 1982b: 526. (**tx**) Wood, S. L. 1977b: 216, 1982b: 526.

***sedulus* Blackman** 1928a: 204. Holotype ♂; Bear Canyon, Catalina Mts., Arizona [USA]; USNM, Washington.
Distribution: North America (Arizona, New Mexico, W Texas in USA).
Hosts: *Quercus emoryi*, *Q. gambelii*, *Q.* spp.
References: (**cn**) Doane et al. 1936. (**hb**) Chamberlin 1939: 269; Doane et al. 1936; Wood, S. L. 1982b: 525. (**ds**) Atkinson et al. 1991: 158; Blackwelder 1939; Chamberlin 1939: 269; Furniss, R. L. & Carolin 1977: 383; Keen 1929a: 26; Kleine 1934a: 166; Leng & Mutchler 1933: 53; Wood, S. L. 1982b: 525. (**tx**) Blackman 1928a: 204; Bruck 1936b: 31; Chamberlin 1939: 269; Keen 1929a: 26; Wood, S. L. 1956b: 235, 1971: 151, 1982b: 525.

gambetti Blackman 1928a: 205. Holotype ♂; Peloncillo Reserve, New Mexico [USA]; USNM, Washington. Synonymy: Wood 1972c: 151.
References: (**cn**) Doane et al. 1936. (**hb**) Chamberlin 1939: 270; Doane et al. 1936. (**ds**) Blackwelder 1939; Chamberlin 1939: 270; Keen 1929a: 26; Kleine 1934a: 166; Leng & Mutchler 1933: 53. (**tx**) Blackman 1928a: 205–208; Bruck 1936b: 32; Chamberlin 1939: 270; Keen 1929a: 26; McNamara 1984: 758; Wood, S. L. 1956b: 235, 1972c: 151.

barberi Blackman 1928a: 206. Holotype ♂; Williams, Arizona [USA]; USNM, Washington. Synonymy: Wood 1972c: 151.
References: (**hb**) Chamberlin 1939: 270. (**ds**) Blackwelder 1939; Chamberlin 1939: 270; Keen 1929a: 26; Kleine 1934a: 166; Leng & Mutchler 1933: 53. (**tx**) Blackman 1928a: 200, 206–207; Bruck 1936b: 32; Chamberlin 1939: 270; Keen 1929a: 26; de Ruette 1970: 113; Wood, S. L. 1956b: 235, 1972c: 151.

***simplex* Wood** 1984e: 118. Holotype ♂; Estacion de Biologia, Chamela, Jalisco, Mexico; Wood Collection.
Distribution: North America (Jalisco in Mexico).
References: (**ec**) Equihua & Atkinson 1987: 628. (**hb**) Equihua & Atkinson 1986: 628. (**ds**) Equihua & Atkinson 1986: 628. (**tx**) Wood, S. L. 1984e: 118.

***spicatus* (Wood)** 1969b: 33 (*Cryptulocleptus*). Holotype ♂; Cerro Punta, Chiriqui, Panama, 1800 m; Wood Collection.
Distribution: North America (Panama).
Hosts: Large log.
References: (**hb**) Wood, S. L. 1982b: 538. (**ds**) Wood, S. L. 1982b: 538. (**tx**) Wood, S. L. 1969b: 33–34, 1982b: 538.

***spinatifer* Wood** 1988a: 32. Holotype ♂; 27 km W Tehuantepec, Oaxaca, Mexico; SMUK, Lawrence, automatic.
Distribution: North America (Oaxaca in Mexico).
Hosts: Leguminous tree limb.
References: (**tx**) Wood, S. L. 1988a: 32.

spinatus Wood 1956b: 154. Holotype ♂; 27 km W Tehuantepec, Oaxaca, Mexico; SMUK, Lawrence, preoccupied by Schedl 1951.
References: (**ec**) Equihua & Atkinson 1986: 628. (**hb**) Equihua & Atkinson 1986: 628; Wood, S. L. 1982b: 546. (**ds**) Equihua & Atkinson 1986: 628; Wood, S. L. 1982b: 546. (**tx**) Wood, S. L. 1956b: 154, 1957d: 109, 1969b: 23, 1982b: 546.

***spinatus* (Schedl)** 1951d: 21 (*Bostrichips*). Syntypes, sex?; Chile; Schedl Collection in NHMW, Wien, and Museo Nacional de Historia Natural, Santiago.
Distribution: South America (Chile).
References: (**ds**) Schedl 1972d: 143. (**tx**) Schedl 1951d: 21, 1972d: 143, 1979c: 234.

***spinura* Wood** 1959a: 58. Holotype ♂; Oak Creek Canyon, Arizona [USA]; Wood Collection.
Distribution: North America (Chihuahua in Mexico/ Arizona in USA).
Hosts: *Ceanothus integerrimus*.
References: (**ec**) Bright 1976a. (**hb**) Wood, S. L. 1982b: 548. (**ds**) Wood, S. L. 1959a: 58, 1960b: 65, 1982b: 548. (**tx**) Wood, S. L. 1959a: 58, 1960b: 65, 1969b: 24, 1982b: 548.

***squameus* Wood** 1984e: 118. Holotype ♂; Estacion de Biologia, Chamela, Jalisco, Mexico; Wood Collection.
Distribution: North America (Jalisco in Mexico).
Hosts: *Lonchocarpus* sp.
References: (**ec**) Equihua & Atkinson 1986: 628. (**hb**) Equihua & Atkinson 1986: 628. (**ds**) Equihua & Atkinson 1986: 628. (**tx**) Wood, S. L. 1984e: 118.

***squamosus* (Schedl)** 1978c: 300 (*Neoglostatus*). Holotype, sex?; Brasilien, Nova Teutonia; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1978c: 300.

***subpilosus* (Wood)** 1956b: 238 (*Cryptocleptes*). Holotype ♀; 32 km E Tehuantepec, Oaxaca, Mexico; SMUK, Lawrence.

Distribution: North America (Oaxaca in Mexico).
Hosts: *Celtis iguanae*.
References: (**hb**) Wood, S. L. 1982b: 551. (**ds**) Wood, S. L. 1982b: 551. (**tx**) de Ruette 1970: 100; Wood, S. L. 1956b: 238, 1969b: 31, 1982b: 551.

***subulatus* (Wood)** 1969b: 34 (*Cryptulocleptus*). Holotype ♂; Volcan Pacaya, Esquintla, Guatemala; Wood Collection.
Distribution: North America (Guatemala).
Hosts: *Eschweilera* sp.
References: (**hb**) Wood, S. L. 1982b: 537. (**ds**) Wood, S. L. 1982b: 537. (**tx**) Wood, S. L. 1969b: 34, 1982b: 537.

***tenellus* Wood** 1971: 23. Holotype ♂; 33 km W Morelia, Michoacan, Mexico; Wood Collection.
Distribution: North America (Michoacan in Mexico).
Hosts: *Phoradendron* sp., *Psittacanthus* sp.
References: (**hb**) Atkinson et al. 1986: 31; Burgos & Saucedo 1983: 84; Wood, S. L. 1982b: 539. (**ds**) Atkinson & Equihua 1985b: 233; Atkinson et al. 1986: 31; Burgos & Saucedo 1983: 84; Wood, S. L. 1982b: 539. (**tx**) Wood, S. L. 1971: 23, 1982b: 539.

***thomasi* Wood** 1967d: 38. Holotype ♂; Mazatlan, Sinaloa, Mexico; CNCI, Ottawa.
Distribution: North America (Jalisco, Sinaloa in Mexico).
Hosts: A small tree.
References: (**ec**) Equihua & Atkinson 1986: 629. (**hb**) Equihua & Atkinson 1986: 629; Wood, S. L. 1982b: 523. (**ds**) Equihua & Atkinson 1986: 629; Wood, S. L. 1982b: 523. (**tx**) de Ruette 1970: 113; Wood, S. L. 1967d: 38, 1982b: 523.

***truncatus* Wood** 1984e: 119. Holotype ♂; Playa Perula, Jalisco, Mexico; Wood Collection.
Distribution: North America (Jalisco in Mexico).
Hosts: *Randia* sp.
References: (**ec**) Equihua & Atkinson 1986: 629. (**hb**) Equihua & Atkinson 1986: 629. (**ds**) Equihua & Atkinson 1986: 629. (**tx**) Wood, S. L. 1984e: 119.

***tumidulus* Wood** 1975a: 28. Holotype ♂; 129 km NE San Juan del Rio on Highway 120, Queretaro, Mexico; CNCI, Ottawa.
Distribution: North America (Queretero in Mexico).
Hosts: Mistletoe on oak.
References: (**ds**) Wood, S. L. 1982b: 533. (**tx**) McNamara 1984: 758; Wood, S. L. 1975a: 28, 1982b: 533.

***turnbowi* Wood** 1977b: 217. Holotype ♀; Bentsen-Rio Grande State Park, Hidalgo Co., Texas [USA]; Wood Collection.
Distribution: North America (W Texas in USA).
Hosts: *Prosopis glandulosa*.
References: (**ds**) Wood, S. L. 1982b: 520. (**tx**) Wood, S. L. 1977b: 217, 1982b: 520.

***unimodus* (Schedl)** 1959m: 549 (*Cryptocleptes*). Holotype ♂; Matto Grosso: Rio Caraguata; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**ds**) Schedl 1966f: 86. (**tx**) Schedl 1959m: 549, 1979c: 260.

***vallatus* Wood** 1969b: 24. Holotype ♂; Volcan Colima, Jalisco, Mexico; Wood Collection.
Distribution: North America (Jalisco in Mexico).
Hosts: *Struthanthus venetus*.
References: (**hb**) Wood, S. L. 1982b: 525. (**ds**) Wood, S. L. 1982b: 525. (**tx**) Wood, S. L. 1969b: 24, 1982b: 525.

***verdicus* Wood** 1969b: 27. Holotype ♂; 7 km N Tlaxco, Tlaxcala, Mexico; Wood Collection.
Distribution: North America (Oaxaca, Tlaxcala in Mexico).
Hosts: *Phoradendron* spp.
References: (**hb**) Wood, S. L. 1982b: 535. (**ds**) Wood, S. L. 1982b: 535. (**tx**) Wood, S. L. 1969b: 27, 1982b: 535.

***verticillus* Wood** 1971: 22. Holotype ♂; 27 km N Ixmiquilpan, Hidalgo, Mexico; Wood Collection.
Distribution: North America (Hidalgo in Mexico).
Hosts: *Phoradendron* sp.
References: (**ds**) Wood, S. L. 1982b: 534. (**tx**) Wood, S. L. 1971: 22, 1982b: 534.

***vesculus* Wood** 1969b: 24. Holotype ♂; 3 km W Armeria, Colima, Mexico; Wood Collection.
Distribution: North America (Colima, Jalisco in Mexico).
Hosts: *Randia* sp.
References: (**ec**) Equihua & Atkinson 1986: 629. (**hb**) Equihua & Atkinson 1986: 629; Wood, S. L. 1982b: 547. (**ds**) Equihua & Atkinson 1986: 629; Wood, S. L. 1982b: 547. (**tx**) Wood, S. L. 1969b: 24, 1982b: 547.

***viscicolens* Wood** 1969b: 25. Holotype ♂; Zamorano, Morazan, Honduras; Wood Collection.
Distribution: North America (Honduras).
Hosts: *Phoradendron robustissimum*.
References: (**hb**) Wood, S. L. 1982b: 535. (**ds**) Wood, S. L. 1982b: 535. (**tx**) Wood, S. L. 1969b: 25–26, 1982b: 535.

***viscivorus* Wood** 1969b: 25. Holotype ♂; Volcan Ceboruco, Nayarit, Mexico; Wood Collection.
Distribution: North America (Nayarit in Mexico).
Hosts: *Phoradendron* cf. *robinsonii*.
References: (**hb**) Wood, S. L. 1982b: 531. (**ds**) Wood, S. L. 1982b: 531. (**tx**) Wood, S. L. 1969b: 25, 1982b: 531.

***yuccae* (Wood)** 1956b: 239 (*Cryptocleptes*). Holotype ♀; Tecamachalco, Puebla, Mexico; SMUK, Lawrence.
Distribution: North America (Puebla in Mexico).
Hosts: *Yucca* sp. leaves.
References: (**hb**) Wood, S. L. 1982b: 549. (**ds**)

Wood, S. L. 1982b: 549. (**tx**) Wood, S. L. 1956b: 239, 1982b: 549.

***yuccavorus* Wood** 1971: 23. Holotype ♂; 15 km W Durango, Durango, Mexico; Wood Collection.
Distribution: North America (Durango in Mexico).
Hosts: *Yucca* sp. leaves.
References: (**hb**) Atkinson & Equihua 1985a: 81; Wood, S. L. 1982b: 540. (**ds**) Atkinson & Equihua 1985a: 81, 1985b: 233; Wood, S. L. 1982b: 540. (**tx**) Wood, S. L. 1971: 23–24, 1982b: 540.

Genus *Stenoclyptus* Blackman

STENOCLYPTUS BLACKMAN 1943a: 356. Type-species: *Stenoclyptus rhois* Blackman = *Pseudothysanoes sulcatus* Bruck, original designation.
Keys: Wood 1982b: 556.
References: (**hb**) Wood, S. L. 1986a: 65. (**ds**) Wood, S. L. 1986a: 65. (**tx**) Blackman 1943a: 356; Bright & Stark 1973: 62; Schedl 1953d: 86; Wood, S. L. 1956a: 147, 1956b: 239, 1982b: 556, 1986a: 65.

***ruficollis* Wood** 1956b: 239. Holotype ♀; 20 km SE Matamoros, Puebla, Mexico; SMUK, Lawrence.
Distribution: North America (Puebla in Mexico).
Hosts: Twigs of a large tree.
References: (**hb**) Wood, S. L. 1982b: 556. (**ds**) Wood, S. L. 1982b: 556. (**tx**) de Ruette 1970: 113; Wood, S. L. 1956b: 239, 1982b: 556.

***sulcatus* (Bruck)** 1936b: 33 (*Pseudothysanoes*). Holotype ♂; Mt. Wilson, Los Angeles Co., California [USA]; OSUC, Columbus.
Figures: Blackman 1943a:figs. 9–10.
Distribution: North America (S California in USA).
Hosts: *Ceanothus integerrimus, Rhus laurina*.
Notes: (1) Wood 1956b: 240 (to *Stenoclyptus*).
References: (**hb**) Bright & Stark 1973: 63; Chamberlin 1939: 270; Wood, S. L. 1982b: 556. (**ds**) Blackwelder 1939; Bright & Stark 1973: 63; Wood, S. L. 1982b: 556. (**tx**) Bright 1966b: 305; Bruck 1936b: 33; Chamberlin 1939: 270; Wood, S. L. 1956b: 240, 1973c: 186, 1982b: 556.

rhois Blackman 1943a: 357. Holotype ♀; Orange, Orange Co., California [USA]; USNM, Washington. Synonymy: Wood 1973c: 186.
References: (**ds**) Blackwelder & Blackwelder 1948. (**tx**) Blackman 1943a: 357–358; Wood, S. L. 1973c: 186.

ceanothi Blackman 1943a: 358. Holotype ♀; Yosemite National Park, California [USA]; USNM, Washington. Synonymy: Bright 1966b: 305.
References: (**ds**) Blackwelder & Blackwelder 1948; Bright 1966b: 305. (**tx**) Blackman 1943a: 358; Bright 1966b: 305; Wood, S. L. 1973c: 186.

Genus *Saurotocis* Wood

SAUROTOCIS WOOD 1984b: 229. Type-species: *Micracidendron tomicoides* Schedl, original designation.
References: (**hb**) Wood, S. L. 1986a: 65. (**ds**) Wood, S. L. 1986a: 65. (**tx**) Wood, S. L. 1984b: 229, 1986a: 63, 65.

***dispar* (Schedl)** 1961e: 142 (*Micracidendron*). Holotype ♂; Madagascar, Perinet and Betsatsaky; IRSM, Madagascar.
Distribution: Madagascar.
References: (**tx**) Schedl 1961e: 142, 1977b: 120, 1979c: 82.

***tomicoides* (Schedl)** 1961e: 141 (*Micracidendron*). Holotype ♂; Madagascar, Perinet and Betsatsaky; IRSM, Madagascar.
Distribution: Madagascar.
References: (**hb**) Schedl 1977b: 120–121. (**ds**) Schedl 1977b: 120–121. (**tx**) Schedl 1961e: 141, 1977b: 121, 1979c: 253–254.

Genus *Thysanoes* LeConte

THYSANOES LECONTE 1876: 369. Type-species: *Thysanoes fimbricornis* LeConte, monobasic.
Keys: Wood 1982b: 557.
References: (**hb**) Wood, S. L. 1986a: 65. (**ds**) Wood, S. L. 1986a: 65. (**tx**) Beal & Massey 1945: 59, 101; Blackman 1920a: 27, 1922b: 65, 71, 1928a: 136, 197, 1943a: 342, 351, 363; Chamberlin 1939: 262–265; LeConte 1876: 369; LeConte & Horn 1883: 519–520; Swaine 1909: 147, 1913: 44, 82; Wood, S. L. 1956a: 147, 1956b: 233, 239, 351–353, 1982b: 557–570, 1986a: 65.

***adonis* Wood** 1969b: 36. Holotype ♀; 47 km W Quiroga, Michoacan, Mexico; Wood Collection.
Distribution: North America (Michoacan).
Hosts: *Quercus* sp.
References: (**ds**) Wood, S. L. 1982b: 556. (**tx**) Wood, S. L. 1969b: 36, 1982b: 556.

***berbericolens* Wood** 1971: 73. Holotype ♀; Nogal Lake, Lincoln Co., New Mexico [USA]; Wood Collection.
Distribution: North America (New Mexico in USA).
Hosts: *Berberus fremontii*.
References: (**ds**) Wood, S. L. 1982b: 561. (**tx**) Wood, S. L. 1971: 73, 1982b: 561.

***berchemiae* Blackman** 1920a: 44. Lectotype ♀; Vicksburg, Mississippi [USA]; USNM, Washington, designated by Wood 1982b: 561.
Figures: Blackman 1920a:figs. 26, 29.
Distribution: North America (Florida, Louisiana, Mississippi, Texas, Virginia in USA).
Hosts: *Berchemia scandens, Quercus* sp., *Ulmus* sp.
Notes: (1) Blackman 1922b: 73 (lapsus calami corrected in original spelling from *berschemiae*).
References: (**cn**) Blackman 1950; Doane et al. 1936. (**hb**) Baker, W. L. 1972: 253; Blackman 1950; Chamberlin 1939: 265; Doane et al. 1936; Kirken-

dall 1984: 238. (**ds**) Blackman 1950; Chamberlin 1939: 265; Hoffmann 1942: 12; Kleine 1934a: 166: Leng & Mutchler 1927: 52; Wood, S. L. 1982b: 561. (**tx**) Blackman 1920a: 44, 1922b: 71, 73, 1928a: 197, 199, 1943a: 352; Chamberlin 1939: 265; de Ruette 1970: 114; Wood, S. L. 1956b: 234, 1982b: 561.

***epicaris* Wood** 1969b: 35. Holotype ♀; 39 km S Mazamitla, Jalisco, Mexico; Wood Collection.
Distribution: North America (Jalisco in Mexico).
Hosts: Leguminous tree.
References: (**ec**) Equihua & Atkinson 1986: 629. (**hb**) Equihua & Atkinson 1986: 629; Wood, S. L. 1982b: 563. (**ds**) Equihua & Atkinson 1986: 629; Wood, S. L. 1982b: 563. (**tx**) Wood, S. L. 1969b: 35, 1982b: 563.

***fimbricornis* LeConte** 1876: 370. Lectotype ♀; Lancaster Co., Pennsylvania [USA]; MCZ, Cambridge, designated by Wood 1982b: 564.
Figures: Blackman 1920a:figs. 23–24, 27.
Distribution: North America (Durango, Hidalgo, Tamaulipas, Veracruz in Mexico/ District of Columbia, Florida, Illinois, Maryland, Mississippi, New Jersey, North Carolina, Pennsylvania, Texas, Virginia, West Virginia in USA).
Hosts: *Acacia* sp., *Acer rubrum, Carya* sp., *Celtis* sp., *Gleditsia triacanthos, Morus alba, Quercus* sp.
Notes: (3) Blackman 1920a: 42 (redescribed).
References: (**bv**) Turnbow & Franklin 1980. (**cn**) Blackman 1950; Doane et al. 1936; Packard 1890: 293; Swaine 1918a: 83. (**ec**) Burks 1979: 781; Bushing 1965: 468. (**hb**) Baker, W. L. 1972: 253; Beal & Massey 1945: 101–102; Blackman 1922b, 1950; Bright 1976d: 104; Chamberlin 1939: 264; Chittenden 1890; Deyrup & Atkinson 1987a: 65; Doane et al. 1936; Felt 1906: 716; Kirkendall 1984: 238; Packard 1890: 293; Riley 1891a: 130; Swaine 1918a: 83. (**ds**) Anonymous 1926c: 517; Atkinson & Equihua 1988: 100; Beal & Massey 1942, 1945: 101–102; Blackman 1922b: 71–72, 1950; Blatchley & Leng 1916: 649; Bright 1976d: 104, 1985c: 172; Chamberlin 1939: 264; Chittenden 1890; Deyrup 1981b: 5; Deyrup & Atkinson 1987a: 65; Drooz 1986: 367; Henshaw 1882: 269, 1885: 148; Kleine 1913b: 145, 1914b: 399; Leng 1920: 339; Leonard 1928: 517; Riley 1891a: 130; Smith, J. B. 1910: 403; Turnbow & Franklin 1980; Ulke 1902: 56; Wood, S. L. 1982b: 564. (**tx**) Beal & Massey 1945: 101–102; Blackman 1920a: 36–37, 1922b: 71–72, 1928a: 197–198, 1943a: 351; Blatchley & Leng 1916: 649; Bright 1976d: 104, 1985c: 172; Chamberlin 1939: 264; Hagedorn 1910a: 120; Hamilton 1891: 130; Hopkins 1914: 130; LeConte 1876: 370; LeConte & Horn 1883: 519; Schwarz 1889: 165, 1894: 45, 1896: 45; Swaine 1909: 147, 1918a: 83; Wood, S. L. 1956b: 233, 1969b: 35, 1982b: 564.

***granulifer* Wood** 1974a: 15. Holotype ♂; San Cristobal de las Casas, Chiapas, Mexico; CNCI, Ottawa.
Distribution: North America (Chiapas in Mexico).
References: (**ds**) Wood, S. L. 1982b: 562. (**tx**) McNamara 1984: 759; Wood, S. L. 1974a: 15, 1982b: 562.

***inornatus* Wood** 1971: 24. Holotype ♀; Volcan Colima, Jalisco, Mexico; Wood Collection.
Distribution: North America (Aguascalientes, Jalisco in Mexico).
Hosts: *Mimosa* sp., *Rhus* sp.
References: (**hb**) Atkinson et al. 1986: 31. (**ds**) Atkinson & Equihua 1985b: 234; Atkinson et al. 1986: 31, 60; Wood, S. L. 1982b: 560. (**tx**) Wood, S. L. 1971: 24, 1982b: 560.

***lobdelli* Blackman** 1920a: 43. Lectotype ♀; Trimcane Swamp, Mississippi [USA]; USNM, Washington, designated by Wood 1982b: 567.
Figures: Blackman 1920a: pls. 3, 5, figs. 28, 44, 1922b: pl. 8, fig. 41.
Distribution: North America (Oaxaca in Mexico/ Florida, Louisiana, Mississippi in USA).
Hosts: *Carya* sp., *Castanea pumila, Quercus* sp.
References: (**cn**) Blackman 1950; Doane et al. 1936. (**hb**) Baker, W. L. 1972: 253; Blackman 1922b: 71–72, 1950; Chamberlin 1939: 264; Doane et al. 1936. (**ds**) Blackman 1922b: 71–72, 1950; Chamberlin 1939: 264; Drooz 1985: 367; Kleine 1934a: 166; Leng & Mutchler 1927: 52; Wood, S. L. 1982b: 567. (**tx**) Blackman 1920a: 43, 1922b: 71–72, 1928a: 197, 199, 1943a: 351–352; Chamberlin 1939: 264; de Ruette 1970: 114; Wood, S. L. 1956b: 234, 1982b: 567.

***mexicanus* Wood** 1956b: 234. Holotype ♀; 40 km SE Oaxaca, Oaxaca, Mexico; SMUK, Lawrence.
Distribution: North America (Hidalgo, Oaxaca in Mexico).
Hosts: *Acacia* sp., etc.
References: (**ds**) Estrada & Atkinson 1988: 205; Wood, S. L. 1982b: 561. (**tx**) de Ruette 1970: 114; Wood, S. L. 1956b: 234, 1969b: 35, 1982b: 561.

***neotropicalis* Wood** 1969b: 35. Holotype ♀; San Ignacio de Acosta, San Jose, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: *Calliandra confusa*.
References: (**ds**) Wood, S. L. 1982b: 564. (**tx**) Wood, S. L. 1969b: 35, 1982b: 564.

***pallens* Wood** 1956b: 234. Holotype ♀; Sanford, Florida [USA]; SMUK, Lawrence.
Distribution: North America (San Luis Potosi, Veracruz in Mexico/ Florida, Louisiana in USA).
Hosts: *Carya* spp., *Quercus* spp., *Rhizophora mangle*.
References: (**ds**) Atkinson & Equihua 1988: 102; Wood, S. L. 1982b: 559. (**tx**) de Ruette 1970: 114; Wood, S. L. 1956b: 234, 1982b: 559.

***subsulcatus* Wood** 1969b: 35. Holotype ♀; 8 km W Tulancingo, Hidalgo, Mexico; Wood Collection.
Distribution: North America (Hidalgo in Mexico).
Hosts: *Quercus* sp.
References: (**hb**) Atkinson et al. 1986: 31. (**ds**) Atkinson & Equihua 1985a: 83; Atkinson et al. 1986: 31; Wood, S. L. 1982b: 566. (**tx**) Wood, S. L. 1969b: 35, 1982b: 566.

***texanus* Blackman** 1943a: 353. Holotype ♀; Brownsville, Texas [USA]; USNM, Washington.
Distribution: North America (Colima, Jalisco, Nayarit, Sinaloa, Tamaulipas, Veracruz in Mexico/ Texas in USA).
Hosts: *Acacia* sp., *Mimosa* sp., *Prosopis juliflora*.
References: (**ec**) Equihua & Atkinson 1986: 629. (**hb**) Equihua & Atkinson 1986: 629; Kirkendall 1984. (**ds**) Blackwelder & Blackwelder 1948; Equihua & Atkinson 1986: 629; Estrada & Atkinson 1988: 205; Wood, S. L. 1982b: 567. (**tx**) Blackman 1943a: 352–353; Wood, S. L. 1956b: 234, 1973c: 186, 1982b: 567.

vachelliae Blackman 1943a: 353. Holotype ♀; Brownsville, Texas [USA]; USNM, Washington. Synonymy: Wood 1973c: 186.
References: (**ds**) Blackwelder & Blackwelder 1948. (**tx**) Blackman 1943a: 353; McNamara 1984: 759; Wood, S. L. 1973c: 186.

ratamae Blackman 1943a: 354. Holotype ♀; Mexico; USNM, Washington. Synonymy: Wood 1973c: 186.
References: (**tx**) Blackman 1943a: 354; Wood, S. L. 1973c: 186.

***tuberculatus* Wood** 1975a: 29. Holotype ♂; 85 km S Valle Nacional, Oaxaca, Mexico; CNCI, Ottawa.
Distribution: North America (Oaxaca in Mexico).
References: (**ds**) Atkinson & Equihua 1988: 102; Wood, S. L. 1982b: 563. (**tx**) McNamara 1984: 759; Wood, S. L. 1975a: 29, 1982b: 563.

***xylophagus* Blackman** 1928a: 198. Holotype ♀; Williams, Arizona [USA]; USNM, Washington.
Distribution: North America (Durango in Mexico/ Arizona, New Mexico in USA).
Hosts: *Quercus* spp.
References: (**cn**) Doane et al. 1936. (**hb**) Chamberlin 1939: 265; Doane et al. 1936; Wood, S. L. 1982b: 569. (**ds**) Chamberlin 1939: 265; Furniss, M. M. 1978; Furniss, R. L. & Carolin 1977: 383; Keen 1929a: 26; Kleine 1934a: 166; Leng & Mutchler 1933: 53; Wood, S. L. 1982b: 569. (**tx**) Blackman 1928a: 198, 1943a: 351–352; Chamberlin 1939: 265; Keen 1929a: 26; Wood, S. L. 1982b: 569.

Genus *Phloeocleptus* Wood

PHLOEOCLEPTUS WOOD 1956a: 147. Type-species: *Phloeocleptus caudatus* Wood, original description.
Keys: Wood 1982b: 570.
Notes: (3) Species of this genus are exclusively phloeophagous; the superficially similar *Hylocurus* species are xylophagous.
References: (**hb**) Wood, S. L. 1986a: 65. (**ds**) Wood, S. L. 1986a: 65. (**tx**) Schedl 1959r: 42; Wood, S. L. 1956a: 147, 1961c: 4, 1982b: 570–578, 1986a: 65.

***ardis* Wood** 1981: 124. Holotype ♂; Cerro Chipinque, Monterrey, Nuevo Leon, Mexico, 1300 m; Wood Collection.
Distribution: North America (Nuevo Leon in Mexico).
Hosts: *Persea* sp.
References: (**hb**) Atkinson & Equihua 1985b: 234. (**ds**) Atkinson & Equihua 1985b: 234; Wood, S. L. 1982b: 578. (**tx**) Wood, S. L. 1981: 124, 1982b: 578.

***atkinsoni* Wood** 1981: 124. Holotype ♂; Uruapan, Michoacan, Mexico; Wood Collection.
Distribution: North America (Michoacan in Mexico).
Hosts: *Persea* sp.
References: (**hb**) Atkinson & Equihua 1985b: 234. (**ds**) Atkinson & Equihua 1985b: 234; Wood, S. L. 1982b: 575. (**tx**) Wood, S. L. 1981: 124, 1982b: 575.

***caudatus* Wood** 1956a: 147. Holotype ♂; 9 km NE Teziutlan, Puebla, Mexico; SMUK, Lawrence.
Distribution: North America (Puebla in Mexico).
Hosts: Tree branches.
References: (**hb**) Atkinson & Equihua 1985b: 576; Wood, S. L. 1982b: 576. (**ds**) Atkinson & Equihua 1985b: 234; Wood, S. L. 1982b: 576. (**tx**) de Ruette 1970: 105; Schedl 1959r: 42; Wood, S. L. 1956a: 147, 1982b: 576.

***cristatus* Wood** 1981: 125. Holotype ♂; Tepoztlan, Morelos, Mexico; Wood Collection.
Distribution: North America (Morelos in Mexico).
Hosts: *Persea* sp.
References: (**hb**) Atkinson et al. 1986: 29; Burgos & Saucedo 1983: 85. (**ds**) Atkinson & Equihua 1985b: 234; Atkinson et al. 1986: 29; Burgos & Saucedo 1983: 85. (**tx**) Wood, S. L. 1981: 125, 1982b: 575.

***nanulus* Wood** 1969b: 45. Holotype ♂; 7 km W Tepic, Nayarit, Mexico, 1000 m; Wood Collection.
Distribution: North America (Nayarit in Mexico).
Hosts: Tree branches.
References: (**hb**) Wood, S. L. 1982b: 575. (**ds**) Wood, S. L. 1982b: 575. (**tx**) Wood, S. L. 1969b: 45–46, 1982b: 575.

***obscurus* Wood** 1956a: 148. Holotype ♂; El Salto, San Luis Potosi, Mexico; SMUK, Lawrence.
Distribution: North America (San Luis Potosi in Mexico).
Hosts: *Persea americana*.
References: (**hb**) Wood, S. L. 1982b: 574. (**ds**) Wood, S. L. 1982b: 574. (**tx**) de Ruette 1970: 105; Wood, S. L. 1956a: 148, 1969b: 45, 1982b: 574.

***parvus* Wood** 1969b: 46. Holotype ♂; Los Corchos, Nayarit, Mexico; Wood Collection.
Distribution: North America (Nayarit in Mexico).
Hosts: Tree branches.
References: (**hb**) Wood, S. L. 1982b: 574. (**ds**) Wood, S. L. 1982b: 574. (**tx**) Wood, S. L. 1969b: 46, 1982b: 574.

***plagiatus* Wood** 1969b: 45. Holotype ♂; 7 km W Tepic, Nayarit, Mexico; Wood Collection.
Distribution: North America (Nayarit in Mexico).
Hosts: Tree branches.
References: (**hb**) Atkinson & Equihua 1985b: 234; Wood, S. L. 1982b: 573. (**ds**) Atkinson & Equihua 1985b: 234; Wood, S. L. 1982b: 573. (**tx**) Muskus, A. 1984: 79; Wood, S. L. 1969b: 45, 1982b: 573.

***punctatus* Wood** 1980b: 355. Holotype ♀; Santa Rosa National Park, Guanacaste Province, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: Tree branches.
References: (**ds**) Wood, S. L. 1982b: 572. (**tx**) Wood, S. L. 1980b: 355, 1982b: 572.

***spicatus* Wood** 1981: 125. Holotype ♂; Cerro Chipinque, Monterrey, Nuevo Leon, Mexico, 1300 m; Wood Collection.
Distribution: North America (Nuevo Leon in Mexico).
Hosts: *Persea* sp.
References: (**ds**) Atkinson & Equihua 1985b: 234; Wood, S. L. 1982b: 576. (**tx**) Wood, S. L. 1981: 125, 1982b: 576.

***tresmariae* (Schedl)** 1956b: 32 (*Hylocurus*). Holotype ♀?; village on Maria Madre, Tres Marias Islands, Gulf of California; CAS, San Francisco.
Distribution: North America (Tres Marias Islands in Mexico).
Notes: (1) Wood 1982b: 572 (to *Phloeocleptus*).
References: (**ds**) Schedl 1976a: 53; Wood, S. L. 1982b: 572. (**tx**) Schedl 1956b: 32, 1979c: 255; Wood, S. L. 1966b: 29, 1982b: 572.

Genus *Hylocurus* Eichhoff

HYLOCURUS EICHHOFF 1872a: 133. Type-species: *Hylocurus elegans* Eichhoff, monobasic.
Micracisoides Blackman 1920a: 19. Type-species: *Micracis rudis* LeConte, subsequent designation by Wood 1982b: 608. Synonymy: Blackman 1922a: 144.
References: (**tx**) Blackman 1920a: 19, 22, 1922a: 55–66, 1922b: 144–145; Wood, S. L. 1982b: 608.
Keys: Wood 1982b: 609.
Notes: (3) *Hylocurus* species are xylophagous both as larvae and as adults.
References: (**cn**) Blackman 1950. (**hb**) Wood, S. L. 1986a: 65. (**ds**) Wood, S. L. 1986a: 65. (**tx**) Beal & Massey 1945: 59, 96; Blackman 1922a: 143–145, 1928a: 186, 1943a: 242, 244; Blandford 1895b: 81–82, 1896e: 119, 1898b: 219–221; Bright 1978: 105; Bright & Stark 1973: 64; Chamberlin 1939: 247–248, 256–258; Eggers 1940a: 138; Eichhoff 1872a: 133, 1878b: 35, 56, 298; Hagedorn 1904c: 412, 1910a: 118–119, 1910d: 77; Hopkins 1914: 123, 133, 1915c: 176, 226; Lindemann 1876: 169; Schedl 1955g: 4, 1957d: 69, 71, 1957e: 865–883, 1959m: 545–557, 1959r: 42, 1962j: 33; Schreiner 1882: 246; Wood, S. L. 1956a: 147, 1982b: 608–636, 1986a: 65.

***aberrans* Wood** 1969b: 44. Holotype ♂; Dominical, Puntarenas, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
References: (**ds**) Schedl 1976a: 51, 1977d: 277, 1979b: 415; Wood, S. L. 1982b: 634. (**tx**) Wood, S. L. 1969b: 44, 1982b: 634.

***acutedentatus* Schedl** 1978c: 300. Holotype ♂; Brasilien, Encruzilhada, 900 m, Bahia; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1978c: 300.

***alienus* Eichhoff** 1878b: 301. Holotype, sex?; Cuba insula Americana; Schedl Collection in NHMW, Wien.
Distribution: Antilles Islands (Cuba).
Notes: (1) Holotype pin is empty except for abdominal sterna.
References: (**ec**) Wichmann 1955a: 107. (**ds**) Blackwelder 1947: 784; Blandford 1898b; Bright 1985c: 172; Ferrer 1942; Hagedorn 1910d: 77; Kleine 1913b: 145, 1914b: 352; Wichmann 1955a: 107. (**tx**) Blackman 1922a: 143, 145; Blandford 1898b; Bright 1985c: 172; Eggers 1951: 153; Eichhoff 1878b: 301; Hagedorn 1910a: 119; Schedl 1940a: 339, 1950i: 148–149, 1979c: 16.

***alternatus* Eggers** 1951: 153. Holotype, sex?; Venezuela; Eggers Collection, in NHMW, Wien.
Distribution: South America (Venezuela).
Notes: (1) DEB examined 2 male "cotypes" in NHMW, Wien; obviously 1 of them is the holotype.
References: (**tx**) Eggers 1951: 153; Schedl 1979c: 17.

***alternus* Wood** 1969b: 43. Holotype ♂; 21 km SE Liberia, Guanacaste, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
References: (**ds**) Wood, S. L. 1982b: 631. (**tx**) Wood, S. L. 1969b: 43–44, 1982b: 631.

***atkinsoni* Wood** 1987: 547. Holotype ♂; El Casillo, Veracruz, Mexico; Wood Collection.
Distribution: North America (Veracruz in Mexico).
Hosts: *Acacia pennatula*, *Leucaena pulverulenta*.
References: (**tx**) Wood, S. L. 1987: 547–548.

***beckeri* Heqvist** 1954: 8. Holotype ♀; Chimaltenango, Guatemala; NHR, Stockholm.
Distribution: North America (Guatemala).
Hosts: *Pinus* sp.
References: (**ec**) Becker 1953: 363, 1955. (**hb**)

Becker 1953: 363, 1955. (**ds**) Becker 1953: 363; Wood, S. L. 1982b: 635. (**tx**) Heqvist 1954: 8; Schedl 1955g: 16; Wood, S. L. 1982b: 635.

***biconcavus* Blackman** 1943a: 344. Holotype ♀; Kentucky [USA]; USNM, Washington.
Distribution: North America (Kentucky in USA).
References: (**ds**) Blackwelder & Blackwelder 1948; Wood, S. L. 1982b: 616. (**tx**) Blackman 1943a: 344; Wood, S. L. 1982b: 616.

***bicornus* (Blackman)** 1920a: 23 (*Micracis*). Lectotype ♀; Mendenhall, Mississippi [USA]; USNM, Washington, designated by Wood 1982b: 616.
Distribution: North America (Mississippi in USA).
Hosts: *Carya* sp.
References: (**cn**) Blackman 1950; Doane et al. 1936. (**hb**) Blackman 1922b: 66–67, 1950; Chamberlin 1939: 259; Doane et al. 1936. (**ds**) Blackman 1922b: 66–67, 1950; Chamberlin 1939: 259; Deyrup 1981b: 5; Deyrup & Atkinson 1987b: 67; Drooz 1985: 367; Kleine 1934a: 165; Leng & Mutchler 1927: 52; Wood, S. L. 1982b: 616. (**tx**) Atkinson 1989b: 328; Blackman 1920a: 23, 1922a: 145, 1922b: 66–67, 1928a: 186, 188; Chamberlin 1939: 259; McNamara 1984: 753; Wood, S. L. 1982b: 616.

***bidentatus* Schedl** 1950i: 149. Syntypes ♂ ♀; Brazil, Santa Catharina, Nova Teutonia; Schedl Collection in NHMW, Wien, and Plaumann Collection.
Distribution: South America (Brazil).
Notes: (3) Wood 1972e: 196 (a probable synonym of *retusipennis* Blandford).
References: (**ds**) Schedl 1966f: 86, 1973d: 156, 1976a: 53, 1979e: 58. (**tx**) Schedl 1950i: 149, 1958f: 34, 1959m: 547, 1979c: 39; Wood, S. L. 1972e: 196, 1982b: 635.

***binodatus* Wood** 1974a: 17. Holotype ♀; Nicholson, Mississippi [USA]; USNM, Washington.
Figures: Atkinson et al. 1991: 157 (adult).
Distribution: North America (Illinois, Indiana, Louisiana, Mississippi, Missouri in USA).
Hosts: *Carya* sp.
References: (**hb**) Deyrup & Atkinson 1987a: 65. (**ds**) Atkinson 1989b: 335, 337; Atkinson et al. 1991: 157; Deyrup & Atkinson 1987a: 65, 1987b: 67; Wood, S. L. 1982b: 614. (**tx**) Atkinson 1989b: 328, 335; Wood, S. L. 1974a: 17, 1982b: 614.

***brasiliensis* Nunberg** 1956: 208. Syntypes, sex?; Brasilien: Matto Grosso, Rio Caraguata; Schedl Collection in NHMW, Wien, and Plaumann Collection, automatic.
Distribution: South America (Brazil).
References: (**ds**) Schedl 1976a: 53. (**tx**) Nunberg 1956: 208; Schedl 1960h: 106.
simplex Schedl 1954b: 33. Syntypes, sex?; Brasilien: Matto Grosso, Rio Caraguata; Schedl Collection in NHMW, Wien, and Plaumann Collection, preoccupied by Blandford 1898.
References: (**tx**) Nunberg 1956: 208; Schedl 1954b: 33, 1958k: 144, 1960h: 106, 1979c: 230.
rectus Schedl 1958k: 144. Syntypes, sex?; Brasilien: Matto Grosso, Rio Caraguata; Schedl Collection in NHMW, Wien, and Plaumann Collection, an unneeded replacement name for *simplex* Schedl.
References: (**tx**) Schedl 1958k: 144, 1960h: 106.

***cancellatus* Blandford** 1898b: 221. Lectotype ♂; Quiche Mts., Guatemala, 5–9700 ft.; BMNH, London, designated by Wood 1982b: 627.
Figures: Blandford 1898b: 221.
Distribution: North America (Guatemala).
References: (**ds**) Blackwelder 1947: 784; Hagedorn 1910d: 77; Heqvist 1954; Kleine 1913b: 145, 1914b: 370; Wood, S. L. 1982b: 627. (**tx**) Blandford 1898b: 221; Hagedorn 1910a: 119; Heqvist 1954: 9; Wood, S. L. 1956a: 147, 1969b: 45, 1982b: 627.

***carinifrons* Atkinson** 1989: 331. Holotype ♀; Florida: Suwannee Co., Branford [USA]; USNM, Washington.
Distribution: North America (Florida in USA).
Hosts: *Planera aquatica*.
References: (**tx**) Atkinson 1989: 331.

***clarki* Wood** 1979b: 141. Holotype ♂; between Sicabe and San Miguel Ixtahuacan, San Marcos, Guatemala; Wood Collection.
Distribution: North America (Guatemala).
Hosts: *Pinus tenuifolia*.
References: (**ds**) Wood, S. L. 1982b: 634. (**tx**) Wood, S. L. 1979b: 141, 1982b: 634.

***crotonis* Wood** 1987: 548. Holotype ♂; Estacion de Biologia, Chamela, Jalisco, Mexico; Wood Collection.
Distribution: North America (Jalisco in Mexico).
Hosts: *Croton pseudoniveus*.
References: (**tx**) Wood, S. L. 1987: 548.

***cuspidatus* Eggers** 1951: 153. Holotype ♂; Cuba; Eggers Collection, in NHMW, Wien.
Distribution: Antilles Islands (Cuba).
References: (**ds**) Bright 1985c: 172. (**tx**) Bright 1985c: 172; Eggers 1951: 153; Schedl 1979c: 73.

***denticollis* Schedl** 1976a: 71. Holotype ♂; Encruzilhada, 980 m, Bahia, Brasil; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1976a: 71.

***dilutus* Wood** 1971: 29. Holotype ♂; Volcan Colima, Jalisco, Mexico, 2500 m; Wood Collection.
Distribution: North America (Jalisco, Michoacan in Mexico).
References: (**hb**) Wood, S. L. 1982b: 622. (**ds**) Atkinson & Equihua 1985b: 234; Atkinson et al. 1986: 58; Wood, S. L. 1982b: 622. (**tx**) Wood, S. L. 1971: 29, 1982b: 622.

***dimorphus* (Schedl)** 1939k: 724 (*Micracis*). Syntypes ♂ ♀; Nova Teutonia, Sta. Catharina, Brasilien; Schedl Collection in NHMW, Wien, and Plaumann Collection.
Distribution: South America (Brazil).
References: (**ds**) Blackwelder 1947: 784; Schedl 1966f: 87. (**tx**) Schedl 1939k: 724, 1950i: 284, 1962p: 206; Wood, S. L. 1956a: 152.
acuminatus Schedl 1950i: 148. Holotype ♂; Santa Catarina, Brasil; Schedl Collection in NHMW, Wien. Synonymy: Schedl 1962p: 206.
References: (**hb**) Viana 1964: 126. (**ds**) Viana 1964: 126. (**tx**) Schedl 1950i: 148, 1951h: 284, 1962p: 206, 1979c: 11.

***discifer* Eichhoff** 1878b: 300. Holotype, sex?; America meridionalis (Venezuela); Hamburg Museum, lost.
Distribution: South America (Venezuela).
References: (**ds**) Blackwelder 1947: 784; Hagedorn 1910d: 77; Kleine 1913b: 145, 1914b: 339. (**tx**) Blackman 1922a: 143–145; Eichhoff 1878b: 300; Hagedorn 1910a: 119; Schedl 1950i: 150.

***disparilis* Wood** 1971: 29. Holotype ♂; Zamorano, Morazan, Honduras; Wood Collection.
Distribution: North America (Honduras).
Hosts: *Ficus glabrata*.
References: (**hb**) Wood, S. L. 1982b: 631. (**ds**) Wood, S. L. 1982b: 631. (**tx**) Wood, S. L. 1971: 29–30, 1982b: 631.

***dissidens* Wood** 1971: 30. Holotype ♂; Laguna Santa Maria, Nayarit, Mexico; Wood Collection.
Distribution: North America (Nayarit in Mexico).
Hosts: Liana.
References: (**hb**) Wood, S. L. 1982b: 633. (**ds**) Atkinson & Equihua 1985b: 234; Atkinson et al. 1986: 58; Wood, S. L. 1982b: 633. (**tx**) Wood, S. L. 1971: 30, 1982b: 633.

***dissimilis* Wood** 1984e: 115. Holotype ♂; Estacion de Biologia, Chamela, Jalisco, Mexico; Wood Collection.
Distribution: North America (Jalisco in Mexico).
Hosts: Sapindaceae.
References: (**ec**) Equihua & Atkinson 1986: 627. (**hb**) Equihua & Atkinson 1986: 627. (**ds**) Equihua & Atkinson 1986: 627. (**tx**) Wood, S. L. 1984e: 115.

***dubius* Schedl** 1959m: 547. Syntypes, sex?; Brasilien, Rondon; Schedl Collection in NHMW, Wien, Plaumann Collection, and Strohmeyer Collection, Eberswald.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1959m: 547, 1979c: 85.

***effeminatus* Wood** 1956a: 143. Holotype ♂; 8 km NW Totolapan, Oaxaca, Mexico; SMUK, Lawrence.
Distribution: North America (Oaxaca in Mexico).
Hosts: Leguminous tree.
References: (**ds**) Wood, S. L. 1959a: 59, 1982b: 625. (**tx**) de Ruette 1970: 101; Schedl 1979c: 86; Wood, S. L. 1956a: 143, 1959a: 59, 1982b: 625.

***egenus* Blandford** 1898b: 222. Holotype ♂; Motzorongo, Veracruz, Mexico; BMNH, London.
Distribution: North America (Veracruz in Mexico).
References: (**ds**) Blackwelder 1947: 784; Ferrer 1942; Hagedorn 1910d: 78; Kleine 1913b: 145, 1914b: 352; Wood, S. L. 1982b: 621. (**tx**) Blandford 1898b: 222; Hagedorn 1910a: 119; Schedl 1940a: 339; Wood, S. L. 1982b: 621.

***elegans* Eichhoff** 1872a: 134. Holotype ♂; Teapa, Tabasco, Mexico; IRSNB, Brussels.
Distribution: Antilles Islands (Haiti in Hispanola/ Jamaica), North America (Costa Rica/ Honduras/ Colima, Jalisco, Nayarit, Tabasco in Mexico), South America (Colombia).
Hosts: *Acacia* spp., *Inga* sp., *Coffea arabica*.
References: (**ec**) Equihua & Atkinson 1986: 628. (**hb**) Equihua & Atkinson 1986: 628. (**ds**) Atkinson & Equihua 1985b: 234; Blackwelder 1947: 784; Blandford 1898b: 222–223; Bright 1985c: 172; Equihua & Atkinson 1986: 628; Ferrer 1947; Gemminger & Harold 1872: 2684; Hagedorn 1910d: 78; Kleine 1913b: 145, 1914b: 352; Wood, S. L. 1982b: 632. (**tx**) Blackman 1922a: 143, 145, 1943a: 334; Blandford 1898b: 222–223; Bright 1985c: 172; Eichhoff 1872a: 134, 1878b: 299; Hagedorn 1910a: 119; Hopkins 1914: 123; Lucas 1920: 342; Schedl 1940a: 339, 1950i: 150; Wood, S. L. 1972e: 195, 1982b: 632. (**ms**) Lucas 1920: 342.
minor Wood 1961c: 4. Holotype ♀; Finca Alto Bonito, Caicedonia, Valle de Cauca, Colombia; Wood Collection. Synonymy: Wood 1972e: 195.
References: (**ds**) Bright 1981c: 154. (**tx**) Wood, S. L. 1961c: 4, 1972e: 195.

***equidens* Wood** 1956a: 144. Holotype ♂; Los Abritos, 32 km NE Ciudad del Mais, San Luis Potosi, Mexico; SMUK, Lawrence.
Distribution: North America (San Luis Potosi in Mexico).
References: (**ds**) Atkinson & Equihua 1985b: 234; Wood, S. L. 1982b: 630. (**tx**) de Ruette 1970: 101; Schedl 1979c: 91; Wood, S. L. 1956a: 144, 147, 1982b: 630.

***errans* Blandford** 1898b: 224. Lectotype ♂; "Mexican" [actually Brazilian] tobacco refuse; BMNH, London, designated by Wood 1982b: 625.
Distribution: South America (Brazil).
References: (**ds**) Blackwelder 1947: 784; Ferrer 1942; Hagedorn 1910d: 78; Kleine 1913b: 145, 1914b: 352; Nunberg 1958a: 489; Wood, S. L. 1982b: 625. (**tx**) Blandford 1898b: 224; Hagedorn 1910a: 119; Nunberg 1958a: 489; Schedl 1940a: 340, 1950i: 149; Wood, S. L. 1982b: 625.

***femineus* Wood** 1959a: 59. Holotype ♂; Miller Canyon, Huachuca Mts., Arizona [USA]; Wood Collection.
Distribution: North America (Michoacan in Mexico/ Arizona in USA).

Hosts: *Quercus* sp.
References: (**hb**) Atkinson & Equihua 1985b: 234; Atkinson et al. 1986: 26. (**ds**) Atkinson & Equihua 1985b: 234, 1988: 90; Atkinson et al. 1986: 26; Kirkendall 1984: 241; Wood, S. L. 1959a: 59, 1969b: 44, 1982b: 624. (**tx**) Wood, S. L. 1959a: 59, 1982b: 624.

***flagellatus* Wood** 1971: 32. Holotype ♀; Rancho Grande, Pittier National Park, Aragua, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Nectandra* sp.
References: (**tx**) Wood, S. L. 1971: 32.

***flaglerensis* Blackman** 1943a: 345. Holotype ♀; Flagler Co., Florida [USA]; USNM, Washington.
Distribution: North America (Florida in USA).
References: (**ds**) Blackwelder & Blackwelder 1948; Wood, S. L. 1982b: 620. (**tx**) Blackman 1943a: 345; Wood, S. L. 1982b: 620.

***floridensis* Atkinson** 1989: 333. Holotype ♀; Florida: Suwannee Co., Branford [USA]; USNM, Washington.
Distribution: North America (Florida in USA).
Hosts: *Planera aquatica*.
References: (**tx**) Atkinson 1989: 333.

***giganteus* (Schedl)** 1950i: 152 (*Micracis*). Syntypes, sex?; Brazil: Santa Catarina, Nova Teutonia; Schedl Collection in NHMW, Wien, and Plaumann Collection.
Distribution: South America (Brazil).
Notes: (1) Schedl 1979c: 104 (citation of holotype invalid).
References: (**tx**) Schedl 1950i: 152, 1979c: 104.

***harnedi* (Blackman)** 1920a: 24 (*Micracis*). Lectotype ♀; Mendenhall, Mississippi [USA]; USNM, Washington, designated by Wood 1982b: 616.
Figures: Blackman 1920a:pl. 1, fig. 4 (female antenna), pl. 5, figs. 47–48, 1922b:pl. 6, figs. 33–34.
Distribution: North America (Mississippi in USA).
Hosts: *Carya* sp.
References: (**cn**) Blackman 1950. (**hb**) Blackman 1950; Chamberlin 1939: 259. (**ds**) Blackman 1950; Chamberlin 1939: 259; Drooz 1985: 367; Kleine 1934a: 165; Leng & Mutchler 1927: 52; Wood, S. L. 1982b: 616. (**tx**) Blackman 1920a: 24, 1922a: 145, 1922b: 66–67, 1928a: 145; Chamberlin 1939: 259; Wood, S. L. 1982b: 616.

***hirtellus* (LeConte)** 1876: 369 (*Micracis*). Holotype ♀; southern California [USA]; MCZ, Cambridge.
Figures: Bright & Stark 1973: 157 (adult).
Distribution: North America (British Columbia in Canada/ Baja California in Mexico/ California, Oregon, Washington in USA).
Hosts: *Alnus* sp., *Arbutus menzeisii, Ceanothus* sp., *Myrica* sp., *Populus* sp., *Quercus* sp., *Rhamnus* sp., *Rhus* sp., *Salix* sp., *Umbellularia* sp.
Notes: (3) Blackman 1920a: 27 (redescribed).
References: (**cn**) Armitage et al. 1953: 218; Doane et al. 1936; Keen 1938: 132; Packard 1890: 671; Struble & Hall 1954: 933. (**ec**) Keen 1938: 132. (**hb**) Bright 1976d: 105; Bright & Stark 1973: 64; Chamberlin 1939: 252, 1958: 121; Doane et al. 1936; Keen 1938: 132. (**ds**) Blaisdell 1892: 36; Bright 1976d: 105; Bright & Skidmore 1991: 368; Bright & Stark 1973: 65; Chamberlin 1939: 252, 1958: 121; Fall 1906: 202; Furniss, R. L. & Carolin 1977: 382; Hagedorn 1882: 269; Henshaw 1882: 269, 1885: 148; Keen 1938: 132; Kleine 1913b: 145, 1914b: 391, 1934a: 165; Leng 1920: 339; Patterson & Hatch 1945: 162; Rivers 1886: 67; Swaine 1909: 127; Wood, S. L. 1972a: 413, 1982b: 623. (**tx**) Blackman 1920a: 27–28, 1922b: 145, 1928a: 192–193; Bright 1966b: 304, 1976d: 105; Bright & Stark 1973: 157; Chamberlin 1939: 252, 1958: 121; Hagedorn 1910a: 117; LeConte 1876: 369; LeConte & Horn 1883: 517; Swaine 1909: 127; Wood, S. L. 1966b: 24, 1972a: 413, 1982b: 623.

crinitus Blackman 1943a: 347. Holotype ♂; Orange, California [USA]; USNM, Washington. Synonymy: Bright 1966b: 304.
References: (**ds**) Blackwelder & Blackwelder 1948; Bright 1966b: 304; Nunberg 1958a: 489. (**tx**) Blackman 1943a: 347; Bright 1966b: 304; Nunberg 1958: 489.

***impar* Schedl** 1939k: 723. Holotype ♂; Brazil, Sta. Catarina; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
Notes: (3) Schedl 1950i: 151 (described female).
References: (**ds**) Blackwelder 1947: 784; Nunberg 1958a: 489; Schedl 1966f: 87, 1973d: 156. (**tx**) Nunberg 1958a: 489; Schedl 1939k: 723, 1950i: 151, 1951h: 284, 1954b: 30, 1959m: 548, 1979c: 122; Wood, S. L. 1956a: 142.

***inaequalis* Wood** 1956a: 146. Holotype ♂; 9 km S Tehuantepec, Oaxaca, Mexico; SMUK, Lawrence.
Distribution: North America (Colima, Nayarit, Oaxaca in Mexico).
Hosts: *Acacia* sp., *Inga paterno*.
References: (**cn**) Estrada & Atkinson 1988: 205. (**ec**) Equihua & Atkinson 1986: 628. (**hb**) Equihua & Atkinson 1986: 628. (**ds**) Equihua & Atkinson 1986: 628; Estrada & Atkinson 1988: 205; Wood, S. L. 1982b: 631. (**tx**) de Ruette 1970: 101; Schedl 1979c: 123; Wood, S. L. 1956a: 146, 1959a: 43, 1982b: 631.

***incomptus* Wood** 1969b: 44. Holotype ♂; Volcan de Agua, Esquintla, Guatemala, 1000 m; Wood Collection.
Figures: Wood 1969b: 44.
Distribution: North America (Guatemala/ Chiapas in Mexico).
Hosts: *Quercus* sp.
References: (**hb**) Burgos & Saucedo 1983: 92; Wood, S. L. 1982b: 618. (**ds**) Atkinson & Equihua 1985a: 84; Burgos & Saucedo 1983: 92; Wood, S. L. 1982b: 618. (**tx**) Wood, S. L. 1969b: 44, 1982b: 618.

***intermedius* Schedl** 1952a: 458. Syntypes, sex?; Argentina, Tigre and Pilar; Schedl Collection in NHMW, Wien, and Viana Collection.
Distribution: South America (Argentina).
References: (**hb**) Viana 1964: 126. (**ds**) Schedl 1976a: 53; Viana 1964: 126. (**tx**) Schedl 1951h: 284, 1952a: 458, 1958f: 34, 1979c: 126; Wood, S. L. 1969b: 44.

***interpositus* Schedl** 1976a: 71. Holotype, sex?; Encruzilhada, 930 m, Bahia, Brasil; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1976a: 71.

***interruptus* Schedl** 1959m: 548. Holotype ♂; Nova Teutonia; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1959m: 548, 1979c: 127.

***langstoni* Blackman** 1920a: 26. Lectotype ♀; Agricultural College [Starkville], Mississippi [USA]; USNM, Washington, designated by Wood 1982b: 628.
Figures: Blackman 1920a:pl. 1, fig. 5, (female antenna), pl. 2, fig. 17, pl. 3, fig. 42, pl. 5, figs. 45–46, 1922b:pl. 6, figs. 31–37.
Distribution: North America (Florida, Maryland, Mississippi, South Carolina, Texas, Virginia in USA).
Hosts: *Celtis pallida, C.* sp., *Gleditsea triacanthos, Morus rubra., Ulmus* sp.
References: (**bv**) Baker, W. L. 1972: 253. (**cn**) Baker, W. L. 1972: 253; Blackman 1950; Doane et al. 1936. (**hb**) Baker, W. L. 1972: 253; Blackman 1950; Chamberlin 1939: 260; Deyrup & Atkinson 1987a: 65; Doane et al. 1936; Kirkendall 1984: 238. (**ds**) Blackman 1950; Chamberlin 1939: 260; Deyrup & Atkinson 1987a: 65; Drooz 1985: 367; Hoffmann 1940: 60, 1942: 12; Kleine 1934a: 165; Leng & Mutchler 1927: 52; Wood, S. L. 1982b: 628. (**tx**) Blackman 1920a: 26, 1922a: 145, 1928a: 186, 190, 1943a: 345–346; Chamberlin 1939: 260; Wood, S. L. 1982b: 628.

***longipennis* Wood** 1979b: 141. Holotype ♂; 5 km W El Salto, Durango, Mexico; Wood Collection.
Distribution: North America (Durango in Mexico).
Hosts: *Quercus* sp.
References: (**ds**) Wood, S. L. 1982b: 624. (**tx**) Wood, S. L. 1979b: 141, 1982b: 624.

***medius* Wood** 1956a: 144. Holotype ♂; 8 km W Antiguo Morelos, Tamaulipas, Mexico; SMUK, Lawrence.
Distribution: North America (San Luis Potosi, Tamaulipas in Mexico).
References: (**ds**) Wood, S. L. 1982b: 628. (**tx**) de Ruette 1970: 101; Schedl 1979c: 150; Wood, S. L. 1956a: 144, 1982b: 628.

***micaceus* Wood** 1984e: 116. Holotype ♂; Estacion de Biologia, Chamela, Jalisco, Mexico; Wood Collection.
Distribution: North America (Jalisco in Mexico).
References: (**ec**) Equihua & Atkinson 1986: 628. (**hb**) Equihua & Atkinson 1986: 628. (**ds**) Equihua & Atkinson 1986: 628. (**tx**) Wood, S. L. 1984e: 116.

***microcornis* Wood** 1969b: 45. Holotype ♂; 26 km E Texmelucan, Puebla, Mexico; Wood Collection.
Distribution: North America (Puebla in Mexico).
Hosts: *Salix* sp.
References: (**hb**) Atkinson et al. 1986: 27. (**ds**) Atkinson & Equihua 1985a: 84; Atkinson et al. 1986: 27; Wood, S. L. 1982b: 630. (**tx**) Wood, S. L. 1969b: 45, 1982b: 630.

***nodulus* Wood** 1956a: 141. Holotype ♂; Pujal, San Luis Potosi, Mexico; SMUK, Lawrence.
Distribution: North America (Costa Rica/ Honduras/ Jalisco, San Luis Potosi in Mexico).
Hosts: *Bambusa vulgaris,* and native bamboo.
References: (**hb**) Atkinson et al. 1986: 58. (**ds**) Atkinson et al. 1986: 58. Schedl 1977e: 42; Wood, S. L. 1982b: 620. (**tx**) de Ruette 1970: 101; Schedl 1979c: 171; Wood, S. L. 1956a: 141, 1982b: 620.

***obtusipennis* Schedl** 1976a: 72. Holotype ♀; Encruzilhada, 980 m, Bahia, Brasil; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1976a: 72.

***parkinsoniae* Blackman** 1922a: 142. Holotype ♂; Ray, Arizona [USA]; USNM, Washington.
Figures: Blackman 1922a:figs. 1–4.
Distribution: North America (Arizona, S California, W Texas in USA).
Hosts: *Celtis laevigatus, Cercidium* spp., *Condalia obtusifolia, Mimosa* sp., *Quercus* sp.
References: (**cn**) Doane et al. 1936. (**hb**) Bright & Stark 1973: 64; Chamberlin 1939: 261; Doane et al. 1936. (**ds**) Bright & Stark 1973: 64; Chamberlin 1939: 261; Furniss, R. L. & Carolin 1977: 382; Keen 1929a: 26; Kleine 1934a: 165; Leng & Mutchler 1927: 52; Wood, S. L. 1982b: 626. (**tx**) Blackman 1922a: 142, 1928a: 187, 190–191, 195–196; Chamberlin 1939: 261; Keen 1929a: 26; de Ruette 1970: 102; Schedl 1979c: 185; Wood, S. L. 1956a: 144, 1982b: 626.

***pilosus* Schedl** 1950i: 151. Lectotype ♀; Brazil, Nova Teutonia; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 194.
Distribution: South America (Brazil).
References: (**hb**) Viana 1964: 126. (**ds**) Nunberg 1958a: 489; Viana 1964: 126. (**tx**) Nunberg 1958a: 489–490; Schedl 1950i: 151, 1952a: 456, 1954b: 33, 1958f: 34, 1979c: 194.

***prolatus* Wood** 1982a: 228. Holotype ♂; Zacapoaxia, Puebla, Mexico; Wood Collection.
Distribution: North America (Puebla in Mexico).
Hosts: *Carya* sp.
References: (**tx**) Wood, S. L. 1982a: 228.

***pseudoimpar* Schedl** 1954b: 30. Syntypes, sex?; Brasilien: Nova Teutonia; Schedl Collection in NHMW, Wien, and Plaumann Collection.
Distribution: South America (Brasil).
Notes: (1) Schedl 1979c: 201 (citation of holotype invalid).
References: (**ds**) Nunberg 1958a: 489. (**tx**) Nunberg 1958a: 489–490; Schedl 1954b: 30, 1979c: 201.

***punctatorugosus* (Schedl)** 1948h: 575 (*Micracis*). Holotype ♀; Mexico, Michoacan, Mexico; Schedl Collection in NHMW, Wien.
Distribution: North America (Michoacan in Mexico).
Notes: (1) Wood 1982b: 635 (to *Hylocurus*).
References: (**ds**) Wood, S. L. 1982b: 635. (**tx**) Schedl 1948h: 575, 1979c: 204; Wood, S. L. 1982b: 635.

***quadrispinosus* Blackman** 1928a: 191. Holotype ♂; Cayamas, Cuba; USNM, Washington.
Distribution: Antilles Islands (Cuba).
References: (**ds**) Blackwelder 1947: 784; Bright 1985c: 172. (**tx**) Blackman 1928a: 191; Bright 1985c: 172.

***retusipennis* Blandford** 1898b: 223. Holotype ♂; "Mexican" [actually Brazilian] tobacco refuse intercepted at Paris, France; BMNH, London.
Distribution: South America (Brazil).
Notes: (3) Wood 1972e: 190 (*bidentatus* Schedl is an apparent synonym), 1982b: 635 (all Blandford 1898b species named from "Mexican" tobacco refuse are actually from Brazil).
References: (**ec**) Wichmann 1955a: 107. (**ds**) Blackwelder 1947: 784; Ferrer 1942; Hagedorn 1910d: 78; Kleine 1913b: 145, 1914b: 352; Wichmann 1955a: 107. (**tx**) Blackman 1943a: 345–346; Blandford 1898b: 223; Hagedorn 1910a: 119; Schedl 1940a: 339; Wood, S. L. 1956a: 144, 1972e: 190, 1982b: 635.

***rivalis* Wood** 1974a: 16. Holotype ♂; 5 km N Suchixtepec, Oaxaca, Mexico; CNCI, Ottawa.
Distribution: North America (Oaxaca in Mexico).
Hosts: *Pinus* sp.
References: (**ds**) Wood, S. L. 1982b: 626. (**tx**) McNamara 1984: 753; Wood, S. L. 1974a: 16, 1982b: 626.

***robustus* Schedl** 1952a: 456. Syntypes, sex?; Brazil: Nova Teutonia, Argentina: Misiones; Schedl Collection in NHMW, Wien, Viana, and Plaumann Collections.
Distribution: South America (Argentina/ Brazil).
Notes: (1) Schedl 1979c: 212 (citation of holotype invalid).
References: (**hb**) Viana 1964: 126. (**ds**) Viana 1964: 126. (**tx**) Schedl 1952a: 456, 1960h: 106, 1979c: 212; Wood, S. L. 1956a: 141.

stachi Nunberg 1958: 487. Holotype ♂; St. Catarina; IZW, Warsaw. Synonymy: Schedl 1960h: 106.
References: (**tx**) Nunberg 1958: 487; Schedl 1960h: 106.

***ruber* Wood** 1956a: 142. Holotype ♂; 32 km NE Ciudad del Mais, San Luis Potosi, Mexico; SMUK, Lawrence.
Distribution: North America (San Luis Potosi in Mexico).
Hosts: *Robinia* sp.
References: (**ds**) Wood, S. L. 1982b: 622. (**tx**) de Ruette 1970: 102; Wood, S. L. 1956a: 142, 1982b: 622.

***rudis* (LeConte)** 1876: 369 (*Micracis*). Holotype ♀?; Detroit, Michigan [USA]; MCZ, Cambridge.
Figures: Atkinson 1989b: 328, Blackman 1920a:pl. 1, figs. 1–2 (female antenna), pl. 2, figs. 12–13, pl. 4, figs. 37–39, 1922b:pl. 7, fig. 35.
Distribution: North America (District of Columbia, Georgia, Kansas, Kentucky, Maryland, Michigan, New Jersey, Ohio, Pennsylvania, E Texas, Virginia in USA).
Hosts: *Carya* spp., *Castanea dentata, Fagus grandifolia, Quercus velutina, Ulmus americana*.
Notes: (3) Blackman 1920a: 20 (redescribed).
References: (**cn**) Blackman 1950; Doane et al. 1936; Packard 1890: 612. (**ec**) Felt 1906: 725. (**hb**) Baker, W. L. 1972: 252; Beal & Massey 1945: 95–97; Blackman 1950; Bright 1976d: 106; Chamberlin 1939: 258; Chittenden 1890; Doane et al. 1936; Deyrup & Atkinson 1987a: 65; Felt 1906: 725; Packard 1890: 612; Pierce, W. D. 1907: 292. (**ds**) Anonymous 1926c: 517; Atkinson 1989b: 327; Atkinson et al. 1991: 158; Beal & Massey 1945: 96–97; Blackman 1950; Blatchley & Leng 1916: 648; Bright 1976d: 106; Chamberlin 1939: 258; Chittenden 1890; Deyrup 1981b: 5; Deyrup & Atkinson 1987a: 65; Drooz 1985: 367; Hagedorn 1910d: 78; Hamilton 1895: 346, 378; Henshaw 1882: 269, 1885: 148; Hubbard & Schwarz 1878a: 666; Kirk 1970; Kleine 1913b: 145, 1914b: 401, 1934a: 165; Leng 1920: 339; Leonard 1928: 517; Swaine 1909: 127. (**tx**) Atkinson 1989b: 327, 328; Beal & Massey 1945: 96–97; Blackman 1920a: 19–22, 1922a: 145, 1922b: 65–67, 1928a: 186–187, 1943a: 345; Blatchley & Leng 1916: 648; Bright 1976d: 106; Chamberlin 1939: 258; Hagedorn 1910a: 117; LeConte 1876: 369; Lucas 1920: 411; Schwarz 1891: 74; Swaine 1909: 127, 1918a: 83; Wood, S. L. 1972a: 196, 1982b: 614. (**ms**) Lucas 1920: 411.

biorbis Blackman 1920a: 22 (*Micracis*). Holotype ♂; Syracuse, New York [USA]; USNM, Washington. Synonymy: Wood 1972e: 196.
References: (**cn**) Blackman 1950; Doane et al. 1936. (**hb**) Beal & Massey 1945: 97–98; Blackman 1950; Bright 1976d: 106; Chamberlin 1939: 258; Doane et al. 1936. (**ds**) Anonymous 1926c: 516; Beal & Massey 1945: 97–98; Blackman 1950; Bright 1976d: 106; Chamberlin 1939: 258; Hoffmann 1940: 60, 1942: 12; Kleine 1934a: 165; Leng & Mutchler 1927: 52; Leonard 1928: 516; Rhodes 1924: 150. (**tx**)

Beal & Massey 1945: 97–98; Blackman 1920a: 22–23, 1922a: 145, 1922b: 68, 1924: 150–151, 1928a: 145, 186–188; Bright 1976d: 106; Chamberlin 1939: 258; Wood, S. L. 1972e: 196.

***schwarzi* Blackman** 1928a: 189. Holotype ♂; Victoria, Texas [USA]; USNM, Washington.
Distribution: North America (W Texas in USA).
References: (**hb**) Chamberlin 1939: 260. (**ds**) Chamberlin 1939: 260; Leng & Mutchler 1933: 53; Wood, S. L. 1982b: 625. (**tx**) Blackman 1928a: 189; Chamberlin 1939: 260; Wood, S. L. 1982b: 625.

***scitulus* Wood** 1984e: 116. Holotype ♂; Estacion de Biologia, Chamela, Jalisco, Mexico; Wood Collection.
Distribution: North America (Jalisco in Mexico).
Hosts: *Acacia* sp.
References: (**ec**) Equihua & Atkinson 1986: 628. (**hb**) Equihua & Atkinson 1986: 628. (**ds**) Atkinson & Equihua 1986: 628; Equihua & Atkinson 1986: 628. (**tx**) Wood, S. L. 1984e: 116.

***secus* Wood** 1984e: 116. Holotype ♂; Estacion de Biologia, Chamela, Jalisco, Mexico; Wood Collection.
Distribution: North America (Jalisco in Mexico).
Hosts: Leguminosae.
References: (**ec**) Equihua & Atkinson 1986: 628. (**hb**) Equihua & Atkinson 1986: 628. (**ds**) Equihua & Atkinson 1986: 628. (**tx**) Wood, S. L. 1984e: 116.

***simplex* Blandford** 1898b: 222. Holotype ♂; El Tumbador, San Marcos, Guatemala; BMNH, London.
Distribution: North America (Guatemala/Panama).
Hosts: *Inga* sp.
References: (**hb**) Wood, S. L. 1982b: 621. (**ds**) Blackwelder 1947: 784; Hagedorn 1910d: 78; Heqvist 1954: 9; Kleine 1913b: 145, 1914b: 370; Schedl 1977e: 42; Wood, S. L. 1982b: 621. (**tx**) Blandford 1898b: 222; Hagedorn 1910a: 119; Schedl 1958k: 144, 1960h: 106, 1979c: 230; Wood, S. L. 1982b: 621.

***singularis* Wood** 1971: 31. Holotype ♀; 8 km SW Bumbum, Barinas, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
References: (**tx**) Wood, S. L. 1971: 31.

***spadix* Blackman** 1928a: 188. Holotype ♀; Tryon, North Carolina [USA]; USNM, Washington.
Distribution: North America (North Carolina, Pennsylvania in USA).
Hosts: *Carya* sp.
References: (**cn**) Blackman 1950; Doane et al. 1936. (**hb**) Beal & Massey 1945: 97; Blackman 1950; Chamberlin 1939: 260; Doane et al. 1936. (**ds**) Beal & Massey 1945: 97; Blackman 1950; Chamberlin 1939: 260; Drooz 1985: 367; Kleine 1934a: 165; Leng & Mutchler 1933: 53; Wood, S. L. 1982b: 618. (**tx**) Beal & Massey 1945: 97; Blackman 1928a: 188; Chamberlin 1939: 260; Wood, S. L. 1982b: 618.

***spinifex* Blandford** 1904: 225. Lectotype ♂; "Mexican" [actually Brazilian] tobacco refuse; BMNH, London, designated by Wood 1982b: 636.
Distribution: South America (Brazil).
References: (**ds**) Blackwelder 1947: 784; Ferrer 1942; Hagedorn 1910d: 78; Kleine 1913b: 145, 1914b: 352. (**tx**) Blandford 1904: 225; Hagedorn 1910a: 119; Schedl 1940a: 340; Wood, S. L. 1956a: 146, 1982b: 636.

***subgranulatus* Schedl** 1954b: 31. Syntypes ♀; Brasilien, Matto Grosso, Rio Caraguata; Schedl Collection in NHMW, Wien, and Plaumann Collection.
Distribution: South America (Brazil).
Notes: (1) Schedl 1979c: 241 (citation of holotype invalid).
References: (**ds**) Nunberg 1958a: 489; Schedl 1966g: 86, 1970e: 83, 1976a: 53. (**tx**) Nunberg 1958a: 489; Schedl 1954b: 31, 1979c: 241.

***torosus* Wood** 1971: 28. Holotype ♀; Florence, South Carolina [USA]; Wood Collection.
Distribution: North America (Alabama, Illinois, Indiana, Maryland, North Carolina, South Carolina in USA).
Hosts: *Acer* sp., *Carya* sp., *Castanea dentata*, *Celtis* sp.
References: (**bv**) Roling & Kearby 1975b, 1977; Turnbow & Franklin 1980. (**cn**) Roling & Kearby 1977. (**ec**) Roling & Kearby 1977. (**ds**) Deyrup & Atkinson 1986: 628; Turnbow & Franklin 1980; Wood, S. L. 1982b: 615. (**tx**) Wood, S. L. 1971: 28, 1982b: 615.

***trispinatus* Schedl** 1978c: 301. Holotype ♂; Brasilien, Nova Teutonia; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1978c: 301.

***vagabundus* Blandford** 1898b: 224. Holotype ♀; Mexican [actually Brazilian] tobacco refuse; BMNH, London.
Distribution: South America (Brazil).
References: (**ec**) Wichmann 1955a: 107. (**ds**) Blackwelder 1947: 784; Ferrer 1942; Hagedorn 1910a: 78; Kleine 1913b: 145, 1914b: 336, 352; Wichmann 1955a: 107. (**tx**) Blandford 1898b: 224; Hagedorn 1910a: 119; Schedl 1940a: 340.

***verrucosus* Wood** 1971: 28. Holotype ♂; 9 km S Barrancas, Barinas, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Inga* sp.
References: (**tx**) Wood, S. L. 1971: 28.

***vianai* Schedl** 1952a: 457. Syntypes, sex?; Argentina, Buenos Aires, Tigre; Schedl Collection in NHMW, Wien, and Viana Collection.
Distribution: South America (Argentina).

Notes: (1) Schedl 1979c: 267 (citation of holotype invalid).
References: (**hb**) Viana 1964: 126. (**ds**) Viana 1964: 126. (**tx**) Schedl 1952a: 457, 1958f: 34, 1979c: 267.

***villifrons* Wood** 1971: 30. Holotype ♀; Rancho Grande, Pittier National Park, Aragua, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: Guttiferae sp.
References: (**tx**) Wood, S. L. 1971: 30–31.

Genus *Phloeocurus* Wood

PHLOEOCURUS WOOD 1984b: 230. Type-species: *Hylocurus africanus* Schedl, original designation.
References: (**hb**) Wood, S. L. 1986a: 65. (**ds**) Wood, S. L. 1986a: 65. (**tx**) Wood, S. L. 1984b: 230, 1986a: 65.

***africanus* (Schedl)** 1957e: 875 (*Hylocurus*). Holotype ♀; Kenya, Kampi ya Moto; BMNH, London.
Distribution: Africa (Kenya).
Hosts: *Acacia xanthophylla*.
References: (**ds**) Schedl 1962j: 34, 1975k: 277. (**tx**) Schedl 1957e: 875, 1962j: 34, 1979c: 14; Wood, S. L. 1984b: 230.

Genus *Pseudomicracis* Eggers

PSEUDOMICRACIS EGGERS 1920: 36. Type-species: *Pseudomicracis elsae* Eggers, monobasic.
References: (**hb**) Wood, S. L. 1986a: 65. (**ds**) Wood, S. L. 1986a: 65. (**tx**) Eggers 1920: 36; Schedl 1962j: 51; Wood, S. L. 1986a: 65.

***bugekeae* (Schedl)** 1957d: 69 (*Hylocurus*). Holotype, sex?; Congo Belge: Kivu, Hembe-Bitale; MRCB, Tervuren.
Distribution: Africa (Zaire).
Hosts: *Carpodinus subrepanda*, *Hypericum lanceolatum*.
References: (**hb**) Schedl 1962j: 34. (**ds**) Schedl 1962j: 34. (**tx**) Schedl 1957d: 69, 1957e: 875, 1962j: 34–35, 69, 1979c: 49.

***camerunus* (Hagedorn)** 1909a: 743 (*Araptus*). Holotype, sex?; Kamerun; Hamburg Museum, lost.
Distribution: Africa (Cameroon).
References: (**ds**) Hagedorn 1910d: 77; Kleine 1913b: 145, 1914b: 310. (**tx**) Hagedorn 1909a: 743, 1910a: 111; Schedl 1962j: 28–29.

***difficilis* (Schedl)** 1965c: 64 (*Micracis*). Holotype ♂; Madagascar, Perinet; Schedl Collection in NHMW, Wien.
Distribution: Madagascar.
References: (**tx**) Schedl 1965c: 64, 1977b: 124, 1979c: 80.

***elsae* Eggers** 1920: 36. Holotype ♀?; Dares-Salaam, Ostafrika; Hamburg Museum, lost.
Distribution: Africa (Tanzania).
References: (**tx**) Eggers 1920: 36; Schedl 1962j: 52.

***harunganae* (Schedl)** 1961e: 140 (*Micracis*). Holotype ♀; Madagascar, Perinet and Ambila; IRSM, Madagascar.
Distribution: Madagascar.
Hosts: *Harungana madagascariensis*.
References: (**hb**) Schedl 1977b: 123. (**ds**) Schedl 1977b: 124. (**tx**) Schedl 1961e: 140, 1977b: 124, 1979c: 115.

***ignotus* (Schedl)** 1965c: 62 (*Micracis*). Holotype, sex?; Madagascar, Montagne d'Ambre; IRSM, Madagascar.
Distribution: Madagascar.
References: (**tx**) Schedl 1965c: 62, 1977b: 125, 1979c: 120.

***madagascariensis* (Schedl)** 1961e: 139 (*Micracis*). Holotype ♀; Madagascar, Perinet; IRSM, Madagascar.
Distribution: Madagascar.
References: (**hb**) Schedl 1977b: 125. (**ds**) Schedl 1977b: 125. (**tx**) Schedl 1961e: 139, 1977b: 125, 1979c: 144.

***pennatus* (Schedl)** 1965c: 63 (*Micracis*). Holotype ♂; Madagascar, Sandrangato; IRSM, Madagascar.
Distribution: Madagascar.
References: (**tx**) Schedl 1965c: 63, 1977b: 125, 1979c: 187.

Genus *Micracisella* Blackman

MICRACISELLA BLACKMAN 1928a: 192. Type-species: *Micracis opacicollis* LeConte, automatic.
Pseudomicracis Blackman 1920a: 20. Type-species: *Micracis opacicollis* LeConte, original designation, preoccupied by Eggers 1920.
References: (**tx**) Blackman 1920a: 20, 1922a: 66, 1928a: 192.
Keys: Wood 1982b: 594.
References: (**hb**) Wood, S. L. 1986a: 65. (**ds**) Wood, S. L. 1986a: 65. (**tx**) Beal & Massey 1945: 59, 99; Blackman 1920b, 1928a: 192, 1943a: 341–342, 350; Wood, S. L. 1956c: 231–232, 1982b: 594–608, 1986a: 65.

***adnata* Wood** 1971: 24. Holotype ♀; 14 km E Huatusco, Veracruz, Mexico; Wood Collection.
Distribution: North America (Veracruz in Mexico).
Hosts: *Quercus* sp.
References: (**ds**) Wood, S. L. 1982b: 597. (**tx**) Wood, S. L. 1971: 24–25, 1982b: 597.

***divaricata* Wood** 1969b: 39. Holotype ♀; 2 km N Cerro Gordo, Veracruz, Mexico; Wood Collection.
Distribution: North America (Morelos, Veracruz in Mexico).
Hosts: *Serjania* sp.
References: (**hb**) Atkinson et al. 1986: 58; Burgos & Saucedo 1983: 90. (**ds**) Atkinson et al. 1986: 58; Burgos & Saucedo 1983: 90; Wood, S. L. 1969b: 39, 1982b: 608. (**tx**) Wood, S. L. 1969b: 39, 1982b: 608.

***hondurensis* Wood** 1956b: 233. Holotype ♀; Olanchito, Yoro, Honduras; Wood Collection.
Distribution: North America (Chiapas in Mexico/ Honduras).
Hosts: Shrub.
References: (**ds**) Wood, S. L. 1982b: 602. (**tx**) Wood, S. L. 1956b: 233, 1969b: 36, 1982b: 602.

***knulli* (Blackman)** 1943a: 348 (*Micracis*). Holotype ♀; Huachuca Mountains, Arizona [USA]; USNM, Washington.
Figures: Blackman 1943a:figs.5–6.
Distribution: North America (Hidalgo, Michoacan in Mexico/ Arizona in USA).
Hosts: *Quercus* spp., *Salix* sp.
References: (**ds**) Blackwelder & Blackwelder 1948; Furniss, R. L. & Carolin 1977: 382; Wood, S. L. 1959a: 61, 1982b: 599. (**tx**) Blackman 1943a: 348; Wood, S. L. 1956b: 231, 1959a: 61, 1959b: 2, 1982b: 599.

***mimetica* Wood** 1974a: 15. Holotype ♂; 5 km N Suchixtepec on Highway 175, Oaxaca, Mexico; CNCI, Ottawa.
Distribution: North America (Oaxaca in Mexico).
Hosts: Mistletoe on *Quercus* sp.
References: (**ds**) Wood, S. L. 1982b: 599. (**tx**) McNamara 1984: 753; Wood, S. L. 1974a: 15, 1982b: 599.

***monadis* Wood** 1969b: 36. Holotype ♀; Volcan Colima, Jalisco, Mexico; Wood Collection.
Distribution: North America (Jalisco in Mexico).
Hosts: *Struthanthus venetus*.
References: (**ds**) Wood, S. L. 1982b: 604. (**tx**) Wood, S. L. 1969b: 36–37, 1982b: 604.

***nanula* (LeConte)** 1876: 368 (*Micracis*). Holotype ♀; Haulover, Florida [USA]; MCZ, Cambridge.
Distribution: Antilles Islands (Bahamas Islands), North America (Florida, Georgia, Louisiana, Mississippi, South Carolina, Texas in USA).
Hosts: *Acras sapota, Conocarpus erecta, Dipholia salicifolia, Mimosa* sp., *Pithecellobium guadeloupense, Prosopis* sp., *Quercus* sp., *Rhizophora mangle, Vitis* sp.
Notes: (3) Blackman 1920a: 34 (redescribed).
References: (**bv**) Atkinson, Foltz, & Connor 1988; Roling & Kearby 1975b, 1977. (**cn**) Blackman 1950; Doane et al. 1936; Roling & Kearby 1977. (**ec**) Roling & Kearby 1977. (**hb**) Atkinson, Foltz, & Connor 1988; Deyrup & Atkinson 1987a: 65. (**ds**) Blackman 1950; Blatchley & Leng 1916: 648; Bright 1985c: 172; Chamberlin 1939: 255; Deyrup & Atkinson 1987a: 65; Hagedorn 1910d: 78; Henshaw 1882: 269, 1885: 148; Kirk 1969, 1970; Kleine 1913b: 145, 1914b: 384, 1934a: 166; Leng 1920: 339; Schwarz 1878d: 469; Swaine 1909: 127; Wood, S. L. 1982b: 602. (**tx**) Blackman 1922a: 144–145, 1922b: 34–35, 1928a: 192, 197, 1943a: 350; Blatchley & Leng 1916: 648; Bright 1985c: 172; Chamberlin 1939: 255; Hagedorn 1910a: 117; LeConte 1876: 368, 1878a: 469; Schedl 1940a: 340; Schwarz 1878: 469; Swaine 1909: 127; Wood, S. L. 1982b: 602.

***nigra* Wood** 1956b: 232. Holotype ♀; La Ceiba, Atlantida, Honduras; Wood Collection.
Distribution: North America (Honduras), South America (Colombia).
References: (**ds**) Estrada & Atkinson 1988: 205; Wood, S. L. 1961c: 1, 1982b: 607. (**tx**) Wood, S. L. 1956b: 232, 1961c: 1, 1969b: 37, 1982b: 607.

***nigrella* Wood** 1969b: 37. Holotype ♀; Volcan de Agua, Esquintla, Guatemala; Wood Collection.
Distribution: North America (Guatemala).
Hosts: *Rhus* sp.
References: (**ds**) Wood, S. L. 1982b: 607. (**tx**) Wood, S. L. 1969b: 37–38, 1982b: 607.

***nitidula* Wood** 1969b: 37. Holotype ♀; 10 km NE Teziutlan, Puebla, Mexico; Wood Collection.
Figures: Atkinson et al. 1986: 28 (adult).
Distribution: North America (Chiapas, Michoacan, Oaxaca, Puebla in Mexico).
Hosts: *Arbutus* sp., *Rubus* sp.
References: (**hb**) Atkinson et al. 1986: 27; Burgos & Saucedo 1983: 90. (**ds**) Atkinson & Equihua 1985a: 83, 1985b: 234; Atkinson et al. 1986: 29; Burgos & Saucedo 1983: 90; Wood, S. L. 1982b: 601. (**tx**) Atkinson et al. 1986: 28; Muskus, A. 1984: 85; Wood, S. L. 1969b: 37, 1982b: 601.

***ocellata* Wood** 1974a: 16. Holotype ♂; 5 km N Suchixtepec on Highway 175, Oaxaca, Mexico; CNCI, Ottawa.
Distribution: North America (Oaxaca in Mexico).
Hosts: *Arbutus* sp.
References: (**ds**) Wood, S. L. 1982b: 600. (**tx**) McNamara 1984: 753; Wood, S. L. 1974a: 16, 1982b: 600.

***opacicollis* (LeConte)** 1878b: 625 (*Micracis*). Holotype ♀; Detroit, Michigan [USA]; MCZ, Cambridge.
Figures: Blackman 1920a:pl. 1, fig. 11 (female antenna), pl. 2, fig. 22.
Distribution: North America (District of Columbia, Illinois, Kansas, Massachusetts, Michigan, Minnesota, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Virginia, West Virginia in USA).
Hosts: *Carya* sp., *Castanea dentata, Hamamelis virginiana, Quercus alba, Q. falcata*.
Notes: (3) Blackman 1920a: 33 (redescribed).
References: (**bv**) Turnbow & Franklin 1980. (**cn**) Blackman 1950; Doane et al. 1936; Felt 1906: 702; Smith, J. B. 1900: 363. (**hb**) Baker, W. L. 1972: 253; Beal & Massey 1945: 94–100; Blackman 1922b: 70–71, 1950; Bright 1976d: 108; Chamberlin 1939: 254; Doane et al. 1936. (**ds**) Anonymous 1926c: 517; Beal & Massey 1945: 94–100; Blackman 1922b: 70–71, 1950; Blatchley & Leng 1916: 648; Bright 1976d: 108; Chamberlin 1939: 254; Dodge 1938; Drooz 1985: 367; Hagedorn 1910d: 78; Henshaw 1882: 269, 1885: 148; Hoffmann

1942: 12; Hubbard & Schwarz 1878a: 666, 1878b: 625; Kleine 1913b: 145, 1914b: 398, 1934a: 166; Knull 1932: 66; Leng 1920: 339; Leonard 1928: 57; Smith, J. B. 1900: 363, 1910: 403; Swaine 1909: 127; Turnbow & Franklin 1980; Ulke 1902: 56; Weber, B. C. & McPherson 1991: 54; Wood, S. L. 1982b: 603. (**tx**) Beal & Massey 1945: 94–100; Blackman 1920a: 33–34, 1922a: 144–145, 1922b: 70–71, 1928a: 3–6, 197, 1943a: 350; Blatchley & Leng 1916: 648; Bright 1976d: 108; Chamberlin 1939: 254; Dodge 1938: 32, 34; Hagedorn 1910a: 117; LeConte 1878b: 625; Nunberg 1956: 138; Schedl 1940a: 340; Swaine 1909: 127, 1918a: 83; Wood, S. L. 1982b: 603.

asperulus LeConte 1878b: 626 (*Micracis*). Lectotype ♀; Detroit [USA]; MCZ, Cambridge, designated by Wood 1982b: 603. Synonymy: Blackman 1928a: 196.

References: (**cn**) Smith, J. B. 1900: 363. (**ds**) Anonymous 1926c: 517; Blackman 1920a: 8–9, 34, 1922b: 70, 1928a: 196–197, 1943a: 350; Hagedorn 1910d: 78; Henshaw 1882: 269; LeConte 1878b: 626; Leng 1920: 339; Leonard 1928: 517; Notman 1920: 184; Smith, J. B. 1900: 363, 1910: 403; Swaine 1909: 127. (**tx**) Blackman 1928a: 196; LeConte 1878b: 626; Wood, S. L. 1982b: 603.

***opacithorax* (Schedl)** 1940a: 340 (*Micracis*). Lectotype ♀; Mexico: Temulipez: Metamores: Vercenez: Carde; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 179.

Distribution: North America (Tamaulipas, Veracruz in Mexico/ W Texas in USA).

Hosts: *Mimosa* sp., *Prosopis* sp.

References: (**ds**) Blackwelder 1947: 784; Ferrer 1942; Schedl 1963c: 158; Wood, S. L. 1982b: 603. (**tx**) Blackman 1943a: 350; Schedl 1940a: 340, 1979c: 179; Wood, S. L. 1956b: 233, 1982b: 603.

***scitula* Wood** 1969b: 37. Holotype ♂; 14 km E Huatusco, Veracruz, Mexico; Wood Collection.

Distribution: North America (Veracruz in Mexico).

Hosts: *Quercus* sp.

References: (**ds**) Wood, S. L. 1982b: 601. (**tx**) Wood, S. L. 1969b: 37, 1982b: 601.

***serjaniae* Wood** 1971: 25. Holotype ♀; Zamorano, Morazan, Honduras; Wood Collection.

Distribution: North America (Honduras).

Hosts: *Serjania racemosa*.

References: (**ds**) Wood, S. L. 1982b: 604. (**tx**) Wood, S. L. 1971: 25, 1982b: 604.

***similis* Wood** 1969b: 38. Holotype ♀; Volcan Ceboruco, Nayarit, Mexico; Wood Collection.

Distribution: North America (Nayarit in Mexico).

Hosts: *Serjania* sp.

References: (**ds**) Wood, S. L. 1982b: 605. (**tx**) Wood, S. L. 1969b: 38, 1982b: 605.

***squamatula* Wood** 1969b: 38. Holotype ♀; 10 km S Huajuapan, Oaxaca, Mexico; Wood Collection.

Distribution: North America (Oaxaca, Puebla in Mexico).

Hosts: *Serjania* sp.

References: (**ds**) Wood, S. L. 1982b: 606. (**tx**) Wood, S. L. 1969b: 38, 1982b: 606.

***striata* Wood** 1956b: 231. Holotype ♀; Olanchito, Yoro, Honduras; Wood Collection.

Distribution: North America (Honduras/ Oaxaca in Mexico).

Hosts: *Serjania* sp. and other lianas.

References: (**ds**) Wood, S. L. 1982b: 604. (**tx**) Wood, S. L. 1956b: 231, 1982b: 604.

***subnitida* Blackman** 1943a: 350. Holotype ♂; Santa Rica Mts., Arizona [USA]; USNM, Washington.

Figures: Blackman 1943a:figs. 7–8.

Distribution: North America (Arizona, New Mexico in USA).

References: (**ds**) Blackwelder & Blackwelder 1948; Furniss, R. L. & Carolin 1977: 383; Wood, S. L. 1982b: 597. (**tx**) Blackman 1943a: 350; Wood, S. L. 1982b: 597.

***vescula* Wood** 1969b: 38. Holotype ♀; 2 km N Cerro Gordo, Veracruz, Mexico; Wood Collection.

Distribution: North America (Veracruz in Mexico).

Hosts: *Serjania* sp.

References: (**ds**) Wood, S. L. 1982b: 606. (**tx**) Wood, S. L. 1969b: 38, 1982b: 606.

Genus *Micracis* LeConte

MICRACIS LECONTE 1868: 164. Type-species: *Micracis suturalis* LeConte, subsequent designation by Hopkins 1914: 125.

Keys: Wood 1982b: 579.

References: (**ay**) Nobuchi 1969a: 54. (**hb**) Wood, S. L. 1986a: 65. (**ds**) Wood, S. L. 1986a: 65. (**tx**) Beal & Massey 1945: 48, 51, 59, 98–99; Blackman 1920a: 5–20, 1922a: 143–145, 1922b: 65–66, 1928a: 192, 1943a: 341–342, 346, 1950: 295, 299, 324–326; Blandford 1898b: 219–220; Blatchley & Leng 1916: 581, 584, 646; Blackwelder 1947: 784; Bright 1978: 107; Chamberlin 1939: 249–252, 1958: 120–121; Dodge 1938: 17, 33; Eichoff 1878b: 35, 57, 302; Hagedorn 1910a: 116–117, 1910d: 78; Hopkins 1914: 125–136; 1915c: 184–195, 204–205; LeConte 1868: 164, 1876: 368; LeConte & Horn 1883: 519; Schedl 1940a: 340, 1961e: 139, 1962p: 206, 1977b: 122; Swaine 1918a: 44, 83; Wood, S. L. 1961a: 45, 1982b: 578–594, 1986a: 65.

***acutipennis* Eichhoff** 1878b: 302. Holotype ♂; America meridionalis (Bahia); IRSNB, Brussels.

Distribution: South America (Brazil).

References: (**ds**) Blackwelder 1947: 784; Hagedorn 1910d: 78; Kleine 1913b: 145. (**tx**) Eichhoff 1878b: 302; Hagedorn 1910a: 117; Nunberg 1936: 139.

***amplinis* Wood** 1971: 25. Holotype ♂; 5 km W El Salto, Durango, Mexico; Wood Collection.

Figures: Atkinson et al. 1986: 28 (adult).

Distribution: North America (Durango, Hidalgo, Morelos in Mexico).
Hosts: *Quercus* sp.
References: (**hb**) Atkinson et al. 1986: 27; Burgos & Saucedo 1983: 86. (**ds**) Atkinson & Equihua 1985a: 83, 1985b: 234; Atkinson et al. 1986: 27; Burgos & Saucedo 1983: 86; Wood, S. L. 1982b: 583. (**tx**) Atkinson et al. 1986: 28; Wood, S. L. 1971: 25, 1982b: 583.

***burgosi* Wood** 1982a: 228. Holotype ♂; Cuernavaca, Morelos, Mexico; Wood Collection.
Figures: Burgos & Saucedo 1983: 89.
Distribution: North America (Morelos in Mexico).
Hosts: *Delonix regia*.
References: (**hb**) Atkinson et al. 1986: 58; Burgos & Saucedo 1983: 87. (**ds**) Atkinson & Equihua 1985b: 234; Atkinson et al. 1986: 58; Burgos & Saucedo 1983: 87. (**tx**) Burgos & Saucedo 1983: 28, 89; Wood, S. L. 1982a: 228.

***carinulatus* Wood** 1960b: 62. Holotype ♀; Cave Creek Canyon, Chiricahua Mts., Arizona [USA]; Wood Collection.
Distribution: North America (Arizona in USA).
Hosts: *Salix* sp.
References: (**ds**) Furniss, R. L. & Carolin 1977: 382; Wood, S. L. 1982b: 593. (**tx**) Wood, S. L. 1960b: 62, 1969b: 39, 1982b: 593.

***carinulus* Wood** 1969b: 40. Holotype ♀; Playon, Puntarenas Prov., Costa Rica; Wood Collection.
Distribution: North America (Costa Rica/ Panama).
Hosts: *Rheedia edulis*.
References: (**hb**) Wood, S. L. 1982b: 590. (**ds**) Wood, S. L. 1982b: 590. (**tx**) Wood, S. L. 1969b: 40, 1982b: 590.

***cubensis* Blackman** 1928a: 193. Holotype ♀; Cayamas, Cuba; USNM, Washington.
Distribution: Antilles Islands (Cuba).
Hosts: Juccaro amarillo.
References: (**ds**) Blackwelder 1947; Bright 1985c: 172; Kleine 1934a: 165. (**tx**) Blackman 1928a: 193; Bright 1985c: 172; Wood, S. L. 1956a: 149.

***detentus* Wood** 1969b: 42. Holotype ♀; 24 km S Mazamitla, Jalisco, Mexico; Wood Collection.
Distribution: North America (Chiapas, Chihuahua, Jalisco in Mexico).
Hosts: *Salix* sp., etc.
References: (**hb**) Atkinson et al. 1986: 27, 58. (**ds**) Atkinson et al. 1986: 27, 58; Wood, S. L. 1982b: 589. (**tx**) Wood, S. L. 1969b: 42, 1982b: 589.

***evanescens* Wood** 1956a: 152. Holotype ♀; 48 km SW El Salto, Durango, Mexico; SMUK, Lawrence.
Distribution: North America (Durango, Michoacan, Oaxaca, Sinaloa in Mexico).
Hosts: *Quercus* spp.
References: (**hb**) Atkinson et al. 1986: 27; Burgos & Saucedo 1983: 96. (**ds**) Atkinson et al. 1986: 27; Burgos & Saucedo 1983: 86; Thomas, J. B. 1966; Wood, S. L. 1982b: 586. (**tx**) de Ruette 1970: 104; Wood, S. L. 1956a: 152, 1969b: 42, 1982b: 586.

***exilis* Wood** 1971: 27. Holotype ♀; 9 km S Barrancas, Barinas, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Acalypha* sp. and Espinito de Sabana.
References: (**tx**) Wood, S. L. 1971: 27.

***festivus* Wood** 1969b: 43. Holotype ♀; Zamorano, Morazan, Honduras; Wood Collection.
Distribution: North America (Chiapas, Veracruz in Mexico/ Honduras).
Hosts: *Calliandra houstoniana, Celtis iguanae*.
References: (**ds**) Atkinson & Equihua 1988: 92; Wood, S. L. 1982b: 592. (**tx**) Wood, S. L. 1969b: 43, 1982b: 592.

***grandis* Schedl** 1948h: 575. Holotype ♀; Mexico, Chiapas, San Jose de Ixtepec; Schedl Collection in NHMW, Wien.
Distribution: North America (Costa Rica/ Honduras/ Chiapas in Mexico).
Hosts: *Calliandra confusa, Salix guatemalensis*.
References: (**ds**) Wood, S. L. 1982b: 588. (**tx**) Schedl 1948h: 575, 1979c: 109; Wood, S. L. 1974d: 283, 1982b: 588.

costaricensis Wood 1969b: 39. Holotype ♀; Volcan Poas, Heredia Prov., Costa Rica; Wood Collection. Synonymy: Wood 1974d: 283.
References: (**tx**) Wood, S. L. 1969b: 39, 1974d: 283.

***incertus* Wood** 1971: 26. Holotype ♀; 37 km W Durango, Durango, Mexico, 2000 m; Wood Collection.
Distribution: North America (Durango in Mexico).
Hosts: *Quercus* sp.
References: (**ds**) Wood, S. L. 1982b: 584. (**tx**) Wood, S. L. 1971: 26, 1982b: 584.

***inimicus* Wood** 1969b: 42. Holotype ♀; Volcan de Agua, Esquintla, Guatemala; Wood Collection.
Distribution: North America (Guatemala).
Hosts: Shrub.
References: (**ds**) Wood, S. L. 1982b: 591. (**tx**) Wood, S. L. 1969b: 42–43, 1982b: 591.

***lepidus* Wood** 1969b: 41. Holotype ♀; Cerro Punta Chiriqui, Panama; Wood Collection.
Distribution: North America (Panama).
Hosts: *Inga* sp.
References: (**hb**) Wood, S. L. 1982b: 584. (**ds**) Wood, S. L. 1982b: 584. (**tx**) Wood, S. L. 1969b: 41, 1982b: 584.

***lignator* Blackman** 1928a: 195. Holotype ♀; Tucson, Arizona [USA]; USNM, Washington.
Distribution: North America (Durango, Hidalgo, Oaxaca, Queretaro, Tlaxcala in Mexico/ Arizona in USA).
Hosts: *Quercus* spp.
References: (**cn**) Doane et al. 1936. (**hb**) Atkinson

et al. 1986: 27; Burgos & Saucedo 1983: 85; Chamberlin 1939: 254; Doane et al. 1936. (**ds**) Atkinson & Equihua 1985a: 83; Atkinson et al. 1986: 27; Burgos & Saucedo 1983: 85; Chamberlin 1939: 254; Furniss, R. L. & Carolin 1977: 382; Kleine 1934a: 164; Leng & Mutchler 1933: 53; Wood, S. L. 1959a: 60, 1982b: 582. (**tx**) Blackman 1928a: 195–198, 1943a: 348; Chamberlin 1939: 254; Wood, S. L. 1959a: 60, 1969b: 41, 1973c: 178, 1982b: 582.

truncatus Wood 1956a: 152. Holotype ♀; 17 km NE Jacala, Hidalgo, Mexico; SMUK, Lawrence. Synonymy: Wood 1973c: 178.
References: (**ds**) Wood, S. L. 1959a: 60. (**tx**) de Ruette 1970: 104; Wood, S. L. 1956a: 152, 1959a: 60, 1973c: 178.

***lignicolus* Wood** 1969b: 41. Holotype ♂; Cerro Pena Blanca, Honduras; Wood Collection.
Distribution: North America (Guatemala/ Honduras/ Chiapas in Mexico).
Hosts: *Miconia schlectendalii, Quercus sapotaefolia, Q. williamsii.*
References: (**ds**) Wood, S. L. 1982b: 582. (**tx**) Wood, S. L. 1969b: 41, 1982b: 582.

***longula* Nunberg** 1956a: 135. Holotype ♀?; Brazil, Badenfurt; IZW, Warsaw.
Distribution: South America (Brazil).
References: (**tx**) Nunberg 1956a: 135.

***ovatus* Wood** 1956a: 150. Holotype ♀; 8 km NE Teziutlan, Puebla, Mexico; SMUK, Lawrence.
Distribution: North America (Puebla in Mexico).
References: (**hb**) Wood, S. L. 1982b: 586. (**ds**) Wood, S. L. 1982b: 586. (**tx**) de Ruette 1970: 104; Wood, S. L. 1956a: 150, 1982b: 586.

***sentus* Wood** 1971: 28. Holotype ♂; El Laurel Experimental Farm, 12 km SW Caracas, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
References: (**tx**) Wood, S. L. 1971: 28.

***suturalis* LeConte** 1868: 165. Lectotype ♀; Illinois [USA]; MCZ, Cambridge, designated by Wood 1973c: 179.
Figures: Blackman 1922b:pl. 7, figs. 37–38.
Distribution: North America (Illionois, E Kansas, Louisiana, Maryland, Michigan, Mississippi, New York, Ohio, Pennsylvania, Virginia, West Virginia in USA).
Hosts: *Cercis canadensis.*
References: (**cn**) Blackman 1950; Doane et al. 1936; Finnegan 1954: 312; Packard 1890: 660; Smith, J. B. 1900: 363. (**hb**) Baker, W. L. 1972: 253; Blackman 1950; Bright 1976d: 107; Chamberlin 1939: 252; Chittenden 1893a; Deyrup & Atkinson 1987a: 65; Doane et al. 1936; Hamilton 1891: 65; Kirkendall 1984: 238; Pierce, W. D. 1907: 292; Riley 1891a: 131, 1892b: 268. (**ds**) Anonymous 1926c: 517; Blackman 1950; Blatchley & Leng 1916: 647; Bright 1976d: 107; Britton 1920a; Chamberlin 1939: 252; Deyrup 1981b: 5; Deyrup & Atkinson 1987a: 65; Frost & Dietrich 1929; Gemminger & Harold 1872: 2692; Hagedorn 1910d: 78; Hamilton 1891: 65, 1895a: 148; Henshaw 1882: 269, 1885: 148; Hoffmann 1942: 12; Hubbard & Schwarz 1878a: 666; Kleine 1913b: 145, 1934a: 165; Leng 1920: 339; Leonard 1928: 517; Packard 1890: 660; Riley 1891a: 131; Shimer 1869: 7–8; Smith, J. B. 1900: 363, 1910: 403; Swaine 1909: 127; Ulke 1902: 56; Wood, S. L. 1982b: 591. (**tx**) Anonymous 1891: 94; Blackman 1920a: 28–29, 1922a: 144–145, 1922b: 69, 1928a: 192–195; Blatchley & Leng 1916: 647; Bright 1976d: 107; Chamberlin 1939: 252; Eichhoff 1878b: 303; Hagedorn 1910a: 117; Hamilton 1891: 131, 1892; Hopkins 1914: 125, 1915c: 186; LeConte 1868: 164–165, 1876: 368; Nunberg 1956: 138; Schedl 1948h: 575; Swaine 1909: 127, 1918a: 40; 1920a: 31; Wood, S. L. 1960b: 62, 1973e: 179, 1982b: 591. (**ms**) Essig 1931: 685.

aculeatus LeConte 1868: 165. Lectotype ♂; southern States [USA]; MCZ, Cambridge, designated by Wood 1982b: 591. Synonymy: Chittenden 1893: 394; Blackman 1920a: 29.
References: (**hb**) Chittenden 1893: 394; Felt 1906: 715; Hamilton 1891: 65, 1892: 268; Riley 1891a: 131, 1891b: 94, 1892b: 268. (**ds**) Gemminger & Harold 1872: 2692; Hagedorn 1910d: 78; Henshaw 1882: 269, 1885: 148; Kleine 1913b: 145; Leng 1920: 339; Riley 1891a: 131; Swaine 1909: 127. (**tx**) Anonymous 1891: 94; Blackman 1920a: 29, 1928a: 194–195, 1943a: 348; Eichhoff 1878b: 304; Hagedorn 1910a: 117; LeConte 1868: 164, 1876: 368, 1881: 22; Lucas 1920: 411; Swaine 1909: 127–128. (**ms**) Lucas 1920: 411.

meridianus Blackman 1920a: 29. Lectotype ♀; Agricultural College [Starkville], Mississippi [USA]; USNM, Washington, designated by Wood 1973c: 179. Synonymy: Wood 1973c: 179.
References: (**cn**) Blackman 1950; Doane et al. 1936. (**hb**) Blackman 1922b, 1950; Chamberlin 1939: 253; Doane et al. 1936. (**ds**) Blackman 1922b, 1950; Chamberlin 1939: 253; Kleine 1934a: 165; Leng & Mutchler 1927: 52. (**tx**) Blackman 1920a: 29, 1922a: 145, 1922b: 69–70; Chamberlin 1939: 253; Wood, S. L. 1973c: 179.

***swainei* Blackman** 1920a: 32. Lectotype ♀; Iuka, Mississippi [USA]; USNM, Washington, designated by Wood 1973c: 178.
Figures: Blackman 1920a:pl. 1, figs. 9–10, 1922b:pl. 7, fig. 36, Bright 1976d: 202, 209.
Distribution: Antilles Islands (Cuba), North America (Ontario in Canada/ Honduras/ Chiapas, Jalisco, Nayarit, San Luis Potosi, Sinaloa, Vera Cruz in Mexico/ S California, District of Columbia, Florida, Georgia, E Kansas, Louisiana, Maryland, Mississippi, New York, Pennsylvania, Tennessee, Texas, West Virginia in USA).

Hosts: *Baccharus* sp., *Celtis iguanae*, *Cercis canadensis*, *Inga* sp., *Miconia* sp., *Populus* sp., *Salix* spp., *Trichlia arborea*, ect.
Notes: (3) Schedl 1948h: 576 (*mexicanus*, nomen nudum).
References: (**cn**) Blackman 1950; Doane et al. 1936. (**ec**) Bushing 1965: 462. (**hb**) Baker, W. L. 1972: 253; Beal & Massey 1945: 48; Blackman 1922b: 66, 1950; Bright 1976d: 107; Bright & Stark 1973: 65; Burgos & Saucedo 1983: 87; Chamberlin 1939: 255; Deyrup & Atkinson 1987a: 65; Doane et al. 1936. (**ds**) Beal & Massey 1945: 48; Blackman 1922b: 66, 1950; Bright 1976d: 107, 1981c: 155, 1985c: 172; Bright & Stark 1973: 65; Burgos & Saucedo 1983: 87; Chamberlin 1939: 255; Deyrup 1981b: 5; Deyrup & Atkinson 1987a: 65; Dodge 1938; Drooz 1985: 366; Estrada & Atkinson 1988: 205; Kleine 1934a: 165; Leng & Mutchler 1927: 52; Wood, S. L. 1957c: 399, 1982b: 558. (**tx**) Beal & Massey 1945: 48; Blackman 1920a: 32, 1922a: 145, 1922b: 66, 1928a; Bright 1976d: 107, 202, 209, 1985c: 172; Chamberlin 1939: 255; Dodge 1938: 16, 33; Nunberg 1954: 138; de Ruette 1970: 104; Wood, S. L. 1957c: 399, 1973c: 178, 1974d: 283, 1982b: 558.

populi Blackman 1920a: 31. Holotype ♀; Ithaca, New York [USA]; CNCI, Ottawa. Synonymy: Wood 1957c: 399.
References: (**cn**) Blackman 1950; Doane et al. 1936. (**hb**) Blackman 1950; Chamberlin 1939: 254; Doane et al. 1936. (**ds**) Anonymous 1926c: 517; Blackman 1950; Chamberlin 1939: 254; Kleine 1934a: 165; Leng & Mutchler 1927: 52; Leonard 1927: 517. (**tx**) Blackman 1920a: 31, 1922a: 145, 1928a; Bright 1967b: 676; Chamberlin 1939: 254; Nunberg 1956: 158; de Ruette 1970: 104; Swaine 1920a: 31; Wood, S. L. 1957c: 399.

robustus Schedl 1948h: 576. Holotype ♂; Mexico, Esmeralda, Chiapas; Schedl Collection in NHMW, Wien. Synonymy: Wood 1974d: 283.
References: (**tx**) Schedl 1948h: 576, 1979c: 212; Wood, S. L. 1974d: 283.

pygmaeus Schedl 1948h: 577. Holotype ♂; Mexico, Chiapas [Huehuetan]; Schedl Collection in NHMW, Wien. Synonymy: Wood 1974d: 283.
References: (**tx**) Schedl 1948h: 577, 1979c: 209; Wood, S. L. 1974d: 283.

photophilus Wood 1956a: 149. Holotype ♀; El Salto, San Luis Potosi, Mexico; SMUK, Lawrence. Synonymy: Wood 1973c: 178.
References: (**tx**) Wood, S. L. 1956a: 149, 1973c: 178.

***torus* Wood** 1971: 26. Holotype ♀; Volcan Colima, Jalisco, Mexico; Wood Collection.
Distribution: North America (Jalisco in Mexico).
Hosts: Leguminous tree.
References: (**hb**) Wood, S. L. 1982b: 585. (**ds**) Wood, S. L. 1982b: 585. (**tx**) Wood, S. L. 1971: 26–27, 1982b: 585.

***tribulatus* Wood** 1969b: 40. Holotype ♀; 26 km W Texmelucan, Puebla, Mexico; Wood Collection.
Distribution: North America (Puebla in Mexico).
Hosts: *Salix* sp.
References: (**ds**) Wood, S. L. 1982b: 593. (**tx**) Wood, S. L. 1969b: 40, 1982b: 593.

***unicornis* Wood** 1969b: 42. Holotype ♂; 6 km W Quiroga, Michoacan, Mexico; Wood Collection.
Distribution: North America (Michoacan in Mexico).
References: (**hb**) Atkinson et al. 1986: 29. (**ds**) Atkinson & Equihua 1985a: 83; Atkinson et al. 1986: 29; Wood, S. L. 1982b: 590. (**tx**) Wood, S. L. 1969b: 42, 1982b: 590.

***vitulus* Wood** 1971: 27. Holotype ♀; Carbonera Experimental Forest, 50 km NW Merida, Merida, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: Tree seedling.
References: (**tx**) Wood, S. L. 1971: 27.

Tribe Cactopinini Chamberlin

Cactopinae
References: Chamberlin 1939: 243.

Cactopinini
References: Wood, S. L. 1978a: 113, 1982b: 66, 1986a: 65–66.

Genus *Cactopinus* Schwarz

CACTOPINUS SCHWARZ 1899: 11. Type-species: *Cactopinus hubbardi* Schwarz, monobasic.
Cactopinorus Bright 1967a: 918. Type-species: *Cactopinus cactophthorus* Wood, original designation. Synonymy: Wood 1969a: 42.
References: (**tx**) Bright 1967a: 918; Wood, S. L. 1969a: 42.
Keys: Blackman 1938c: 151, Bright 1967a: 919, Wood 1969a: 43, 1982b: 638.
References: (**hb**) Wood, S. L. 1986a: 66. (**ds**) Wood, S. L. 1986a: 66. (**tx**) Arnett 1960: 1042, 1968: 1042; Blackman 1920a: 1–7, 1938c: 151–152; Bright 1967a: 918; Bright & Stark 1973: 60; Chamberlin 1939: 243–246; Hagedorn 1910a: 109, 1910d: 69; Schwarz 1899: 11; Swaine 1909: 87, 1918a: 44; Wood, S. L. 1957d: 105, 1967a: 37–57, 1969a: 42–51, 1982b: 637–648, 1986a: 66.

***atkinsoni* Wood** 1983a: 651. Holotype ♂; Estacion de Biologia, Chamela, Jalisco, Mexico; Wood Collection.
Distribution: North America (Jalisco in Mexico).
Hosts: *Pachycerus* sp.
References: (**ec**) Equihua & Atkinson 1986: 629. (**hb**) Equihua & Atkinson 1986: 629. (**ds**) Equihua & Atkinson 1986: 629. (**tx**) Wood, S. L. 1983a: 651.

***burjosi* Wood** 1983a: 651. Holotype ♂; Tepenene, Puebla, Mexico; Wood Collection.
Distribution: North America (Puebla in Mexico).
Hosts: *Neobuxbaumia mezealensis*.
References: (**hb**) Atkinson et al. 1986: 60. (**ds**) Atkinson et al. 1986: 60. (**tx**) Wood, S. L. 1983a: 651.

***cactophthorus* Wood** 1957d: 105. Holotype ♂; 16 km SE Tehuitzingo, Puebla, Mexico; SMUK, Lawrence.
Figures: Bright 1967a: 920 (declivity).
Distribution: North America (Puebla in Mexico).
Hosts: Giant cactus (? *Cereus* sp.).
References: (**hb**) Wood, S. L. 1982b: 641. (**ds**) Bright 1967a: 919; Wood, S. L. 1982b: 641. (**tx**) Bright 1967a: 919–920; Wood, S. L. 1957d: 105, 1969a: 44, 49, 1982b: 641.

***carinatus* Wood** 1969a: 50. Holotype ♂; 26 km N Ixmiquilpan, Hidalgo, Mexico; Wood Collection.
Figures: Wood 1969a: 50 (male frons, elytral declivity).
Distribution: North America (Hidalgo in Mexico).
Hosts: Giant cactus (? *Cereus* sp.).
References: (**ds**) Wood, S. L. 1982b: 644. (**tx**) Wood, S. L. 1969a: 44, 50, 1982b: 644.

***depressus* Bright** 1967a: 921. Holotype ♂; 73 km N San Luis Potosi, San Luis Potosi, Mexico; CNCI, Ottawa.
Figures: Bright 1967a: 920 (declivity).
Distribution: North America (Hidalgo, San Luis Potosi in Mexico).
Hosts: *Yucca* sp. leaves.
Notes: (3) Wood 1969a: 51 (described female).
References: (**hb**) Wood, S. L. 1969a: 51, 1982b: 644. (**ds**) Bright 1967a: 921; Wood, S. L. 1982b: 644. (**tx**) Bright 1967a: 920–921; de Ruette 1970: 98; Wood, S. L. 1969a: 44, 51, 1982b: 644.

***desertus* Bright** 1967a: 923. Holotype ♂; 11 km S Ocotillo Wells, Anza-Borrego Desert State Park, San Diego Co., California [USA]; CAS, San Francisco.
Figures: Bright 1967a: 920, Bright & Stark 1973: 155 (adult).
Distribution: North America (Baja California Sur in Mexico/ S California in USA).
Hosts: *Bursera microphylla*.
References: (**ay**) Lanier 1967a: 83, 1968a: 4168. (**hb**) Bright & Stark 1973: 60; Wood, S. L. 1982b: 648. (**ds**) Atkinson & Equihua 1988: 85; Bright & Stark 1973: 60; Furniss, R. L. & Carolin 1977: 375; Wood, S. L. 1982b: 648. (**tx**) Bright 1967a: 920–924; Bright & Stark 1973: 155; de Ruette 1970: 98; Wood, S. L. 1969a: 45, 1982b: 648.

***granulatus* Wood** 1983a: 651. Holotype ♂; Autlan, carr. Barra de Navidad Km 163, Jalisco, Mexico; Wood Collection.
Distribution: North America (Jalisco in Mexico).
Hosts: Cactaceae sp.
References: (**hb**) Atkinson & Equihua 1985b: 235. (**ds**) Atkinson & Equihua 1985b: 235, 1988: 86. (**tx**) Wood, S. L. 1983a: 651.

***granulifer* Wood** 1969a: 48. Holotype ♂; 10 km S Huajuapan, Oaxaca, Mexico, 2000 m; Wood Collection.
Figures: Wood 1969a: 48 (male frons, declivity).
Distribution: North America (Oaxaca in Mexico).
Hosts: Giant cactus (? *Cereus* sp.).
References: (**hb**) Wood, S. L. 1982b: 642. (**ds**) Wood, S. L. 1982b: 642. (**tx**) Wood, S. L. 1969a: 44, 48, 1982b: 642.

***hubbardi* Schwarz** 1899: 11. Lectotype ♂; Tucson, Arizona [USA]; USNM, Washington, designated by Wood 1982b: 647.
Figures: Bright 1967a: 920 (declivity).
Distribution: North America (S Arizona in USA).
Hosts: *Carnegiea gigantea*.
Notes: (3) Blackman 1938c: 152 (redescribed).
References: (**hb**) Chamberlin 1939: 243–245; Schwarz 1899: 5, 11, 1901a: 368; Wood, S. L. 1982b: 647. (**ds**) Blackwelder 1939; Bright 1967a: 922; Chamberlin 1939: 243–245; Furniss, R. L. & Carolin 1977: 375; Hagedorn 1910a: 69; Keen 1929a:

26; Kleine 1913b: 139, 1914b: 388, 1934a: 158; Leng 1920: 339; Swaine 1909: 87; Wood, S. L. 1982b: 647. (**tx**) Blackman 1920: 6, 1938c: 151–154; Bright 1967a: 920, 922; Chamberlin 1939: 243–245; Hagedorn 1910a: 109, 1910d: 69; Hopkins 1914: 117; Keen 1929a: 26; Schedl 1979c: 119; Schwarz 1899: 5, 11; Swaine 1909: 87; Wood, S. L. 1967a: 37, 1969a: 42, 45, 1982b: 647.

***koebelei* Blackman** 1938c: 156. Holotype ♂; Argus Mountains, Inyo County, California [USA]; USNM, Washington.
Figures: Bright 1967a: 920 (declivity).
Distribution: North America (Baja California Norte in Mexico/ S California, W Utah in USA).
Hosts: *Pinus monophylla, P. lambertiana*.
References: (**hb**) Bright & Stark 1973: 61; Chamberlin 1939: 246; Wood, S. L. 1982b: 645. (**ds**) Blackwelder 1939; Bright 1967a: 921; Bright & Stark 1973: 61; Chamberlin 1939: 246; Furniss, R. L. & Carolin 1977: 375; Wood, S. L. 1982b: 645. (**tx**) Blackman 1938c: 152, 156–157; Bright 1967a: 920–921; Chamberlin 1939: 246; Wood, S. L. 1969a: 44, 1982b: 645.

***mexicanus* Wood** 1967a: 37. Holotype ♂; 21 km N Juchitlan, Jalisco, Mexico; Wood Collection.
Figures: Bright 1967a: 920 (declivity), Wood 1969a: 46 (male frons, elytral declivity).
Distribution: North America (Jalisco in Mexico).
Hosts: Giant cactus (? *Pachycereus pectenaboriginum*).
References: (**hb**) Wood, S. L. 1967a: 37, 1969a: 43, 45, 1982b: 640. (**ds**) Bright 1967a: 919; Wood, S. L. 1982b: 640. (**tx**) Bright 1967a: 919–920; Wood, S. L. 1967a: 37, 1969a: 43, 45–46, 1982b: 640.

***microcornis* Wood** 1969a: 45. Holotype ♂; 10 km S Huajuapan, Oaxaca, Mexico; Wood Collection.
Figures: Wood 1969a: 46 (male frons, elytral declivity).
Distribution: North America (Oaxaca in Mexico).
Hosts: Giant cactus (? *Cereus* sp.).
References: (**hb**) Wood, S. L. 1982b: 640. (**ds**) Wood, S. L. 1982b: 640. (**tx**) Wood, S. L. 1969a: 43–46, 1982b: 640.

***nasutus* Wood** 1969a: 49. Holotype ♂; 16 km S Matamoros, Puebla, Mexico; Wood Collection.
Figures: Wood 1969a: 49 (male frons, declivity).
Distribution: North America (Oaxaca, Puebla in Mexico).
Hosts: Giant cactus (? *Cereus* sp.).
References: (**ds**) Wood, S. L. 1982b: 643. (**tx**) Wood, S. L. 1969a: 44, 49, 1982b: 643.

***niger* Wood** 1969a: 46. Holotype ♂; 32 km S Huajuapan, Oaxaca, Mexico; Wood Collection.
Figures: Wood 1969a: 47 (male frons, elytral declivity).
Distribution: North America (Oaxaca in Mexico).
Hosts: Giant cactus (? *Cereus* sp.).
References: (**ds**) Wood, S. L. 1982b: 641. (**tx**) Wood, S. L. 1969a: 44, 46–47, 1982b: 641.

***pini* Blackman** 1938c: 153. Holotype ♂; Griffen, Kern County, California [USA]; USNM, Washington.
Figures: Bright 1967a: 920 (declivity).
Distribution: North America (S California, W Nevada in USA).
Hosts: *Pinus jeffreyi, P. monophylla*.
References: (**hb**) Bright & Stark 1973: 62; Chamberlin 1939: 245–246. (**ds**) Blackwelder 1939; Bright 1967a: 923; Bright & Stark 1973: 62; Chamberlin 1939: 245–246; Furniss, R. L. & Carolin 1977: 375; Wood, S. L. 1982b: 647. (**tx**) Blackman 1938c: 151; Bright 1967a: 920–923; Chamberlin 1939: 245–246; de Ruette 1970: 98; Wood, S. L. 1969a: 45, 1982b: 647.

***rhois* Blackman** 1938c: 154. Holotype ♂; Ventura County, California [USA]; USNM, Washington.
Figures: Bright 1967a: 920 (declivity).
Distribution: North America (S California in USA).
Hosts: *Rhus diversilobata, R. trilobata*.
References: (**hb**) Bright & Stark 1973: 61; Chamberlin 1939: 246. (**ds**) Blackwelder 1939; Bright 1967a: 922; Bright & Stark 1973: 61; Chamberlin 1939: 246; Wood, S. L. 1982b: 646. (**tx**) Blackman 1938c: 154; Bright 1967a: 920, 922; Chamberlin 1939: 246; de Ruette 1970: 98; Wood, S. L. 1969a: 44, 1982b: 646.

***setosus* Wood** 1983a: 652. Holotype ♂; Estacion de Biologia, Chamela, Jalisco, Mexico; Wood Collection.
Distribution: North America (Jalisco in Mexico).
Hosts: Cactaceae sp.
References: (**ec**) Equihua & Atkinson 1986: 629. (**hb**) Equihua & Atkinson 1986: 629. (**ds**) Equihua & Atkinson 1986: 629. (**tx**) Wood, S. L. 1983a: 652.

***spinatus* Wood** 1957d: 106. Holotype ♂; 2 km SE Cameron, Oaxaca, Mexico; SMUK, Lawrence.
Figures: Atkinson et al. 1986: 65 (adult), Bright 1967a: 920 (declivity).
Distribution: North America (Jalisco, Oaxaca in Mexico).
Hosts: *Bursera* spp.
References: (**hb**) Atkinson et al. 1986: 60; Wood, S. L. 1982b: 644. (**ds**) Atkinson et al. 1986: 60; Bright 1967a: 924; Wood, S. L. 1982b: 644. (**tx**) Atkinson et al. 1986: 65; Bright 1967a: 920, 924; Wood, S. L. 1957d: 106, 1969a: 44, 1982b: 644.

Tribe Carphodicticini Wood

Carphodicticini
References: Wood, S. L. 1971: 19, 1978a: 113, 1982b: 65–66, 1986a: 66.

Genus *Craniodicticus* Blandford

CRANIODICTICUS BLANDFORD 1895a: 317. Type-species: *Craniodicticus mucronatus* Blandford, monobasic.
References: (**hb**) Wood, S. L. 1986a: 66. (**ds**) Wood, S. L. 1986a: 66. (**tx**) Blandford 1895a: 317; Schedl 1939b: 378–382; Wood, S. L. 1986a: 67.

***minor* Eggers** 1936d: 635. Holotype, sex?; Indien, Coorg: Mercara; USNM, Washington.
Distribution: Asia (S India).
References: (**ds**) Schedl 1974c: 262. (**tx**) Anderson, W. H. & Anderson 1971: 20; Eggers 1936d: 635–636.

***mucronatus* Blandford** 1895a: 317. Syntypes ♂ ♀; Ceylon, Kikoya; BMNH, London.
Distribution: Asia (Sri Lanka).
Hosts: A creeper known as jungle rope.
References: (**ds**) Kleine 1912b: 162, 1914b: 272; Miwa 1931: 268; Schedl 1959a: 471. (**tx**) Blandford 1895a: 317; Eggers 1936d: 635–636; Hopkins 1914: 119; Lucas 1920: 206; Schedl 1939b: 382, 1959a: 471; Wood, S. L. 1986a: 67. (**ms**) Lucas 1920: 206.

Genus *Carphodicticus* Wood

CARPHODICTICUS WOOD 1971: 19. Type-species: *Carphodicticus cristatus* Wood, original designation.
References: (**hb**) Wood, S. L. 1986a: 67. (**ds**) Wood, S. L. 1986a: 67. (**tx**) Wood, S. L. 1971: 19, 1979b: 133–134, 1986a: 67.

***cristatus* Wood** 1971: 19. Holotype ♂; 8 km W Bumbum, Barinas, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: Tree limb.
References: (**hb**) Wood, S. L. 1971: 19–20. (**tx**) Schedl 1979c: 69; Wood, S. L. 1986a: 67.

Genus *Dendrodicticus* Schedl

DENDRODICTICUS SCHEDL 1958f: 37. Type-species: *Dendrodicticus argentiniae* Schedl, monobasic.
References: (**hb**) Wood, S. L. 1986a: 67. (**ds**) Wood, S. L. 1986a: 67. (**tx**) Schedl 1958f: 37; Wood, S. L. 1979b: 133–134, 1986a: 67

***argentiniae* Schedl** 1958f: 37. Holotype, sex?; Argentinien: Salta; Schedl Collection in NHMW, Wien.
Distribution: South America (Argentina).
References: (**tx**) Schedl 1958f: 37, 1979c: 25; Wood, S. L. 1979b: 133, 1986a: 67.

Tribe Ipini Bedel

Ipini
References: Bedel 1888b: 395–396, 400, 417; Handlirsch 1925: 692; Leng 1920: 339–340; Lucas 1920: 34; Nunberg 1954: 14; Reitter 1894: 39, 1906: 711; Spessivtsev 1913a: 28; Wood, S. L. 1978a: 113, 1982b: 66, 1986a: 67.

Ipidae
References: Brues & Melander 1932: 446; Csiki 1906: 77; Hopkins 1915c: 224; Lucas 1920: 34; Tredl 1907: 4.

Ipina
References: Balachowsky 1949a: 52.

Ipinae
References: Costa Lima 1956: 287; Hagedorn 1909: 162, 1910a: 24, 88, 1910d: 47; Hopkins 1915c: 224; Karaman 1963a: 53; Leng 1920: 339–340; Lucas 1920: 34; Nunberg 1954: 14; Nusslin 1911: 433; Reitter 1894: 39, 1913a: 26; Swaine 1909: 80.

Pityogenina
References: Balachowsky 1947: 44, 1949a: 244; Nunberg 1954: 17; Schedl 1958j: 145.

Tomicidae (based on erroneous identification)
References: Bau 1888: 85; Boas 1923; Eichhoff 1878b: 210; Lindemann 1876: 151; Thomson 1859: 145, 1865: 345; Wollaston 1854: 288, 1864: 254.

Tomicides (based on erroneous identification)
References: Ferrari 1867a: 3; Lacordaire 1866: 357, 372.

Tomicinae (based on erroneous identification)
References: Hagedorn 1908: 375.

Tomici (based on erroneous identification)
References: Blandford 1898b: 185; LeConte 1876: 345.

Tomicini (based on erroneous identification)
References: Barbey 1901: 21; Eichhoff 1878b: 7, 71, 1881a: 34, 42, 1883a: 106; Lovendal 1889b: 6.

Genus *Dendrochilus* Schedl

DENDROCHILUS SCHEDL 1957d: 79. Type-species: *Dendrochilus strombosiopsis* Schedl, subsequent designation by Schedl 1962j: 55.
References: (**hb**) Wood, S. L. 1986a: 68. (**ds**) Schedl 1962j: 55; Wood, S. L. 1986a: 68. (**tx**) Schedl 1957d: 79, 1962j: 55; Wood, S. L. 1986a: 68.

***arundinarius* Schedl** 1957d: 80. Holotype, sex?; Congo Belge: Kivu, Mont Kahuzi, 2230 m; MRCB, Tervuren.
Figures: Nunberg 1961a: 333, Schedl 1962j: 57 (galleries).
Distribution: Africa (Zaire).
Hosts: *Arundinaria alpina*.
References: (**ec**) Schedl 1958d: 185. (**hb**) Schedl 1958d: 185–188. (**ds**) Nunberg 1961a: 331. (**tx**) Nunberg 1961a: 333; Schedl 1957d: 80, 1962j: 56, 1962k: 1086.

***elongatulus* Schedl** 1977d: 282. Holotype, sex?; Ghana, Ashanti Region, Kwadaso, 259 m, N 6 degrees 42′, W 1 degree 39′; NHMB, Budapest.
Distribution: Africa (Ghana).
References: (**tx**) Schedl 1977d: 282.

***filum* Schedl** 1977d: 283. Holotype, sex?; Congo Belge, Kivu, Uvira; Schedl Collection in NHMW, Wien.
Distribution: Africa (Zaire).
References: (**tx**) Schedl 1977d: 283.

***intermedius* Schedl** 1977d: 283. Holotype, sex?; Nigeria, Samaru; NHMB, Budapest.
Distribution: Africa (Nigeria).
References: (**tx**) Schedl 1977d: 283.

***jasminiae* Schedl** 1957d: 81. Holotype, sex?; Congo Belge: Kivu, Mt. Kahuzi, 2240 m; MRCB, Tervuren.
Distribution: Africa (Zaire).
Hosts: *Jasminium abyssinicum*.
References: (**ec**) Schedl 1958d: 187. (**hb**) Schedl 1958d: 187, 1962j: 58. (**ds**) Schedl 1962j: 58. (**tx**) Schedl 1957d: 81, 1962j: 58, 1979c: 129.

***mikaniae* Schedl** 1957d: 82. Holotype, sex?; Congo Belge: Kivu, Mt. Kahuzi, versant Ouest, 2230 m; MRCB, Tervuren.
Figures: Schedl 1962j: 56 (antenna), 58 (galleries).
Distribution: Africa (Zaire).
Hosts: *Mikania scandens*.
References: (**hb**) Schedl 1962j: 59. (**ds**) Schedl 1962j: 59. (**tx**) Schedl 1957d: 82, 1962j: 59, 1962k: 56, 1979c: 153.

***robustus* Schedl** 1957d: 80. Holotype, sex?; Congo Belge: Kivu, Hembe-Bitale; MRCB, Tervuren.
Distribution: Africa (Zaire).
Hosts: *Brillantaisia* cf. *leonensis*.
References: (**ec**) Schedl 1962j: 60. (**hb**) Schedl 1962j: 60. (**ds**) Schedl 1962j: 60. (**tx**) Schedl 1957d: 80, 1962j: 60, 1979c: 212.

***strombosiopsis* Schedl** 1957d: 79. Holotype, sex?; Congo Belge: Yangambi; MRCB, Tervuren.
Figures: Schedl 1962j: 62 (adult antenna, galleries).
Distribution: Africa (Zaire).
Hosts: *Strombosiopsis tetrandra*.
References: (**hb**) Schedl 1962j: 61. (**ds**) Schedl 1962j: 61. (**tx**) Schedl 1957d: 79, 1962j: 61–62, 1979c: 239.

***villiersi* (Lepesme)** 1942: 270 (*Thamnurgus*). Holotype, sex?; Mont Cameroun, versant Sud-Est, 1800–2000 m; MNHN, Paris.
Distribution: Africa (Cameroon).
Hosts: Liana
References: (**tx**) Lepesme 1942: 269–270; Schedl 1957d: 56, 64, 1960b: 164, 1962j: 63, 1964k: 309.

Genus *Pityogenes* Bedel

PITYOGENES BEDEL 1888b: 397. Type-species: *Dermestes chalcographus* Linnaeus, original designation.

Eggersia Lebedev 1926: 121. Type-species: *Bostrichus bidentatus* Herbst, subsequent designation by Wood 1986a: 68. Synonymy: Schedl 1962a: 132.
References: (**tx**) Lebedev 1926: 121; Schedl 1962a: 131–132; Wood, S. L. 1986a: 68.

Pityoceragenes Balachowsky 1947: 44. Type-species: *Bostrichus quadridens* Hartig, original designation. Synonymy: Schedl 1958k: 145.
References: (**tx**) Balachowsky 1947: 44, 1949a: 244; Schedl 1958k: 145.

Keys: Bright 1976d: 150, Swaine 1918a: 104, Wood 1982b: 650 for North America; Pfeffer 1946: 112, Reitter 1913a: 97, Schedl 1962a: 134, Stark 1952: 272 for Europe and Asia; Nobuchi 1974: 36 for Japan; Yin, Huang, & Li 1984: 121–122 for China.

References: (**cn**) Andreeva & Gorjaceva 1960; Aullo 1926: 56–60; Clemens 1916: 385–398; Felt 1906: 374; Nobuchi 1969a: 65; Spaic 1964a; Swaine 1913: 87–92; Walker 1912: 59. (**ec**) Balazy & Michalski 1964a; Nickle 1976b; Nickle & Welch 1984: 638; Ruhm 1960: 203; Voolma 1978: 91; Wisniewski 1979b. (**hb**) Bright 1976d: 139; Bright & Stark 1973: 78; Furniss, R. L. & Carolin 1977: 399; Wood, S. L. 1982b: 649, 1986a: 68. (**ds**) Bright & Stark 1973: 78; Furniss, R. L. & Carolin 1977: 399; Nobuchi 1974: 36; Plaza & Gil 1982; Schedl 1981b: 82; Scheerpeltz & Winkler 1930: 258; Swaine 1909: 132; Trappen 1935: 143; Wood, S. L. 1982b: 649, 1986a: 68; Yin, Huang, & Li 1984: 121. (**tx**) Arnett 1960: 1044, 1968: 1044; Balachowsky 1947: 44, 1949a: 244–247; Beal & Massey 1945: 138; Bedel 1888b: 398, 418; Blackman 1922b: 77, 110; Bright 1976d: 139, 1978: 139; Bright & Stark 1973: 78; Choo 1983: 27; Choo, Woo, & Nobuchi 1988b; Dodge 1938: 19, 48; Duffy 1953: 15; Escherich 1923: 483; Fuchs 1911: 1; Hopkins 1914: 167; Kalina 1970: 127; Karaman 1972: 140; Kostin 1973: 262; Krivolutskaya 1958: 173–174; Kurenzov 1941: 201; Lanier 1968: 4167; Lebedev 1926: 121; Munro 1926: 64; Murayama 1929: 23, 28, 1930: 18, 1954: 172; Nickle 1963: 256–262; Niisima 1909: 145; Nobuchi 1974: 36, 41; Nunberg 1954: 71; Nusslin 1912: 101–107; Pfeffer 1946b: 112–119, 1955a: 223, 1989a: 68; Plaza & Gil 1982; Reitter 1913a: 92, 97; Saalas 1914: 86–88; Schedl 1954b: 37, 1958k: 145; 1962a: 132–139, 1981b: 82; Schimitschek 1937: 50–51; Spessivtsev 1922: 479, 1925: 182, 1931; Stark 1952: 372; Stresemann et al. 1989: 351; Swaine 1918a: 47, 104; Tragardh 1930: 468–480; Vite 1965: 267; Wood, S. L. 1951b: 32, 1982b: 649–656, 1986a: 68; Yin & Huang 1981: 562; Yin, Huang, & Li 1984: 121; Zivojinovic 1948: 65–73; Zolk 1935: 258–294.

***bidentatus* (Herbst)** 1784: 24 (*Bostrichus*). Syntypes, sex?; Deutschland; not located.

Figures: Bevan 1987: 115 (adult), Grune 1979: 130, Krivolutskaya 1965: 240, Pfeffer 1989a:pl. 9, Plaza & Gil 1982: 260.

Distribution: Asia (Israel/ Turkey/ Sakhalin Island, E USSR), Europe (Austria/ Belgium/ Bulgaria/ Corsica/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Hungary/ Italy/ Luxemburg/ Netherlands/ Norway/ Poland/ Romania/ Scotland/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia), introduced into Madagascar and into North America (Livingston Co., New York in USA).

Hosts: *Pinus* spp., rare in *Abies* spp., *Picea* spp.

References: (**ay**) Dobers 1915; Escherich 1923b: 465, 484, 549; Feytaud 1950a; Fuchs 1911a; Munro 1917b: 147; Nusslin 1911a: 109; Scherb 1971; Sedlaczek 1902b: 244. (**bv**) Annila & Petaisto 1978; Baader 1989; Bakke 1956: 40–42; Byers, Anderbrandt, & Lofqvist 1989; Chararas 1982; Fuhrer & Kerck 1978a; Grune 1979: 131; King, C. J. 1977b; Luitjes 1976; Naumann-Etienne 1978a; Nuorteva 1956c: 93; Nuorteva & Nuorteva 1968; Prell 1931: 369; Rozhkov 1970: 147; Tragardh 1930b: 107. (**cn**) Anonymous 1979p; Ass & Funtikow 1941; Baader 1989; Bakke 1960: 313; Barbey 1906a, 1925: 278; Bevan 1964b; Blandford 1892a; Byers, Anderbrandt, & Loqvist 1989; Cameron 1940: 40–42; Chararas 1961b: 69, 1978; Chorbadzhievo 1929; Chrystal 1949: 3–11; Crooke 1955b, 1956; Day & Chrystal 1928: 19–30; Eckstein 1915, 1926: 572, 1930b; Egorov 1958: 1492; Ehnstrom et al. 1974; Elton 1949a; Escherich 1917: 97–115, 1923b: 465, 484, 549, 1932a; Feytaud 1946, 1950a, 1950b; Forbes 1910; Gabler 1955; Galoux 1947c, 1948d; Georgescu et al. 1957: 357, 449; Geschwind 1919: 111, 199; Gornostaev 1917: 308–315; Grandi 1951; Gyorfi 1946: 193, 195, 1959; Hanson, H. S. 1937; Henry 1904; Hess 1907: 253; Hess & Beck 1914: 334, 1927: 277; Hrubik 1973; Hubault 1945; Joly 1976; Judeich & Nitsche 1895: 501; Kamp 1950, 1956b: 471; Kangas 1937, 1938: 1–20, 73–98; Koch 1913: 118; Krausse 1919: 134–136; Kruel 1950: 6; Laidlaw 1952: 21; Lekander 1955b: 17; Lekander, M. 1951: 53; Lesne 1913: 213; Lichtenstein & Picard 1918: 172–174; Lindgren 1980a: 66; Lohrenz 1907: 47; Lonshehakov & Lure 1960; Lozovoi 1950c: 305; Lozovoi & Tropin 1965, 1967; Lyle 1915: 212–213; MacDougall 1915, 1921; Marchal 1914: 9–13; Marcu 1926b: 65, 1930: 227–236; Marie 1924: 328–330; Mathiesen 1952: 282; Mayne 1926: 234–245; Mokrzecki 1933: 282; Munro 1917: 123–158, 1919: 1–35, 1922: 136; Nuorteva & Nuorteva 1968; Nusslin 1913: 205; Ozols 1960; Pfeffer 1948d: 235; Pierce, W. D. 1917: 69; Polozencev & Zolotov 1969: 3–6; Rhumbler 1922: 323, 1927: 338; Rossem, Burger, & Van de Bund 1960; Ryukin 1951: 80; Saalas 1949: 344, 383; Sargos 1947: 8; Schimitschek 1937c: 56, 1944: 186, 1955a: 71, 73, 1955c: 88; Schwerdtfeger 1944a: 177, 1950b: 50, 1968a; Sedlaczek 1921: 335, 1936: 200; Sierpinski

1966: 57; Stefanov 1946: 1; Tragardh 1917: 28, 1921: 281–314, 1927c: 88; Tullgren 1916: 104; Vappula 1965: 153; Voute 1942: 617; Vuiliet 1913: 111–112; Wachtl 1883b: 319, 1901: 381; Wardle 1929: 323; Weber, H. 1926: 574; Wichmann 1927b: 352; Wolff & Krausse 1922: 95. (**ec**) Acatay 1943b; Annila & Petaisto 1978; Ass & Funtikow 1941; Bakke 1956a; Balazy & Michalski 1960, 1964b; Barbey 1906a, 1927; Belanowski 1930; Bramannis 1940; Bychawska 1985; Cameron 1940; Carle 1971; Chararas 1959a, 1964b; Day & Chrystal 1928; Elliot & Morley 1907; Espanol 1967a; Fuchs 1930, 1938; Fuhrer & Kerck 1978a; Gadek 1976; Galoux 1947d; Graham 1969: 874; Gyorfi 1941b, 1952b; Halperin & Holzschuh 1984: 30; Heqvist 1957a, 1963: 154, 1967: 69; Hirschmann & Wisniewski 1982, 1983; Jamnicky 1957b: 18; Kangas 1937, 1971; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1980a, 1980b, 1983; Kleine 1908c: 214, 1909a: 47, 77, 1944: 72; Kokueva 1900: 569; Kolubajiv 1954: 22; Kolubajiv & Kalandra 1954: 30; Kostin 1964: 118; Krol 1984; Laumond & Ritter 1971; Lichtenstein & Picard 1918: 173; Lindquist, E. E. 1970b; Lovaszy 1941: 195; Lozovoi 1961: 91–113, 1962: 171–284; Lozovoi & Tropin 1965, 1967; Luitjes 1976; Lundberg 1984; Majeski, T. & Wisniewski 1978a: 8; Mathiesen 1952: 282; Michalski & Ratajczak 1989; Naumann-Etienne 1978a; Nunberg 1930: 201; Nuorteva 1956a: 17, 1957b: 53, 1968a, 1970, 1971: 69; Nuorteva & Nuorteva 1968; Nusslin 1927: 338; Palmen 1944: 60, 1946: 194; Pettersen 1976b; Pfeffer 1923a: 332, 1928b: 6, 1943b: 182; Pierce, W. D. 1917: 69; Poinar 1975: 165; Roubal 1934a: 86; Ruhm 1954c: 222, 1956b: 4; Rumbold 1931c: 848; Ruschka 1921: 241; Ryvkin 1951: 80–81; Saalas 1917a: 18, 1949: 344, 383; Schaarschmidt 1959: 786; Schedl 1962a: 155; Schimitschek 1930a: 326, 1955a: 71, 73; Schwerdtfeger 1944a: 177, 1950b: 50; Sedlaczek 1921: 334–339, 1935a: 163; Seiff 1925: 334–337; Shaw, M. R. 1989; Sitowski 1930: 2; Stewart 1923: 138; Szczepanski 1960a: 411; Thompson, W. R. & Simmonds 1964: 23, 1965: 92; Tudor 1969: 33; Vietinghoft 1924: 329; Wagner 1928: 15; Wiackowski 1957a: 85, 1957b: 312; Wichmann 1954d: 438; Wisniewski 1979b; Wulker 1924: 11. (**hb**) Annila & Petaisto 1978; Anonymous 1920: 65; Arndt 1920; Bakke 1968b: 640; Barbey 1901: 26, 97, 1925: 278; Beffa 1949, 1961; Bejer-Petersen 1957; Carle 1971; Cecconi 1906, 1924; Chararas 1961b: 69, 1962c: 354; Charvat 1950; Chorbadzhievo 1929; Dallimore & Munro 1922: 189–193; Dombrowsky 1887, 1892; Eckstein 1897, 1915, 1926: 572; Eichhoff 1881a: 51, 253; Elton et al. 1964; Escherich 1923b: 465, 484, 549, 1930b; Everts 1900; Ferreira & Ferreira 1989; Feytaud 1946, 1950a; Frohlich 1927: 101; Fuchs 1904a, 1911b; Gabler 1955; Gillanders 1908; Gornostaev 1916: 312; Grandi 1951; Gyorfi 1957; Hagedorn 1903a; Halperin & Holzschuh 1984: 30; Hamilton, W. D. 1979: 202; Hennings 1908c: 220, 1908d; Henschel 1895a: 180; Hess 1907: 253; Hess & Beck 1914: 334, 1927: 277; Joly 1976; Judeich & Nitsche 1895: 501; Karpinski 1933b: 35; Karpinski & Strawinski 1948: 157; Kauschinger 1883: 104; King, C. J. 1977b; Knotek 1894a: 558; Kostin 1960: 134; Krivolutskaya 1960: 81, 1973: 141; Lengerken 1939: 48, 66, 1954: 86; Lindgren 1980a: 66; Loos 1913: 411; Louzil 1961: 43; Lozovoi & Tropin 1965, 1967; Luitjes 1967; Lunardoni & Leonardi 1889: 476; MacDougall 1921: 112; Masutti 1964; Michalski 1959a: 291; Munro 1916b: 115, 1917b: 147, 1926: 65 ; Naumann-Etienne 1978a; Nilssen 1984; Nunberg 1929: 112; Nuorteva 1956c: 93, 1968a, 1970; Nusslin 1898: 283, 1906b: 14, 1913: 205, 1927: 338; Orest 1926b: 81; Petrenko 1966; Pfeffer 1941b: 3, 1989a: 69; Postner 1974: 443; Prell 1931: 369; Rhumbler 1922: 323, 1927: 338; Rimski-Korsakov et al. 1949: 288; Rozhkov 1970: 147; Rudnev 1926: 32–69; Rupertsberger 1879: 231, 1880: 231; Saalas 1913a: 68, 88, 1949: 344, 383; Schedl 1962a: 155; Schimitschek 1930a: 326, 1944: 186, 1955a: 71, 73; Schwerdtfeger 1944a: 177, 1981: 189; Sedlaczek 1921: 335, 1935a: 163; Stark 1952: 390; Tragardh 1914: 93, 1927c: 88, 1929a: 314, 1930b: 107, 1939b: 159, 225; Tschorbadjiev 1929: 172; Voute 1942: 617; Wachtl 1876a: 453, 1901: 381; Weber, H. 1926: 574; Wichmann 1927b: 352; Wolff & Krausse 1922: 95. (**ds**) Acatay 1943: 3; Acloque 1896; Allen, A. 1951b: 116; Alluaud 1900: 441; Ammann & Knabl 1913; Angus 1964: 179; Anonymous 1979p; Audras & Schaefer 1957; Bakke 1960: 313, 1968a: 640; Balazy & Michalski 1960; Barthe 1896; Bau 1888; Bedel 1888b: 402, 418; Beffa 1949; Bejer-Petersen & Jorum 1977: 27; Bielz 1887; Bistrom & Vaisanen 1988: 42; Borchert 1951; Borodajewsky 1930: 249–251; Brakman 1966b: 207; Brundin 1934; Buresh & Lazarov 1956; Butovitsch 1930: 51–54; Carpentier & Delaby 1908; Cecconi 1897, 1906; Chararas 1961c: 92; Charvat 1950; Chorbadzhievo 1924d, 1929; Chrystal 1922, 1928: 28–29, 1937; Dallimore & Munro 1922; Debatisse 1945; Eder 1934; Eggers 1904, 1912d; Elton 1949a; Endrodi 1958b; Ermisch 1953; Escalera 1919; Escherich 1923b: 465, 484, 549, 1932b; Esterberg 1928; Everts 1900, 1922: 644, 1925; Fauvel 1885; Fjellberg 1966: 154; Fowler 1891; Fricken 1889: 347; Fuchs 1904a, 1905a; Gabler 1949b; Gaidiene 1976; Gaunitz 1928: 92; Gemminger & Harold 1872: 2689; Gillerfors 1966; Gobbi 1989: 61; Gornostaev 1917; Grill 1895: 311; Grouzelle 1905; Grune 1979: 131; Gyorfi 1941b; Hagedorn 1903a, 1910a: 49; Hallett 1923a; Halperin & Holzschuh 1984: 30; Hansen, V. 1939, 1956, 1964: 464; Hellen 1928: 99, 1947; Helliesen 1916: 84; Hennig 1954: 257, 261, 263; Henschel 1895a: 180; Heyden 1877: 140; Heyden, Reitter, & Weise

1883: 182, 1891: 672, 1906: 712; Hoebeke 1989; Horion 1951; Hubault 1923b; Illiger 1805: 129; Jansson 1935: 77; Jazentkovsky 1912: 289; Johnson & Halbert 1902: 819; Joly 1976; Judeich & Nitsche 1895: 501; Kaisila 1952: 18; Kamp 1956: 471; Kangas 1971; Karpinski 1925: 216, 1926: 82, 1931: 26, 34, 1933b: 35, 1948b: 231; Karpinski & Strawinski 1948: 57; Keler 1922b: 211, 1925b: 272; Kersten 1933: 76; Kiefer et al. 1942: 529; Klefbeck & Sjoberg 1960: 230; Kleine 1912a: 262, 267, 1913a: 35, 1913b: 131, 1934a: 151; Kloft & Hinks 1945: 218; Knotek 1892a: 38, 1894a: 558; Koltze 1901: 153; Kolubajiv 1934: 64; Koschitsky 1900: 83; Krivolutskaya 1960: 81, 1965: 239, 1973: 141, 1983; Kurir 1947c: 6; Langhoffer 1915c: 158; Larroche & Torossian 1971; Leclercq 1971; Lekander 1955b: 17; Lentz 1857: 139; Lesne 1913: 213; Lomnicki 1913b: 148; Loos 1913: 411; Lovaszy 1941: 194–204; Lovendal 1890c: 209; Lucht 1987: 279; Lunardoni & Leonardi 1889: 476; Lundberg 1974: 92, 1979: 31; Lundblad 1950c: 116; Mandl 1931: 25; Marcu 1926c: 65, 1957b: 213; Mequignon 1936: 15, 31; Michalski 1957: 166; Munro 1922: 136; Munster 1928: 290; Negru 1968a: 457; Nestertschuk 1930: 159–182; Nunberg 1928b: 88, 113, 1954: 74; Nuorteva 1971: 67; Nusslin 1898: 283; Orest 1926c: 66; Palmen 1944: 60, 1946: 194; Pfeffer 1924b: 472, 1928b: 6, 1931b: 74, 1935: 159, 1947e: 16, 1950b: 76, 1960: 346, 1984: 277, 1989a: 69; Pierce, W. D. 1917: 69; Platonoff 1943: 141; Plaza & Gil 1982: 260; Pomerantzev 1907b: 492; Poppius 1900: 108; Postner 1974: 443; Prossen 1913: 83; Rapp 1934: 730; Reitter 1894a: 78, 1916: 300; Rimski-Korsakov et al. 1949: 288; Roubal 1935b: 73, 1941: 271; Rozhkov 1970: 147; Saalas 1913a: 68, 88, 1917a: 18, 1931: 69; Sainte-Claire & Mequignon 1938: 448; Sawamoto 1940a: 96, 105; Schaufuss 1915: 1245; Schedl 1959h: 100, 1969g: 291, 1971d: 429, 1971i: 291, 1980a: 24, 1981b: 84; Schilsky 1909: 188; Schwerdtfeger 1981: 189; Seidlitz 1891a: 565, 1891b: 610; Seitschek 1929: 242–244; Sharp & Fowler 1893: 35; Shaw, M. R. 1989; Sierpinski 1966; Stark 1925: 78–81, 1952: 390; Stein & Weise 1877: 165; Stewart 1923: 138; Stierlin 1898: 442; Stierlin & Gautard 1906: 205; Strand 1946: 602; Strand & Hanssen 1935: 70; Thornley 1897: 257; Tragardh 1914: 93, 1939b: 159, 225; Tredl 1907: 14; Troshanin 1932: 552–556; Tschorbadjiev 1929: 172; Van Rossem, Burger, & Van de Bund 1960: 125; Vappula 1965: 153; Wachtl 1876a: 453; Wegelius 1960: 106; Welch, R. C. 1968b: 121; Westhoff 1882: 239; Wichmann 1927a: 74; Wiepken 1883: 89; Winter, T. G. 1983: 22; Wiren 1945: 43; Yanovskii & Dmitrienko 1983; Yanovskii & Tegshzhargal 1985: 411; Zinovjev 1955: 187; Zolk 1937: 147–172. (**tx**) Acloque 1896; Balachowsky 1947, 1949a: 252; Barbey 1901: 26, 97; Bedel 1888b: 402, 418; Beffa 1949, 1961; Bejer-Petersen 1957; Bevan 1987: 115; Carpentier & Delaby 1908; Ceballos 1945; Charvat 1950; Chorbadzhievo 1924d; Dobers 1915: 36–40; Dombrowsky 1887, 1892; Duffy 1953; Eggers 1914: 107–108, 1920, 1922d, 1929e: 42; Eichhoff 1878b: 279, 1881a: 51, 253, 1883a: 114, 139, 1896: 609; Endrodi 1957b; Escherich 1923b: 465, 484, 549; Everts 1922: 644; Fabricius 1787: 37; Fauvel 1885, 1889; Ferrant 1911; Fleischer 1927; Formanek 1907: 40; Fraser 1920; Fricken 1889: 347; Fuchs 1911a; Gabler 1949b, 1955; Gebien 1907: 197; Gillanders 1908; Gmelin 1790: 1602; Grune 1979: 130, 131; Hagedorn 1910a: 104; Hansen, V. 1956, 1964: 464; Henschel 1885a, 1895a: 180; Herbst 1784: 24, 1793: 109; Houlbert 1922a:pl. 1; Joly 1976, 1976b: 171; Judeich & Nitsche 1895: 501; Kalina 1970: 127; Karpinski & Strawinski 1948: 157; Knotek 1892a: 38; Koch 1913: 118, 1928: 83, 1932: 123; Krivolutskaya 1965: 240; Kuhnt 1913: 1057; Letzner 1891: 377; Louzil 1961: 108; Lovendal 1889b: 64, 1890c: 209, 1898: 167; Lucht 1987: 279; Lunardoni & Leonardi 1889: 476; Munro 1916b: 115, 1917b: 147; Murayama 1939: 140; Nunberg 1930: 200–208, 1954: 74; Nusslin 1911a: 109; Panzer 1795a: 287; Pfeffer 1932b: 24, 1941b: 3, 1946b: 115, 1947e: 16, 1955a: 230, 1989a: pl. 9; Plaza & Gil 1982: 260, 262; Portevin 1935: 335; Postner 1974: 443; Quaschik 1953: 35; Reitter 1894a: 78, 1913a: 99, 1916: 300; Rhumbler 1922: 323, 1927: 338; Rupertsberger 1879: 231, 1880: 231; Saalas 1913a: 68, 88, 1919, 1949: 344, 383; Sawamoto 1940a: 96, 105; Schedl 1934f: 1644, 1952f: 87, 1952k: 162, 1962a: 155, 1965c: 51, 1980a: 24, 1981b: 84; Scherb 1971; Schimitschek 1937c: 56, 1955c: 88; Schlechtendal & Wunsche 1879: 126; Seidlitz 1891a: 565, 1891b: 610; Sokanovskii 1960: 677; Spessivtsev 1922a: 479, 1923: 200, 214, 1925a: 186, 1925b: 22; Stark 1928: 377–378, 1952: 390; Stierlin 1898: 442; Wachtl 1895: 8; Weber, L. 1912: 30. (**ms**) Bevan 1964b; Escherich 1932b; Fuchs 1911b; Michalski 1959a: 291; Schwappach 1924: 56; Sedlaczek 1913: 455, 1936: 200; Weber 1912: 30.

ater Fabricius 1792: 368 (*Bostrichus*). Holotype, sex?; Sueciae; UZMC, Copenhagen. Synonymy: Zimsen 1964: 190.

Notes: (1) Although there were 2 syntypes, the second one is not a Scolytidae; therefore, the first becomes the holotype by elimination.

References: (**tx**) Fabricius 1792: 368; Zimsen 1964: 190.

bidens Fabricius 1801: 389 (*Bostrichus*). Syntypes 5, sex?; Kiliae; UZMC, Copenhagen. Synonymy: Balachowsky 1949a: 252.

References: (**ay**) Schevyrew 1889a: 22. (**cn**) Dolles 1885; Esterberg 1959; Feytaud 1950b; Grossbauer 1875; Hartig 1861: 324, 1877: 190; Hess 1898: 354; Jaensch 1938: 49; Kauschinger 1893: 142; Keller 1903b: 52; Kholodkovskii 1912: 278, 309; Kirchner 1860: 91; Kollar 1851: 230; Kontkanen 1932: 59; Koppen 1882:

236; Letzner 1855: 142; Lohrenz 1907: 47; Nestertschuk 1930: 172, 176; Nusslin 1883: 152; Pomocnicze 1876: 153; Reisseneger 1889: 335; Schuster 1918: 102. (**ec**) Gaulle 1906: 237; Giraud & Laboulbene 1877: 427; Gyorfi 1952b; Haarlov & Bejer-Petersen 1952; Hubault 1923a; Meyer 1934: 616; Perris 1852: 497, 1854b: 596, 1856a: 187, 1857: 360, 1862: 189; Ratzeburg 1869a: 59; Rondani 1871: 219, 1873: 139; Schuster 1918: 102; Seiff 1925: 335; Stark 1925b: 80; Stefanov 1949a: 105; Thompson, W. R. 1943: 57. (**hb**) Altum 1875, 1879c, 1881c: 305, 1883c, 1884, 1889c, 1890b; Bach 1864; Boas 1923: 357; Borodajewsky 1930b; Budge 1949; Chittenden 1890; Dombrowsky 1892; Eckstein 1889, 1939b; Eichhoff 1882d: 336; Furst 1888: 109, 1131; Girard 1873; Hartig 1861: 324, 1870, 1877: 190; Henschel 1876a: 97, 238, 1880b: 257; Hess 1898: 354; Holmgren 1867: 113, 136; Jaensch 1938: 49; Karsch 1883: 141; Kauschinger 1893: 142; Kholodkovskii 1912: 278, 309; Kurenzov 1948b: 108; Lindemann 1875a: 133; Lohrenz 1907: 47; Nordlinger 1856: 21; Perris 1852: 497, 1856a: 187; Ratzeburg 1837: 132, 159, 1839: 159, 193; Rodd 1897: 34; Spessivtsev 1913a: 70, 1923: 213; Stark 1926a: 337; Stefanov 1949a: 105; Taschenberg 1880: 231. (**ds**) Ammann & Knabl 1923; Barthe 1896; Bielz 1851; Blanchere & Robert 1889; Boas 1923: 357; Brancsik 1871; Calwer 1884, 1893; Chapuis & Candeze 1853; Chittenden 1890; Crotch 1863; Dejean 1821, 1825, 1837; Duftschmidt 1825; Ericson & Sandin 1893; Esterberg 1959; Eyquem 1891; Favre 1890; Forster 1849: 439; Gaubil 1849: 126; Gozis 1875: 80; Gredler 1866: 374; Guyon 1855; Heinemann 1908a; Heller 1881: 173; Heyden 1876: 299; Holmgren 1867: 113, 136; Hubault 1923b; Illiger 1805: 129; Kestercanek 1881a: 12; Kontkanen 1932: 59; Koppen 1882: 236; Kraatz 1869: 59; Lacordaire 1866: 383; Letzner 1855: 142; Lindberg & Saris 1952: 59; Lokaj 1868: 64; Matthews & Fowler 1883: 42; Murray 1853: 60; Olivier 1795b: 10; Perris 1876a: 254, 1877a: 414; Pfeffer 1950b: 73; Ratzeburg 1837: 132, 159, 1839: 159, 193; Redtenbacher 1858: 835, 1874: 379; Reitter 1869b: 154; Rye 1866b: 64; Sahlberg 1900: 106; Schaum 1859: 96, 1862: 101; Schilsky 1909: 188; Schiodte 1873: 102; Schreiner 1897: 369; Schwarz 1886: 41; Seidlitz 1872: 394; Sharp & Fowler 1893: 35; Siebke 1875: 284; Stark 1926a: 337, 1926b: 105, 1926j: 127, 1927b: 90, 1931a: 21, 27, 1931d: 549, 1936e: 147; Stein 1868: 114; Stein & Weise 1877: 165; Stephens 1829a: 145, 1830: 357, 1839: 207; Stierlin & Gautard 1871: 294; Strauch 1861: 122; Sturm 1843: 230; Thomson 1865: 368, 1868: 222; Zetterstedt 1840: 193. (**tx**) Altman 1844; Bach 1854, 1864; Balachowsky 1949a: 252; Bechstein 1818: 75, 213; Bechstein et al. 1805: 97; Bertolini 1872; Boas 1923: 357; Brancsik 1871; Calwer 1858; Castlenau 1840; Chapuis & Candeze 1853; Dejean 1821, 1825; Dobrodeev 1924: 70–76; Dombrowsky 1892; Duftschmidt 1825; Eggers 1929e; Eichhoff 1864b: 42, 1868d: 424, 1872c: 137, 1877c: 389–392, 1883b: 219; Escherich & Escherich 1897; Fabricius 1792: 368, 1801: 389; Ferrari 1867a: 33–34, 1867b: 114, 1868: 256; Fleischer 1905; Florov 1949: 101; Girard 1873; Gyllenhal 1813: 357; Henschel 1876a: 97, 238; Krivolutskaya 1958: 174; Kurenzov 1941a: 195, 1948b: 108; Lacordaire 1866: 383; Letzner 1891: 377; Leunis 1886: 181; Lindemann 1875a: 133; Nordlinger 1848: 238, 1856: 21; Panzer 1795a: 290; Paykull 1800: 148; Perris 1877a: 414; Petkov 1963: 218; Ratzeburg 1837: 132, 159, 1839: 159, 193, 1856b: 60; Redtenbacher 1849a: 358, 1849b: 26, 1858: 835, 1874: 379; Saalas 1914: 88; Sahlberg 1836: 147; Schedl 1934f: 1644; Schevyrew 1889a: 22; Schwarz 1886: 41; Seidlitz 1872: 394; Spessivtsev 1913a: 69–70, 1931a: 68–69; Stark 1938: 147–148; Stephens 1829a: 145, 1829b: 12, 1830: 357, 1839: 207; Taschenberg 1880: 231; Thomson 1865: 368, 1868: 222; Zetterstedt 1840: 193. (**ms**) Eichhoff 1868d: 424; Hartig 1834: 109; Heinemann 1908a; Henschel 1880b: 257; Kholodkovskii 1893: 390.

bispinus Guyon 1855: 4815 (*Bostrichus*). Syntypes, sex?; Richmond, Surrey, England; not located. Synonymy: Schedl 1962a: 155.
References: (**hb**) Budge 1949; Girard 1873. (**ds**) Bielz 1851; Gaubil 1849: 126. (**tx**) Girard 1873; Guyon 1855: 4815; Schedl 1962a: 155.

bidentatus carniolica Fuchs 1911: 35. Syntypes, sex?; Karnten; Fuchs Collection. Synonymy: Schedl 1962a: 155.
References: (**tx**) Fuchs 1911: 14, 35; Reitter 1913a: 99; Schedl 1934f: 1644, 1962a: 155; Weber, L. 1912: 30. (**ms**) Sedlaczek 1913: 455; Weber, L. 1912: 30.

obtusus Eggers 1932e: 81. Holotype ♂; Jutland (Skagen) [Denmark]; August West Collection. Synonymy: Schedl 1962a: 159.
References: (**ds**) Hansen 1939; Horion 1951; Kleine 1934a: 152. (**tx**) Eggers 1932e: 81; Schedl 1962a: 159.

***bistridentatus* (Eichhoff)** 1878b: 282 (*Tomicus*). Syntypes, sex?; Europe [apparently Nice, France]; Hamburg Museum, lost.
Figures: Grune 1979: 134, Joly 1976b:pl. 10, Nobuchi 1974:pl. 1–2, Pfeffer 1989a:pl. 10.
Distribution: Asia (NE China/ Japan/ Turkey), Europe (Albania/ Austria/ Bulgaria/ Corsica/ Cyprus/ Czechoslovakia/ France/ Germany/ Greece/ Hungary/ Italy/ Poland/ Romania/ Spain/ Switzerland/ Yugoslavia).

Hosts: *Pinus nigra, P. brutia, P. heldreichii, P. leucodermis, P. pentaphylla,* rare in *Cedrus libanotica.*

References: (**ay**) Escherich 1923b: 484, 552; Feytaud 1950a; Fuchs 1911a; Nusslin 1911a: 255. (**bv**) Grune 1979: 135; Hellrigl 1985. (**cn**) Acatay 1943a: 68; Anonymous 1979e; Barbey 1924a, 1925: 341; Chararas 1978; Chorbadzhievo 1929; Eckstein 1926: 579; Escherich 1923b: 484, 552, 1929: 69–90; Feytaud 1950a; Gradojevic 1940; Grandi 1951; Gyorfi 1959; Joly 1976; Judeich & Nitsche 1895: 501; Kailidis & Markalas 1988; Keller 1903b: 42, 56, 1920: 197; Kholodkovskii 1912: 310; Koch 1913: 118; Nusslin 1913: 205, 280; Pierce, W. D. 1917: 69; Popovic 1931: 57; Rhumbler 1922: 323, 1927: 338; Schimitschek 1932a: 23, 1937c: 56, 1938b: 115, 1938c: 2118, 1939d: 2118, 1955c: 89; Schmidt 1881: 35; Schwerdtfeger 1944a: 177, 1957a: 183; Sierpinski 1966: 60; Weber, H. 1926: 579; Wichmann 1927b: 378; Zinojinovic 1963: 449. (**ec**) Capek 1957; Chararas 1964b; Gabler 1947b; Graham 1969: 874; Gyorfi 1941b; Hellrigl 1985; Hellrigl & Schwenke 1985: 48; Heqvist 1955a: 97; Jahn & Sinreich 1960b; Jamnicky 1957b: 26; Kleine 1908c: 214, 1944: 78; Knoche 1908b: 204; Krezal 1959: 574; Masutti 1959: 268, 301; Novak 1952: 416; Nunberg 1930: 203; Nuorteva 1957b: 52; Nusslin 1927: 338; Pfeffer 1932a: 19; Ruschka 1925: 201; Schaarschmidt 1959: 803; Schimitschek 1930a: 281; Schwerdtfeger 1944a: 177, 1957a: 183; Sedlaczek 1904: 359, 1908: 52, 1935a: 163; Seitner 1913a: 27; Seitner & Notzl 1925: 188; Thompson, W. R. 1943: 57; Vitzthum 1923: 176, 1926: 408. (**hb**) Acatay 1943a: 68; Alkan 1946: 113; Barbey 1901: 26, 99, 1924a, 1925: 341; Bargmann 1906; Budkov 1897; Bukowsky 1930; Cecconi 1924; Chararas 1962c: 358; Charvat 1950; Chorbadzhievo 1929; Dombrowsky 1887, 1892; Drugescu 1980; Dzhambazishvili 1961: 751–757, 1962; Eckstein 1926: 579; Eichhoff 1882e: 325; Escherich 1923b: 484, 552; Feytaud 1950a; Fuchs 1904a; Grandi 1951; Gyorfi 1957; Hagedorn 1903a; Henschel 1885b, 1895a: 181; Joly 1976; Judeich & Nitsche 1895: 501; Karpinski & Strawinski 1948: 157; Keller 1907a: 181; Kholodkovskii 1912: 310; Knotek 1894a: 558, 1897: 160, 1898b: 333; Lengerken 1939: 66, 1954: 86; Masutti 1959: 268, 301, 1964; Negru & Pirvescu 1966: 150; Nunberg 1929: 113, 1929c: 123, 1947c: 106; Nusslin 1898: 283, 1913: 205, 280, 1927: 338; Postner 1974: 444; Rhumbler 1922: 323, 1927: 338; Schedl 1962a: 151; Schevyrew 1905c: 192; Schimitschek 1930a: 281; Schmidt 1881: 35; Schwerdtfeger 1944a: 177, 1957a: 183; Sedlaczek 1935a: 163; Seitner & Notzl 1925: 188; Spessivtsev 1913a: 70; Stark 1952: 389; Tschorbadjiev 1929: 173; Weber, H. 1926: 579; Wichmann 1927b: 378. (**ds**) Anonymous 1979p; Balachowsky 1943a; Barthe 1896; Belousov 1916, 1917: 335; Brancsik 1906; Budkov 1897; Bukowsky 1930; Buresh & Lazarov 1956; Cecconi 1897; Champion 1894; Charvat 1950; Chorbadzhievo 1924d, 1929; Eggers 1904; Endrodi 1958b; Escalera 1919; Escherich 1923b: 484, 552, 1929; Favre 1890; Fuchs 1904a, 1905a; Georghiou 1977: 75; Geschwind 1919: 119, 199; Gobbi 1989: 61; Grune 1979: 135; Gyorfi 1940: 47, 1941b; Hagedorn 1903a, 1904e, 1910d: 49; Henschel 1895a: 181; Heyden, Reitter, & Weise 1891: 672; Holdhaus & Deubel 1910: 181; Holzel 1946: 81; Horion 1935, 1951; Joly 1976; Judeich & Nitsche 1895: 501; Kailidis 1985; Kailidis & Markalas 1988; Karaman 1964: 440–443; Karpinski & Strawinski 1948: 157; Keller 1920: 13; Kleine 1912a: 264, 268, 1913a: 35, 1913b: 131, 1934a: 151; Knotek 1892a: 38, 1894a: 558, 1898b: 333; Kolbe, W. 1916: 257; Kozikowsky 1921: 181, 1925: 18–23; Kozikowsky & Kuntze 1925a: 20; Kurir 1947c: 6; Lomnicki 1913b: 148; Lucht 1987: 279; Marcu 1957b: 213; Munster 1928: 290; Murayama 1939: 140, 1942a: 55; Negru 1966b: 403, 1968a: 457; Negru & Pirvescu 1966: 150; Nobuchi 1974: 37; Novak, P. 1952: 416; Nunberg 1927a: 214, 1928b: 88, 114; Nusslin 1898: 283; Pfeffer 1923b: 106, 1924a: 96, 1930b: 120, 1931b: 75, 1935: 159, 1936: 90, 1947d: 127, 1950b: 76, 1965: 63, 1984: 274, 277, 1989a: 70; Pierce, W. D. 1917: 69; Pjatnitskii 1930a: 165; Plaza & Gil 1982: 260; Postner 1974: 444; Prossen 1913: 83; Reitter 1894a: 79, 1916: 301, 352; Rodzianko 1915; Ruschka 1925: 197–202; Ruskov 1928c: 62; Sainte Claire & Mequignon 1938: 448; Schaufuss 1915: 1246; Schedl 1959h: 99, 1961b: 185, 1962a: 151, 1971d: 431, 1971f: 147, 1980a: 24, 1981b: 84; Schilsky 1909: 188; Schimitschek 1938b: 115; Schreiner 1897: 369; Sierpinski 1966b: 60; Stark 1927b: 90, 1952: 389; Stein & Weise 1877: 165; Tredl 1907: 15; Tschorbadjiev 1929: 173; Wichmann 1927a: 75; Zinojinovic 1960. (**tx**) Alkan 1946: 113; Balachowsky 1943a, 1947, 1949a: 249; Barbey 1901: 26, 99; Charvat 1950; Chorbadzhievo 1924d; Dombrowsky 1887, 1892; Eggers 1920: 125–126, 1922c: 119, 1926b, 1933f: 5, 50; Eichhoff 1878b: 282, 1883b: 219; Endrodi 1957a: 307, 1957b; Escherich 1923b: 484, 552; Fauvel 1889; Fleischer 1927; Fraser 1920; Fuchs 1911a; Grune 1979: 134–135; Hagedorn 1910a: 104; Hellrigl 1985; Henschel 1885a, 1895a: 181; Joly 1976, 1976b:pl. 10; Judeich & Nitsche 1895: 501; Karpinski & Strawinski 1948: 157; Knotek 1892a: 38; Koch 1913: 118, 1932: 124; Lucht 1987: 279; Murayama 1939: 140–141; Negru 1966b: 403; Nobuchi 1974: 37, pls. 1–2; Nunberg 1928: 211–215, 1929c: 123, 1947: 99–108; Nusslin 1911a: 255; Pfeffer 1932b: 24, 1946b: 117, 1984: 274, 1989a:pl. 10; Plaza & Gil 1982: 260, 262; Postner 1974: 444; Quaschik 1953: 35; Reitter 1887b: 197, 1894a: 79, 1913a: 100, 1916: 301, 352; Rhumbler 1922: 323, 1927: 338; Schedl 1934f: 1644, 1946a: 14, 1962a: 155, 1980a: 24, 1981b: 84; Schimitschek 1937c: 56,

1955c: 89; Seitner 1887: 45; Spessivtsev 1913a: 70; Stark 1936: 146, 1952: 389; Wachtl 1895: 8; Weber, L. 1912: 30. (**ms**) Schimitschek 1930b: 407; Sedlaczek 1904: 359; Seitner 1913a: 27; Weber, L. 1912: 30.

pilidens Reitter 1894a: 79. Syntypes, sex?; Corsica; NHMB, Budapest. Synonymy: Eggers 1922d: 119, Pfeffer 1984: 275.

References: (**ay**) Fuchs 1911a. (**cn**) Chorbadzhievo 1929; Pierce, W. D. 1917: 69; Rhumbler 1922: 323, 1927: 339; Rudnev 1965b; Schimitschek 1944: 186. (**ec**) Apfelbeck 1916b: 429–439; Chararas 1957d; Kleine 1908c: 214; Kolubajiv 1954: 221; Nuorteva 1957b: 53; Schimitschek 1930a: 281; Thompson, W. R. 1943: 59. (**hb**) Apfelbeck 1916b, 1917; Chorbadzhievo 1929; Fuchs 1906b; Knotek 1898b: 333, 1899b: 7, 1901: 567; Rhumbler 1922: 323, 1927: 339; Schimitschek 1930a: 281, 1944: 186; Tschorbadjiev 1929: 173. (**ds**) Ammann & Knabl 1923; Barthe 1896; Buresh & Lazarov 1956; Chorbadzhievo 1929; Fedorov 1930; Fuchs 1906b; Hagedorn 1910d: 57; Heyden, Reitter, & Weise 1906: 712; Kleine 1913a: 35, 1913b: 131; Knotek 1898b: 333, 1899b: 7, 1901: 567; Kolubajiv 1934: 65; Langhoffer 1915c: 158; Linder 1946: 203; Murayama 1939: 140; Pfeffer 1935: 158, 1936: 90; Pierce, W. D. 1917: 69; Pittioni 1943: 176; Reitter 1894a: 79, 1898a: 140, 1916: 301; Rudnev 1965b; Sainte-Claire 1914: 473; Schaufuss 1915: 1246; Schilsky 1909: 188; Stark 1936e: 146; Tredl 1907: 15; Tschorbadjiev 1929: 173. (**tx**) Balachowsky 1949a: 259; Eggers 1911: 122, 1922d: 119; Fuchs 1911a; Hagedorn 1910a: 105; Pfeffer 1984: 275; Portevin 1935: 335; Reitter 1894a: 79, 1913a: 101, 1916: 301; Rhumbler 1922: 323, 1927: 339; Schedl 1934f: 1644; Strohmeyer 1929: 181; Weber 1912: 30.

pilidens albanicus Apfelbeck 1896:(?). Syntypes, sex?; Merdita (Albanien); not located. Synonymy: Schedl 1979c: 127.

Notes: (3) Eggers 1911a: 122 (cited as a var. of *pilidens*).

References: (**tx**) Apfelbeck 1896:(?); Eggers 1911a: 122; Endrodi 1957: 418; Murayama 1939: 140; Schedl 1934f: 1644, 1979c: 127.

herbellae Strohmeyer 1929b: 181. Syntypes, sex?; Spain: Sierra de Guadaramma; not located. Synonymy: Pfeffer 1984: 275.

References: (**bv**) Grune 1979: 133. (**cn**) Pfeffer 1960: 345; Postner 1974: 445; Souphieff & Scherbinovskaja 1937: 47. (**ds**) Grune 1979: 133; Kleine 1934a: 152; Pfeffer 1960: 345; Postner 1974: 445; Souphieff & Scherbinovskaja 1937: 47. (**tx**) Grune 1979: 133; Pfeffer 1984: 275; Schedl 1934f: 1644, 1962a: 150; Strohmeyer 1929b: 181.

***calcaratus* (Eichhoff)** 1878b: 280 (*Tomicus*). Syntypes, sex?; Nizzam; Hamburg Museum, lost.

Figures: Grune 1979: 134, Plaza & Gil 1982: 260, 262.

Distribution: Africa (Algeria/ Morocco/ Tunisia), Asia (Israel/ Syria/ Turkey), Europe (Corsica/ S France/ Greece/ Hungary/ Italy/ Sardinia/ Spain/ W USSR/ Yugoslavia).

Hosts: *Pinus brutia, P. halepensis, P. maritima, P. radiata, P. sylvestris*.

Notes: (3) Dejean 1837: 332 (*calcaratus*, nomen nudum).

References: (**bv**) Baader 1989; Chararas 1982; Grune 1979: 135; Mendel 1988a; Mendel, Madar, & Golan 1985. (**cn**) Baader 1989; Bodenheimer & Neumark 1955; Chararas 1976c, 1977c, 1978; Georgebits 1974; Grandi 1951; Halperin, Mendel, & Golan 1982; Joly 1976; Kailidis & Markalas 1988; Mendel 1987, 1988c, 1988d; Mendel et al. 1983. (**ec**) Arnoldi et al. 1955: 717; Bodenheimer & Neumark 1955: 1–122; Chararas 1964b; Fry 1989: 17; Halperin & Holzschuh 1984: 28; Kailidis 1966a; Mendel 1985, 1986a, 1986c: 115, 1986d: 130, 1988c, 1988d; Mendel & Halperin 1981; Mendel, Pooler, & Livne 1989; Normand 1937: 269; Novak, P. 1952: 417; Purrini & Halperin 1982, 1983; Thompson, W. R. 1943: 59; Wilkinson 1935: 72. (**hb**) Bodenheimer 1935; Chararas 1962c: 358; Georgebits 1974; Grandi 1951; Halperin & Holzschuh 1984: 28; Joly 1976; Masutti 1964; Mendel 1987; Mendel, Madar, & Golan 1985; Postner 1974: 444; Schedl 1962a: 149. (**ds**) Bodenheimer 1935; Dejean 1821, 1825, 1837; Georgebits 1974; Grune 1979: 135; Halperin 1966: 68, 1969: 329; Halperin & Holzschuh 1984: 28; Joly 1976; Kailidis 1985; Kailidis & Markalas 1988; Kleine 1913a: 245; Novak 1952: 417; Pfeffer 1947d: 126; Plaza & Gil 1982: 260; Postner 1974: 444; Sainte-Claire & Mequignon 1938: 448; Schedl 1961b: 185, 1962a: 149, 1964a, 1969g: 291, 1971d: 426, 1972n: 351, 1978e: 37, 1979i: 291; Spaic 1964: 226–236; Stein & Weise 1877: 165; Sturm 1843: 230; Supatashvili, Shalibashvili, & Supatashvili 1972. (**tx**) Balachowsky 1947, 1949a: 249, 253; Dejean 1821, 1825; Eggers 1922d: 119; Eichhoff 1878b: 280; Grune 1979: 134–135; Joly 1976; Pfeffer 1946b: 117, 1984: 274; Plaza & Gil 1982: 260, 262; Postner 1974: 444; Schedl 1934f: 1644, 1962a: 149; Wachtl 1895: 8. (**ms**) Chararas 1971a: 853; Mendel 1986a.

lipperti Henschel 1885a: 242 (*Tomicus*). Syntypes ♂ ♀; Insel Meleba (Dalmatien); Henschel Collection. Synonymy: Eggers 1922d: 118.

Notes: (3) This is *bistridentatus* of Eichhoff 1881a: 260, a misidentification. Eggers 1922d: 119 proposed the new name *alpinus*, nomen nudum, for Eichhoff's misidentified series; consequently, the name *alpinus* Eggers has no status in nomenclature because *bistridentatus* Eichhoff 1881a was not an available name.

References: (**ay**) Fuchs 1911a; Schwerdtfeger 1929: 403. (**cn**) Barbey 1925: 248; Pierce, W. D. 1917: 417; Rhumbler 1922: 323, 1927: 339; Schimitschek 1937c: 56, 1944: 187, 1955c: 89; Wachtl 1901: 381. (**ec**) Barbey 1924b; Kleine 1908c: 214, 1944: 78; Nusslin 1927: 339; Ruschka 1925: 202; Schwerdtfeger 1929: 403; Thompson, W. R. 1943: 59 (**hb**) Barbey 1906c, 1925: 248; Bargmann 1906; Dombrowsky 1887, 1892; Henschel 1895a: 184; Knotek 1899b: 4, 1901: 567; Nusslin 1927: 339; Peyerimhoff 1919: 255; Rhumbler 1922: 323, 1927: 339; Schimitschek 1944: 187; Schwerdtfeger 1929: 403; Stark 1952: 389; Wachtl 1901: 381. (**ds**) Arnoldi et al. 1955: 718; Barbey 1907: 440–443, 1924b; Csiki 1914; Eggers 1912f; Ganglbauer 1904; Hagedorn 1910d: 56; Hariri 1971: 262; Henschel 1895a: 184; Heyden, Reitter, & Weise 1891: 672, 1906: 712; Kleine 1913b: 131, 1914a: 16, 1934a: 152; Knotek 1899b: 4, 1901: 567; Langhoffer 1915c: 158; Novak, P. 1964; Peyerimhoff 1919: 255, 1933b: 367; Pierce, W. D. 1917: 74; Pittioni 1943: 176; Reitter 1894a: 79; Sahlberg 1903b: 63; Schaufuss 1915: 1246; Schilsky 1909: 188; Stark 1936e: 146, 1952: 389; Tredl 1907: 15. (**tx**) Balachowsky 1949a: 253; Barbey 1906c; Bargmann 1897b; Dombrowsky 1887, 1892; Eggers 1912f: 29, 1922d: 118; Fauvel 1887; Fuchs 1911a; Hagedorn 1910a: 105; Henschel 1885a: 242, 1895a: 184; Reitter 1889c: 374, 1894a: 79, 1913a: 101; Rhumbler 1922: 323, 1927: 339; Schedl 1934f: 1644; Schimitschek 1937c: 56, 1955c: 89; Sokanovskii 1958: 39; Stark 1936: 146, 148, 1952: 389; Strohmeyer 1929: 181; Wachtl 1895: 8; Weber, L. 1912: 30. (**ms**) Sedlaczek 1913: 455; Weber, L. 1912: 30.

opacifrons Reitter 1913a: 99. Syntypes, sex?; Vernet, Sommieres [S France]; NHMB, Budapest. Synonymy: Schedl 1962a: 150.
References: (**ds**) Schedl 1938d: 450. (**tx**) Balachowsky 1949a: 252; Eggers 1914: 107–108; Portevin 1935: 335; Reitter 1913a: 98–99; Schedl 1934f: 1644, 1962a: 150.

***carinulatus* (LeConte)** 1874: 70 (*Cryphalus*). Lectotype ♀; California [USA]; MCZ, Cambridge, designated by Wood 1982b: 653.
Figures: Bright 1976d: 146, Bright & Stark 1973: 159.
Distribution: North America (British Columbia in Canada/ Chihuahua in Mexico/ Arizona, California, Colorado, Idaho, Montana, Nebraska, Nevada, New Mexico, Oregon, South Dakota, Utah, Washington, Wyoming in USA).
Hosts: *Pinus ponderosa, P. jeffreyi,* uncommon in other *P.* spp., rare in other conifers.
References: (**bv**) Baader 1989; Jacobson 1972; Miller & Keen 1960: 116; Vite 1965a: 267; Vite & Pitman 1967: 683–701. (**cn**) Arno & Hoff 1989; Baader 1989; Blackman 1931c: 34–35; Brown, G. S. 1954; Chamberlin 1924, 1939: 407, 1958: 177–178; Doane et al. 1936; Essig 1926: 520, 1958: 520; Hopkins 1904a: 17, 44; Keen 1929: 53, 1938: 118, 1952c: 152; Kinghorn 1955a: 502; Lindgren 1980a: 67; Loomis, Hofacker, & Tucker 1985: 26; Miller & Keen 1960: 116; Randall 1952: 4; Sharon & O'Neil 1985; Swaine 1918a: 105–106. (**ec**) Blackman 1931c; Craighead et al. 1927; Furniss, R. L. & Carolin 1977: 399; Keen 1938: 118; Miller & Keen 1960: 116. (**hb**) Blackman 1931c; Bright 1976d: 141; Bright & Stark 1973: 79; Chamberlin 1939: 407, 1958: 177–178; Doane et al. 1936; Essig 1926: 520, 1958: 520; Furniss, R. L. & Carolin 1977: 399; Hopkins 1904a: 17, 44; Keen 1929: 53, 1938: 118, 1952c: 152; Lindgren 1980a: 76; Miller & Keen 1960: 116; Pierce, W. D. 1907: 291; Schwarz 1894b: 255; Swaine 1918a: 105, 106; Wood, S. L. 1982b: 653. (**ds**) Atkinson & Equihua 1988: 94; Bright 1976d: 141; Bright & Stark 1973: 79; Chamberlin 1917, 1925, 1939: 407, 1958: 177–178; Cockerell et al. 1907; Currie 1905; Essig 1926: 520, 1958: 520; Evans, D. 1983: 34; Evans, D., Lowe, & Hunt 1978; Furniss, M. M. & Furniss 1972; Furniss, R. L. & Carolin 1977: 399; Gast et al. 1989: 385; Hagedorn 1910d: 51; Henshaw 1882: 268, 1885: 147; Hopping 1922, 1924: 125–128; Horning & Barr 1970: 41; Keen 1929: 35, 53, 1938: 118, 1952c: 152; Kleine 1914b: 397, 1915b: 131, 1934a: 151; Leng 1920: 341; Patterson & Hatch 1945: 153; Schuder 1969: 78; Schwarz 1886: 41; Swaine 1909: 132; Wickham 1896a: 309, 1896b: 170; Wood, S. L. 1972a: 417. (**tx**) Balachowsky 1947; Blackman 1921: 15–16; Bright 1976d: 141, 146; Bright & Stark 1973: 159; Chamberlin 1939: 407, 1958: 177–178; Eichhoff 1896: 609; Endrodi 1957: 418; Evans, D. 1983: 34; Fall 1926: 208; Hagedorn 1910a: 104; Keen 1929: 35; LeConte 1874: 70, 1876: 352, 1878: 624; Schwarz 1886: 41, 1891a: 168, 1894: 255; Swaine 1909: 132, 1918a: 105–106; Wood, S. L. 1972a: 417, 1982b: 653.

hamatus LeConte 1874: 72 (*Xyleborus*). Lectotype ♂; Mojave Desert, California [USA]; MCZ, Cambridge, designated by Wood 1982b: 653. Synonymy: LeConte 1878: 624.
References: (**ds**) Fall & Cockerell 1907: 217; Henshaw 1882: 268; Leng 1920: 341; Swaine 1909: 132. (**tx**) LeConte 1874: 72, 1876: 360, 1878: 624; Swaine 1909: 132.

***chalcographus* (Linnaeus)** 1761: 143 (*Dermestes*). Syntypes 2 ♂; Sweden; UZMC, Copenhagen.
Figures: Balachowsky 1949a: 16, 246, 248, 250, Bevan 1987: 115, Chararas 1960a, 1961c, Postner 1974: 441, Yin, Huang, & Li 1984: 123.
Distribution: Antilles Islands (introduced into Jamaica), Asia (Heilongjiang, Sichuan in China/ Japan/ Korea/ Kuril Islands/ Turkey/ Sakhalin Island, Siberia in E USSR), Europe (Austria/ Belgium/ Denmark/ England/ Finland/ France/ Germany/

Greece/ Hungary/ Norway/ Poland/ Sweden/ Switzerland/ W USSR/ Yugoslavia).
Hosts: *Pinus* spp., *Picea* spp., *Abies* spp., *Larix* spp.
Notes: (3) Dejean 1837: 332 (named *Bostrichus bicolor*, nomen nudum, a synonym).
References: (**ay**) Chararas 1956a, 1956c, 1971b, 1977b; Doganlar 1984; Escherich 1923b: 458, 484, 595; Feytaud 1950a; Francke-Grosmann 1959; Fuchs 1911a; Fuhrer 1977, 1978, 1980a; Fuhrer & Klipstein 1980; Klipstein 1985, 1986: 285; Leisewitz 1906: 98; Lekander 1959b: 33; Nunberg 1928a: 141; Nusslin 1911a: 60; Ritzengruber & Fuhrer 1986; Robertson 1961; Scherb 1971; Schevyrew 1889a: 22; Schonherr 1970b; Schwerdtfeger 1926: 90, 1929: 334, 427; Vogel 1986; Vyplel 1985; Zumr & Soldan 1981. (**bv**) Annila 1975: 8; Annila & Petaisto 1978; Baader 1989; Baeckstrom et al. 1988; Benz, Bovey, & Junod 1986; Butovitsch 1971; Byers 1983b; Byers, Anderbrandt, & Lofqvist 1989; Byers et al. 1988, 1989; Cerezke 1964: 498; Chararas 1956: 113–213, 1960b: 24–41, 1960c: 82–97, 1966b, 1971b, 1977b, 1982; Chararas & Deschamps 1962; Choo, Woo, & Park 1988; Duelli, Studer, & Naf 1986; Eidmann 1965b, 1987; Francke et al. 1977; Fuhler & Muhlenbrock 1983; Gavyalis & Jakaitis 1981; Gerkern 1978; Gries & Sanders 1981; Grune 1979: 129; Heuer & Vite 1984a; Hilker 1984; Hogberg et al. 1987; Jacobson 1972; Jahn 1981, 1982; Johnson 1960a: 17; Kevdina 1897: 108; Klassen, Ridgway, & Inscoe 1982; Kohnle & Klimetzek 1984; Lekander 1972b, 1972c; Luitjes 1976; Magema, Gasper, & Severin 1982; Mori et al. 1979; Mozolevskaya, Lebedeva, & Galaseva 1979; Naumann-Etienne 1978a; Novak, V. 1962b; Nuorteva 1956c: 17; Prell 1930c: 631, 1931: 369; Regnander 1975c; Reid 1958d: 505; Rozhkov 1970: 145; Rutledge, Chararas, & Ducauze 1988; Saarenmaa 1978; Schnaider 1955: 233; Schwerdtfeger 1981: 192; Simioescu 1978; Smith, L. R., Williams, & Silberstein 1978; Sturies & Fuhrer 1979; Vasechko 1971a, 1971b; Vite 1965: 438–439, 1980; Vite & Pitman 1967: 683–701; Weber, R. & Schurig 1984; Wegensteiner, Lorbeer, & Fuhrer 1989; Wichmann 1967; Zumr 1988; Zumr & Landa 1985. (**cn**) Acloque 1914; Androic 1966: 49; Anonymous 1960u, 1967r, 1970p, 1972i, 1975a, 1976d, 1977r, 1978i, 1978w, 1979p, 1980g, 1984b; Apfelbeck 1916: 429–430; Ass & Funtikow 1941; Austara 1975; Austara et al. 1983; Baader 1989; Baisch 1954: 319; Bakke 1960: 317; Barbey 1906a, 1922b, 1925: 67; Becker 1950; Bejer-Petersen 1959a, 1978, 1981; Berwig 1950; Berwig & Schuhly 1964: 17–20; Bjorkhen et al. 1977; Blanchere & Robert 1889; Blandford 1892a; Blondein 1876; Boas 1933: 268–280; Borcea 1924: 221–260; Borodajewsky 1930: 249–251, 805–811, 1931: 157–159; Brauner 1985; Browne 1968b: 562; Butovitsch & Spaack 1939: 1–120; Byers, Anderbrandt, & Loqvist 1989; Chararas 1960a, 1961b: 79, 1972; Chorbadzhievo 1929; Chrystal 1935, 1949b: 3–11; Cogho 1876b; Dammes 1857; Demme 1948; Desfarges 1951; Dobrodejev 1924: 70–76; Duelli, Studer, & Naf 1986; Eckstein 1915, 1926: 574; Ehnstrom 1985; Ehnstrom et al. 1974; Eickstedt 1949; Eidmann 1965c, 1970a, 1973, 1975c, 1984, 1985a, 1985b, 1987; Eidmann & Klingstrom 1976: 240; Elfving 1904; Elton 1949b; Escherich 1917: 97–115, 1923b: 458, 484, 595, 1929, 1930a, 1932a, 1936; Esterberg 1959; Feytaud 1950a; Fice 1961: 173–204; Fleischer 1875c; Florov 1949: 98; Franz 1948a, 1948b, 1948e, 1948g, 1949b; Fuhrer 1976; Funke 1870; Fystro & Bakke 1962; Gabler 1947a; Galoux 1948b, 1948e; Georgescu et al. 1957: 357, 458; Gradojevic 1933: 789–790, 1938, 1940; Grandi 1951; Guiese et al. 1958; Hadorn 1948a; Halla 1875; Hanson, H. S. 1940a; Hartig 1861: 330, 1877: 196; Hasek 1955, 1971: 5; Herlein 1878; Hess 1898: 346, 1907: 248; Hess & Beck 1914: 279, 1927: 335; Hochmut 1977; Hrubik 1973; Husson 1955: 535; Iatsentkovski 1922: 7–9; Inouye 1955; Inouye & Yamaguchi 1955a: 235; Isaev, Khlebopros, & Nedorezov 1980; Jaensch 1938: 49; Jager 1985; Jahn 1952a: 98, 1959: 220; Joly 1949b: 253, 1976; Jondelius et al. 1973; Judeich & Nitsche 1895: 504, 516; Juutinen 1960: 25; Kalandra 1944, 1948c: 33–38; Kangas 1937, 1939, 1958d: 164, 1966b; Karner & Kliefoth 1976; Kataev 1868: 125; Kauschinger 1893: 140; Keller 1903b: 48; Kholodkovskii 1912: 278, 308; Klauser 1954: 285; Klieber 1930: 183; Klimesch 1931: 40; Koberg 1969: 102–110; Koch 1913: 119; Kohnle 1984; Kolmodin 1915: 217; Konig, E. 1971; Koning 1939: 2015; Konopka 1871: 35; Koppen 1882: 236, 258; Kovacevic 1924: 21–22, 1952: 64, 1957: 67; Kozikowski 1925: 18–23; Kruel 1950: 7; Kudler et al. 1956: 100; Kuhn 1949b: 64; Kurenzov 1935c: 189, 1956b: 29; Lanz 1975; Lanz Baeskow 1986; Lauenstein 1966; Lekander 1935c: 189, 1952b: 5, 1954b: 12, 1955b: 17; Lekander & Rennerfelt 1955: 15, 1972b, 1972c; Lekander, M. 1951: 51; Lindelow & Iacobaeus 1985; Lindgren 1980a: 67; Lohrenz 1907: 46; Lonshehakov & Lure 1960; Lozovoi 1950c: 308; Lozovoi & Tropin 1965, 1967; MacDougall 1921; Maksimovic 1962; Maksimovic & Barlov 1961: 37; Maksimovic & Boskovic 1962; Maksimovic & Milanovic 1964, 1966; Malenotti 1924; Marcu 1926c: 66, 1930: 327–336; Marker-Kohlfurt 1896: 84; Martinek 1953c: 372, 1964; Mathiesen 1951: 215, 1952: 285; Mathiesen-Kaarik 1953: 6, 23; Melnikova 1960: 19–45; Merker & Muller 1951: 16–20; Metalmann 1951: 17; Mokrzecki 1925c: 44; Mrkva 1960: 409–418; Muller 1912: 186; Mumford 1960: 37, 1962: 35, 1965: 30, 1966: 38; Nestertschuk 1930: 176; Niemeyer 1974: 290, 1975: 155, 1976: 138, 1982; Niemeyer & Thalenhorst 1974; Nilssen, A. C. 1978a; Nilsson, S. 1974a: 32; Nishiguchi 1957: 69–79, 1961: 142–145; Nordlinger 1870b: 261;

Nosek 1951: 106; Novak, V. 1959b: 65, 1967, 1972a; Novak, V., Hrozinka, & Stary 1976: 35; Novak, V. & Srot 1977; Nuorteva 1955c: 1, 1968: 50; Nusslin 1912a: 293, 1913: 206; Ohnesorge 1955: 278; Opperman 1985; Otto 1979; Palm 1948b: 214; Pfeffer 1928a: 468, 1940c: 273, 1947c: 204, 1948a: 799, 1949b: 147, 1950c: 1; Pierce, W. D. 1917: 69; Pomocnicze 1876: 153; Popovic 1931: 57; Postner 1971; Postner & Wellenstein 1954: 459; Prosoroff 1933: 463–466; Quaschik 1953: 8; Ratzeburg 1871c: 81; Regnander 1975a, 1975c, 1977; Reisch 1960; Remrod 1977; Rhumbler 1922: 323, 1927: 338; Ringselle 1972; Ritzengruber & Fuhrer 1986; Roediger 1988; Rosenfeld 1919: 29–37, 1926: 38; Rossem 1949: 64, 72; Rudnev 1958: 310–313, 1965b, 1966; Ruhm 1958: 287; Saalas 1919, 1949: 343, 381; Sajevyc 1928: 329; Schedl 1936a: 538, 1938b: 332; Scheidter 1936: 236; Schimitschek 1932c: 231, 1935a: 197, 1935b: 148, 1937c: 56, 1938b: 115, 1947g: 191, 1949b: 165, 1950: 14, 1952a: 194, 1955a: 36–37, 1955b: 102, 1955c: 88, 1956: 341, 1961a: 154; Schmidt 1881: 31; Schneiberg 1925: 495; Schneider-Orelli 1948a: 77, 1948b: 72; Schneider-Orelli & Kuhn 1948: 518; Schonherr 1958b: 89; Schuster 1918: 102; Schwappach et al. 1929: 186; Schwarz 1938b: 144, 1938c: 288; Schwerdtfeger 1926: 89–91, 1929: 335–347, 1944a: 180, 1946b: 62, 1948c: 57, 1950a: 64, 1950b: 62, 1957a: 186; Sedlaczek 1921: 335, 1933: 307, 1936: 200; Severin 1902a: 81; Shiraki 1952; Shishow 1928: 673–675; Shkarednyi 1981; Sierpinski 1958: 69; Sinreich 1961: 165; Slander 1948: 10; Sokanovskii 1932a: 363; Spaic 1955: 454, 1956: 88; Sponeck 1817: 344; Springer 1936b: 178; Stark 1925: 78–81, 1927: 227–230; Strohmeyer 1950: 21; Tamanuki 1933: 1–54; Templin 1973: 105; Thalenhorst 1948: 293, 1950: 90, 1953: 16; Thomson, M. 1939: 199–208; Titova 1959: 110–126, 1960, 1966; Tragardh 1917: 28, 1927c: 86, 1938a: 12; Tragardh & Butovitsch 1936: 356, 1938: 200; Trofimov 1979; Troitskii 1968: 40–43; Tubeuf 1933: 193–242, 257; Vajda 1949: 271; Vappula 1965: 153; Vasechko 1964; Virkki 1960: 3–16; Vite 1955: 1333–1336, 1956: 59, 1965b; Wachtl 1901: 381; Wagner 1954c: 167; Wardle 1929: 322; Wauthoz 1954: 245; Weber, H. 1926: 574; Weber, T. 1965; Weiss 1922: 73; Wellenstein 1951a: 1, 1952a: 688, 1954: 54; Westerboer & Bernard 1963: 530; Wichmann 1927b: 352; Wilke 1931: 628; Wohlmann 1936: 41; Wolff & Krausse 1922: 93; Wolfle 1948b: 259, 1949: 479, 1951: 169; Zhang et al. 1958: 29; Zhuravlev & Osmolovskii 1949: 52; Zumr 1988; Zumr & Landa 1985; Zwolfer 1949: 399, 1960, 1962, 1963. (**ec**) Andreev 1988; Annila 1975: 11, 1977; Annila & Petaisto 1978; Apfelbeck 1916b; Ass & Funtikow 1941; Baisch 1954: 319; Bakke 1956a: 40–42; Balazy 1962, 1965a, 1968; Balazy & Michalski 1960, 1962b, 1964a; Barbey 1906a, 1927; Beran 1933, 1936; Boas 1901; Brammanis 1938, 1940: 257–340; Butovitsch 1971; Capek 1957; Carpelan 1944; Chararas 1956b, 1957d, 1958b, 1959a, 1959c, 1959d, 1959e, 1959g, 1960b; Choo, Woo, & Park 1983: 176; Cooreman 1963: 46; Davidson 1967: 928–932; Eidmann 1965c, 1974b; Elliot & Morley 1907; Fleischer 1875c, 1877b; Francke-Grosmann 1931, 1959; Fuchs 1930, 1938; Fuhrer 1980b, 1981, 1985; Furniss 1968: 1384–1389; Gadek 1976; Galoux 1947a, 1947c, 1947d, 1948a: 2, 7; Gauss 1954a: 423; Gauss & Willenstein 1950; Geschwind 1918; Graham 1969: 875; Gries 1986; Grossmann 1931; Grunwald 1986; Gyorfi 1941b, 1943: 84, 1952b, 1962: 213; Hadorn 1948a; Harding, Lapis, & Bejer 1986; Heliovaara & Lilja 1989; Hellrigl & Schwenke 1985: 48; Heqvist 1963: 154; Heuer & Vite 1984a, 1984b; Hirschmann 1971b: 39, 1978b; Hirschmann & Wisniewski 1982, 1983; Hirschmann & Zirnigebl-Nicol 1961; Inouye & Yamaguchi 1955a: 235; Inouye et al. 1955: 76; Jahn & Sinreich 1960b; Jamnicky 1957b: 18, 20, 1957c; Joly 1949a: 7; Kamijo 1981; Kangas 1937, 1939, 1946b: 21, 1971; Karpinski 1932a: 108; Kendrick 1962: 779; Kielczewski 1976; Kielczewski & Balazy 1966; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1980a, 1980b, 1983; Klauser 1954: 285; Kleine 1908c: 214, 1909a: 47, 1944: 70; Knoche 1908b: 149; Kohnle 1984; Kolmodin 1915: 217; Kolubajiv 1954: 22; Kolubajiv & Kalandra 1954: 30; Kosarievskaya & Mamajev 1962: 450; Kostin 1964: 114; Kudela 1981; Kuhn 1949a: 316; Kurenzov 1934a: 50, 1964: 20; Lovaszy 1941: 195; Lozovoi & Tropin 1965, 1967; Luitjes 1976; Lundberg 1984; Majewski, T. & Wisniewski 1978a: 5; Mathiesen 1951: 215, 1952: 285; Mathiesen-Kaarik 1953: 6, 23; Melnikova 1958: 90–105, 1960; Meyer 1918: 178; Michalski & Ratajczak 1989; Moor & Neffeler 1984; Moritz & Fuhrer 1988; Morr & Neffeler 1983; Mozolevskaya, Lebedeva, & Galaseva 1979; Naumann-Etienne 1978a; Neves et al. 1978; Niemeyer & Thalenhorst 1974; Nikitiuk 1951: 60; Nishiguchi 1959: 271, 1960c; Nosek 1951: 106, 1959b: 87; Novak, V. 1962b; Nunberg 1930: 201; Nunberg & Wiackowski 1958: 130; Nuorteva 1956a: 17, 1957b: 52, 1959b: 200, 1967a, 1968a, 1970, 1971: 69; Nusslin 1927: 338; Ogibin 1973b: 421; Okolow 1963; Otten 1940: 197; Palmen 1944: 60, 1946: 194; Peklo 1949: 336; Perris 1856a: 244; Pettersen 1976a, 1976b; Pfeffer 1923a: 332, 1928b: 6, 1932a: 6, 1943b: 179, 1947c: 204, 1949b: 147, 1950c: 1, 1952a: 159, 1959: 2; Pohl-Apel & Renner 1987; Poinar 1975: 166; Purrini 1977a; Purrini & Fuhrer 1979; Quaschik 1953: 8; Ratzeburg 1869a: 79; Rennerfelt 1951; Rodzianko 1915: 1–15; Rondani 1873: 140; Rosenfeld 1919: 30; Roubal 1934a: 86; Ruhm 1954c: 222, 1956b: 4, 1960: 203; Rumbold 1936: 419; Saalas 1917a: 18, 1928: 649, 1930: 118, 1937: 154, 1949: 343, 381, 1951: 13; Saarenmaa

1978; Scheidter 1936: 236; Schimitschek 1930a: 329, 1931b: 487, 1932c: 231, 1935a: 197, 1936a: 560, 1950: 14, 1952a: 194, 1953b: 45, 1955a: 36–37, 1964c: 140, 1964e; Schroeder & Eidmann 1986; Schuhly 1964; Schuster 1918: 102; Schvester 1950: 50; Schwerdtfeger 1929: 334, 427, 1944a: 180, 1950a: 64, 1950b: 62, 1957a: 186; Sedlaczek 1908: 52, 1933: 307, 1935a: 154, 1935b: 60; Seitner 1913a: 27; Slaby 1947: 379; Slander 1958: 151; Sokanovskii 1936: 74; Stark 1925b: 80; Stefanov 1949a: 106; Stora 1938: 20; Szczepanski 1960a: 409; Tenkacova & Mituch 1987; Thalenhorst 1949b: 194, 1949d: 264, 1958: 7; Thompson, W. R. 1943: 58; Thompson, W. R. & Simmonds 1964: 23, 1965: 73; Titova 1966; Tragardh 1925a: 172, 1927a: 208, 1934: 276, 1943: 132; Tsankov & Rosnev 1978; Tudor 1969: 34; Tvermyr 1967: 496; Vasechko 1971b; Vietinghoft 1924: 330; Vite 1952a: 101; Vitzthum 1923: 151; Webb 1945: 70; Weiser 1955: 375, 1961a: 329, 1963a: 301, 1969; Weissen 1981; Wettstein 1951: 67; Wichmann 1953b: 59, 1954d: 438, 1957c: 67, 1967; Wilke 1931: 628; Wisniewski 1979b; Wulf 1983; Yasumatsu & Watanabe 1965: 69; Zinovjev 1957: 330, 1958: 382; Zolk 1935: 258–294, 1937: 147–172; Zumr 1982c, 1985b.

(**hb**) Alkan 1946: 113; Altum 1881c: 304, 1883c; Annila 1971: 10, 1977; Annila & Petaisto 1978; Anonymous 1948k: 7, 1972b; Apfelbeck 1916b, 1917; Ass & Funtikow 1941: 157–179; Bach 1864; Bakke 1968b: 640; Balazy 1968; Barbey 1901: 95, 1913, 1922b, 1925: 67; Bargmann 1906; Becker 1950; Beffa 1949, 1961; Bejer-Petersen 1957, 1978; Beran 1936: 257–279; Berg 1827; Blanchere & Robert 1889; Boas 1923: 355; Bonnemaison 1953; Borcea 1924; Borodajewsky 1928, 1929b: 515–521, 1930a, 1930b, 1930c, 1958; Borodin 1976; Borowski 1958; Brandt 1948, 1960: 136; Browne 1968b: 562; Budge 1949; Budkov 1897; Butovitsch 1941: 297–360; Cecconi 1924; Chararas 1956c, 1960b, 1960c, 1961b: 9, 1962c: 326, 1972, 1977b; Charvat 1950; Chorbadzhievo 1929; Cogho 1876b; Dallimore & Munro 1922; Dingler 1928: 357–360; Dombrowsky 1887, 1892; Drugescu 1980; Duelli, Studer, & Naf 1986; Eckstein 1897, 1915, 1926: 574; Eggers 1906; Eichhoff 1881a: 51, 249, 1882a: 241, 1889: 154; Eidmann 1965b, 1974b; Eidmann & Klingstrom 1976: 248; Elfving 1904; Escherich 1923b: 458, 484, 595; Everts 1900; Feytaud 1950a; Fleischer 1875c; Fuchs 1904a, 1906c: 209, 1907: 48, 1911b; Furst 1888: 113; Galoux 1947a, 1948a; Girard 1873; Gornostaev 1916: 312; Graber 1879: 130; Grandi 1951; Gries 1984a; Gries & Sanders 1981; Gyorfi 1950: 384–400, 1957; Hagedorn 1903a; Hartig 1861: 330, 1877: 196; Helmbacher 1924; Hennings 1908c: 220, 1908d; Henschel 1876a: 35, 240, 1895a: 182; Hess 1898: 346, 1907: 248; Hess & Beck 1914: 279, 1927: 335; Holmgren 1867: 113, 134; Hufnagl & Puzyr 1951: 109, 118; Inouye et al. 1955: 76; Jaensch 1938: 49; Johnson & Pettinger 1961b: 2; Joly 1949a: 7, 1976a, 1976b; Judeich & Nitsche 1895: 504, 516; Karner & Kliefoth 1976; Karpinski 1933b: 34; Karpinski & Strawinski 1948: 157; Karsch 1883: 141; Kauschinger 1883: 103, 1893: 140; Kholodkovskii 1912: 278, 308; Klipstein 1986: 131; Knotek 1894a: 558, 1897: 160, 1898b: 333; Komarek et al. 1931; Konig, E. 1971; Kostin 1960: 134; Kraemer 1948: 133, 1953: 463; Krivolutskaya 1956: 834, 1960, 1973: 141; Kudela 1981; Kurenzov 1935a: 39, 1948b: 101, 1950d: 149; Lekander 1954b: 12, 1959a: 84, 1959b: 33, 1972b, 1972c; Lekander & Rennerfelt 1955: 1–36; Lengerken 1939: 65, 1954: 86; Liese 1950: 140; Lindemann 1875a: 131, 1881a: 233; Lindgren 1980a: 67; Lohrenz 1907: 46; Loos 1913: 411; Louzil 1961: 44; Lozovoi & Tropin 1965, 1967; Luitjes 1976; Lunardoni & Leonardi 1889: 476; MacDougall 1921: 111; Madon 1930: 99; Magema, Gasper, & Severin 1982; Maslov & Demakov 1982; Melnikova 1960; Michalski 1959a: 291; Morstatt 1924: 46; Mozolevskaya, Lebedeva, & Galaseva 1979; Naumann-Etienne 1978a; Niisima 1908b: 18; Nilssen 1984; Nordlinger 1856: 21, 1870b: 261; Nosek 1959b: 87; Novak, V., Hrozinka, & Stary 1976: 35; Nunberg 1929a: 111, 1929c: 123; Nuorteva 1956c: 17, 1967a, 1968a, 1970; Nusslin 1898: 283, 1904: 2, 1905a: 84, 1906b: 8, 14, 1913: 206, 1927: 338; Ogibin 1973b: 421; Ohnesorge 1955: 278; Orest 1927: 58; Pauly 1892a: 194; Perris 1856a: 244; Petrenko 1966; Pfeffer 1941b: 1, 1941c: 5, 1952a: 159, 1989a: 68; Postner 1974: 441; Prell 1930c: 631, 1931: 369; Quaschik 1953: 8; Rakhov 1961: 207–213, 1962; Ratzeburg 1837: 131, 1839: 158, 191, 1871c: 81; Regnander 1975a, 1975c, 1977; Reid 1958d: 505; Richter 1965: 339–344; Rhumbler 1922: 323, 1927: 338; Rimski-Korsakov et al. 1949: 291; Rodd 1897: 34; Roediger 1988; Rozhkov 1970: 145; Rupertsberger 1879: 231, 1880: 231; Saalas 1913a: 67, 86, 1949: 343, 381, 1951: 13; Sanders 1983; Sanders & Horn 1982; Schedl 1962a: 136, 1981b: 83; Schevyrew 1905c: 192; Schimitschek 1930a: 329, 1955a: 36–37; Schishov 1928a: 673; Schmidt 1881: 31; Schnaider 1954: 174; Schnaider & Sierpinski 1955: 60; Schoch 1878: 387; Schwappach et al. 1929: 186; Schwerdtfeger 1929: 334, 427, 1944a: 180, 1948, 1957a: 186, 1981: 192; Sedlaczek 1921: 335, 1935a: 154; Severin 1902a: 81; Shkarednyi 1981; Simionescu 1978; Slander 1952: 1–9, 1958: 151; Sokanovskii 1932a: 363; Spessivtsev 1913a: 71, 1923: 206, 1934: 207; Springer 1936: 201–202; Stark 1926a: 337, 1952: 377; Stebbing 1909b: 29; Stefanov 1949a: 106; Sturies & Fuhrer 1979; Taschenberg 1880: 223; Thalenhorst 1958: 7; Tragardh 1914: 82, 1927c: 86, 1930c: 474, 1935, 1939b: 151, 221; Tredl 1908b: 138; Tschorbadjiev 1929: 172; Vasechko 1971a, 1971b; Vite 1952a: 101; Vogel 1925: 346–348; Wachtl 1876a: 454, 1901: 381; Wang 1982; Weber, H. 1926: 574;

Wichmann 1927b: 352; Wolff & Krause 1922: 93; Zinovjev 1957: 330, 1958: 382; Zivojinovic 1950: 299–310, 1960: 25; Zivojinovic & Petrovic 1955: 248–257; Zumr 1982c, 1982d; Zumr & Soldan 1981. (**ds**) Acloque 1896, 1914; Allen, A. 1951b: 115; Ammann & Knabl 1913, 1923; Andersch 1851; Androic 1966: 49; Anonymous 1948k: 7, 1960u, 1967r, 1968j, 1970p, 1975a, 1976d, 1977r, 1978i, 1978w, 1979p, 1980g; Audras & Schaefer 1957; Bain 1974: 16; Bakke 1960: 317, 1968a: 640; Bakke & Kvamme 1977; Balazy & Michalski 1960; Barbey 1922b; Barthe 1896; Bau 1888; Beck 1817; Bedel 1888b: 401, 418; Beffa 1949; Bejer-Petersen & Jorum 1977: 26; Belousev 1916, 1917: 335; Benick 1921; Berg 1827; Bielz 1851, 1887; Bistrom & Vaisanen 1988: 42; Blanchere & Robert 1889; Boas 1923: 355; Bocher 1988; Borcea 1924: 221–260, 1930: 271; Borchert 1951; Brakman 1966b: 207; Brancsik 1871, 1906; Brongniart 1877; Browne 1968b: 562; Bucking 1932; Budkov 1897; Buresh & Lazarov 1956; Calwer 1884, 1893; Carpelan 1944; Cecconi 1897; Chapuis & Candeze 1853; Chararas 1961c: 92, 1983: 85; Charvat 1950; Cho 1957; Choo & Woo 1985: 165; Choo, Woo, & Nobuchi 1988a: 134; Choo, Woo, & Park 1988; Chorbadzhievo 1924d, 1929; Chrystal 1937; Csiki 1914; Dallimore & Munro 1922: 189–193; Debatisse 1945; Dejean 1821, 1825, 1837; Duftschmidt 1825; Eder 1934; Eggers 1904, 1906, 1912d; Eidmann 1974b; Elton 1949b; Endrodi 1958a, 1958b; Ericson & Sandin 1893; Ermisch 1953; Escherich 1923b: 458, 484, 595, 1929, 1930a, 1932b; Esterberg 1928, 1959; Everts 1900, 1925; Favre 1890; Ferguson 1920; Fleischer 1877b; Fleischer et al. 1921a; Forster 1849: 439; Fowler 1891; Fricken 1889: 347; Fuchs 1904b, 1905a, 1906c: 209, 1907: 48; Gabler 1949b; Gail 1906; Gaubil 1849: 126; Gauss & Wellenstein 1950; Gemminger & Harold 1872: 2690; Geschwind 1918; Goeze 1777: 130; Gornostaev 1917: 308–315; Gozis 1875: 80; Gradojevic 1933; Gredler 1866: 374, 1875: 115; Greyerz 1851; Grill 1895: 311; Grouzelle 1905; Grune 1979: 129; Gyllenhal 1827: 623; Gyorfi 1941b; Hagedorn 1903a, 1910d: 51; Hansen, V. 1939, 1956, 1964: 464; Heinemann 1908a; Hellen 1947; Heller 1881: 173; Hennig 1954: 257, 261; Henschel 1895a: 182; Heyden, Reitter, & Weise 1883: 182, 1891: 672, 1906: 712; Holdhaus & Deubel 1910: 145, 160, 199; Holmgren 1867: 113, 134; Holzel 1946: 81; Horion 1949, 1951; Hubault 1923b; Ihssen 1939: 336; Illiger 1805: 129; Jacentkovsky 1939: 76; Jamnicky 1960a; Jazentkovsky 1912: 288; Joffri 1958: 25; Joly 1949b: 253, 1976; Judeich & Nitsche 1895: 504, 516; Kaltenbach 1874: 685; Kangas 1971; Karpinski 1925: 216, 1926: 82, 1931: 32, 1932a: 108, 1933b: 34, 1948b: 231; Karpinski & Strawinski 1948: 157; Keler 1922b: 211, 1925b: 272; Kersten 1933: 70, 76; Kestercanek 1881a: 12; Kiefer et al. 1942: 529; Klauser 1954: 286; Klefbeck & Sjoberg 1960: 230; Kleine 1912a: 128, 262, 264, 268, 1913a: 35, 1913b: 131, 1914b: 257, 1934a: 152; Kloft & Hinks 1945: 218; Knotek 1892a: 38, 1894a: 558, 1898b: 333; Ko 1969: 281; Koca 1905: 192; Kolbe, W. 1908: 21; Koltze 1901: 153; Kolubajiv 1934: 64; Kono 1938b: 65; Kono & Tamanuki 1939: 89, 94; Kontkanen 1882: 236, 258; Koschitsky 1900: 83; Kovacevic 1957: 67; Kozikowsky & Kuntze 1925: 20; Kraatz 1869: 59; Kraemer 1948: 133; Krivolutskaya 1956: 834, 1960, 1965: 239, 1973: 141, 1983; Krivolutskaya & Kupyanskaya 1970; Ku, K. 1964; Kurenzov 1934a: 50, 1935a: 39, 1935c: 189, 1936a: 111, 1936b: 350, 1938a: 59, 1951b: 18, 1964: 20, 1965, 1967; Kurir 1947c: 7; Lacordaire 1866: 383; Langhoffer 1915c: 158; Leclercq 1971; Lekander 1955b: 17; Lentz 1857: 139; Liegel 1886: 43; Liese 1950: 140; Lindberg & Saris 1952: 59; Lokaj 1868: 64; Lomnicki 1886a: 243, 1913b: 148; Loos 1913: 411; Lovendal 1889a: 271, 1890c: 209; Lucht 1987: 279; Lunardoni & Leonardi 1889: 476; Lundbald 1950a: 175, 1950c: 116; Lundberg 1974: 92, 1979: 31; Mandl 1931: 25; Marcu 1926c: 66, 1957b: 213; Matthews & Fowler 1883: 42; Mequignon 1936: 15; Michalski 1957: 165; Miller 1868: 27; Mumford 1960: 37, 1962: 35, 1965: 30, 1966: 38; Munro 1920, 1921: 87, 1926: 1–27; Munster 1922a: 155, 1928: 290; Murayama 1929b: 2, 1929c: 23, 1929d: 5, 1930a: 4, 1930b: 15, 1936b: 116, 1937b: 375, 1939: 140, 1942a: 55, 1948: 2, 1949a: 13, 1950b: 1294, 1951c: 4, 1954b: 172; Negru 1966b: 403, 1968a: 457; Niisima 1908b: 18; Nobuchi 1966d: 33, 1974: 38; Nunberg 1927a: 213, 1928b: 88, 113, 1954: 74; Nuorteva 1956b: 168, 1971: 67; Nusslin 1898: 283; Orest 1926c: 66; Pacher 1865: 152; Palm 1946: 111, 122, 1948a: 91; Palmen 1944: 60, 1946: 194; Perris 1876a: 254, 1877a: 414; Pfeffer 1924b: 471, 1928b: 6, 1931b: 74, 1935: 159, 1947e: 2, 1950b: 73, 1989a: 68; Pierce, W. D. 1917: 69; Pittioni 1943: 175; Platonoff 1943: 141; Plaza & Gil 1982: 260; Pomerantzev 1907b: 492; Poppius 1900: 108; Postner 1974: 441; Rapp 1934: 729; Ratzeburg 1837: 131, 1839: 158, 191; Redtenbacher 1858: 833, 1874: 379; Reitter 1869b: 154, 1894a: 77, 1916: 299; Rimski-Korsakov et al. 1949: 291; Roubal 1935b: 73, 1936b: 193, 1941: 271; Rozhkov 1970: 145; Rudnev 1965b; Ruskov 1928c: 62; Saalas 1913a: 67, 86, 1917a: 18, 1930: 118, 1931: 68; Sahlberg 1900: 105; Sainte-Claire & Mequignon 1938: 448; Sawamoto 1940a: 96, 104; Schaufuss 1915: 1244; Schaum 1859: 96, 1862: 101; Schedl 1950d: 17, 1952f: 87, 1962a: 136, 1971f: 147, 1978e: 38, 1980a: 25, 1981b: 83; Schilsky 1909: 188; Schimitschek 1938b: 115; Schreiner 1897: 369; Schubert 1988; Schwarz 1886: 41; Schwerdtfeger 1981: 192; Seidl 1876: 4; Seidlitz 1872: 394, 1891a: 565, 1891b: 610; Sharp & Fowler 1893: 35; Shiraki 1952; Sick 1939: 110; Siebke 1875: 284; Sokanovskii 1936: 74; Sparre-Schneider 1889: 61; Stark 1926a: 337, 1926b: 105,

1926j: 127, 1931a: 27, 1931d: 549, 1936e: 144, 1952: 377; Stein 1868: 114; Stein & Weise 1877: 165; Stejskal 1920: 21; Stephens 1939: 207; Stierlin 1898: 442; Stierlin & Gautard 1871: 294; Stoling 1969: 610–627; Strand 1946: 602; Sturm 1826: 102, 1843: 230; Thomson 1865: 367, 1868: 222; Tomic 1957: 207–210; Tragardh 1914: 82, 1917, 1918, 1939b: 151, 221; Tredl 1907: 14, 1908b: 139; Tschorbadjiev 1925: 57–61, 1929: 172; Tullgren 1916: 104; Vappula 1965: 153; Villa & Villa 1833: 26; Vogel 1988; Wachtl 1876a: 454; Wanka 1915: 213; Wegelius 1960: 106; Westhoff 1882: 239; Wichmann 1909b: 173, 1927a: 75; Wiepken 1883: 89; Wilke 1931: 628; Wilken 1864: 373; Winter, T. G. 1983: 22; Yanovskii 1989: 64; Yanovskii & Dmitrienko 1983; Yanovskii & Tegshzhargal 1985: 411; Yin, Huang, & Li 1984: 122; Zinovjiev 1955: 187; Zivojinovic 1960. (**tx**) Acloque 1896; Alkan 1946: 113; Altman 1844; Bach 1854, 1864; Balachowsky 1947, 1949a: 245; Barbey 1901: 95; Bechstein 1818: 75, 214; Bechstein et al. 1808: 98; Bedel 1888b: 397, 401, 418; Beffa 1949, 1961; Bejer-Petersen 1957; Bertolini 1872; Bevan 1987: 115; Blanchere & Robert 1889; Boas 1923: 355; Brancsik 1871; Calwer 1858; Castlenau 1840; Ceballos 1945; Chapuis & Candeze 1853; Chararas 1956c, 1960a:fig. 5, 1961c: 108, 1962c: 332; Charvat 1950; Choo 1983: 85; Chorbadzhievo 1924d; Dejean 1821, 1825; Dombrowsky 1887, 1892; Duffy 1953; Duftschmidt 1825; Eggers 1914: 188, 1922d: 16–17, 1929e: 42, 1941c: 120–121; Eichhoff 1864b: 42, 1868d: 424, 1872c: 137, 1877c: 389, 1878b: 277, 1881a: 51, 249, 1883a: 114, 139, 1883b: 220, 1896: 609; Endrodi 1957b; Escherich 1923b: 458, 484, 595; Escherich & Escherich 1897; Fabricius 1775, 1787: 37, 1792: 365, 1801: 387; Fauvel 1889; Ferrant 1911; Ferrari 1867: 33–35, 1867b: 114, 1868: 256; Fleischer 1905, 1927; Formanek 1907: 39; Fricken 1889: 347; Fuchs 1911a, 1912: 308–310; Gabler 1949b; Gebien 1907: 197; Girard 1873; Gmelin 1790: 1601; Goeze 1777: 130; Grune 1979: 128–129; Gyllenhall 1813: 358, 1827: 623; Hagedorn 1910a: 104; Hansen, V. 1956, 1964: 464; Henry 1892: 10–11; Henschel 1876a: 35, 240, 1878a, 1895a: 182; Herbst 1793: 103; Hopkins 1914: 127; Jablonsky 1785: 82; Jacquelin du Val & Fairmaire 1868: 112; Jansson 1936: 220; Joly 1976, 1976b:fig, 146, 172, 248; Judeich & Nitsche 1895: 504, 516; Kalina 1970: 127; Karpinski & Strawinski 1948: 157; Knotek 1892a: 38; Koch 1913: 119, 1928: 96, 1932: 126; Krivolutskaya 1956: 834, 1958: 174; Kuhnt 1913: 1056; Kurenzov 1941a: 195, 1948b: 101; Lacordaire 1866: 383; Lekander 1959b: 33; Letzner 1891: 377; Leunis 1886: 181; Lindemann 1875a: 131, 1881a: 233; Linnaeus 1761: 143; Louzil 1961: 108; Lovendal 1889b: 60, 1890c: 209, 1898: 163; Lucht 1987: 279; Lunardoni & Leonardi 1889: 476; Murayama 1929: 23, 26, 29, 1930b: 15, 1937b: 375, 1939: 140, 142, 1950b: 1294, 1954b: 172; Negru 1966b: 403; Niisima 1909: 145, 1929: 376–381; Nobuchi 1966d: 33, pl. 5, 1974: 38, pl. 1, 2; Nordlinger 1848: 238, 1856: 21; Novak, V., Hrozinka, & Stary 1976: 35; Nunberg 1928a: 141, 1929c: 123, 1930: 200–208, 1954: 74; Nusslin 1911a: 60; Olivier 1795b: 7; Paykull 1800: 147; Perris 1877a: 414; Pfeffer 1932b: 24, 1941b: 1, 1941c: 5, 1946b: 114, 1947c: 2, 1955a: 227; Plaza & Gil 1982: 260, 262; Portevin 1935: 334; Postner 1974: 441; Quaschik 1953: 35; Ratzeburg 1837: 131, 1839: 158, 191; Redtenbacher 1849a: 356, 1849b: 26, 1858: 833, 1874: 379; Reitter 1889d: 271, 1894a: 77, 1913a: 97, 1916: 299; Rhumbler 1922: 323; Rudnev 1966: 121; Rupertsberger 1879: 231, 1880: 231; Saalas 1913a: 67, 86, 1916: 91–95, 1949: 343, 381; Sahlberg 1836: 149; Sawamoto 1940a: 96, 104; Schedl 1934f: 1644, 1936a: 521–557, 1946a: 6, 1950d: 17, 1952f: 87, 1962a: 136, 1980a: 25, 1981b: 83; Scherb 1971; Schevyrew 1889a: 22; Schimitschek 1937c: 56, 1955c: 88; Schlechtendal & Wunsche 1879: 125; Schwarz 1886: 41; Seidlitz 1872: 394, 1891a: 565, 1891b: 610; Simmel 1918: 288; Sokanovskii 1928: 667–668, 1936: 73–74, 1959a: 277–278, 1960: 677; Spessivtsev 1913a: 69–71, 1922a: 480, 1923: 200–214, 1925a: 185, 1925b: 21, 1929: 678–682, 1931: 66–67; Stark 1931: 339–343, 1952: 377; Stebbing 1909b: 29; Stephens 1939: 207; Stierlin 1898: 442; Sturies & Fuhrer 1979; Taschenberg 1880: 223; Teplouchow 1890: 261; Thomson 1865: 367, 1868: 222; Villers 1789: 214; Wachtl 1895: 7; Weber, L. 1912: 30; Yin, Huang, & Li 1984: 122. (**ms**) Anonymous 1972i; Baekstrom et al. 1988; Brandt 1960: 136; Byers 1982b; Chararas 1959d, 1971a: 853; Doganlar 1984; Eggers 1912e; Eichhoff 1868d: 424; Escherich 1932b; Fuchs 1911b; Gotz 1877; Gozis 1875: 483; Gries 1984a; Hartig 1834: 109; Heinemann 1908a; Hogberg et al. 1987; Kholodkovskii 1893: 390; Lekander 1959a: 84; Maslov & Demakov 1982; Merino-Rodriguez 1966: 47; Michalski 1959a: 291; Mori et al. 1979; Regnander 1975b; Reitter 1889d: 271; Schedl 1938b: 332; Schimitschek 1955b: 102; Schwappach 1924: 56; Schwerdtfeger 1925: 184, 1946b: 62; Sedlaczek 1913: 453, 1935b: 60, 1936: 200; Seitner 1913a: 27; Smith, L. R., Williams, & Silverstein 1978; Thalenhorst 1962: 346; Weber, L. 1912: 30; Weber, R. & Schurig 1984; Wellenstein 1951a: 1.

spinosus DeGeer 1775: 197 (*Ips*). Syntypes, sex?; Europe; not located. Synonymy: Balachowsky 1949a: 245, Schedl 1962a: 136.

References: (**ds**) Stein 1868: 114; Stein & Weise 1877: 165. (**tx**) Balachowsky 1949a: 245, DeGeer 1775: 197; Schedl 1962a: 136.

sexdentatus Olivier 1795b: 12 (*Scolytus*). Syntypes ♂; Provence, France; MNHN, Paris. Synonymy: Balachowsky 1949a: 245, Schedl 1962a: 136.

References: (**ds**) Schilsky 1909: 188; Stein

1868: 114; Stein & Weise 1877: 165. (**tx**) Balachowsky 1949a: 245; Letzner 1891: 377; Olivier 1795b: 12; Schedl 1934f: 1644, 1962a: 136.

xylographus Sahlberg 1836: 148 (*Bostrichus*). Syntypes ♂: Finland; not located. Synonymy: Balachowsky 1949a: 245, Schedl 1962a: 136.

References: (**ay**) Fuchs 1911a. (**hb**) Lindemann 1875a: 131, 1881a: 235; Wachtl 1876a: 460. (**ds**) Calwer 1884, 1893; Gemminger & Harold 1872: 2692; Heyden, Reitter, & Weise 1883: 812; Kraatz 1876a: 106; Lindemann 1884b: 264; Schaum 1862: 101; Schilsky 1909: 188; Stein 1868: 114; Stein & Weise 1877: 165; Wachtl 1876a: 460. (**tx**) Balachowsky 1949a: 245; Ferrari 1867b: 47, 109, 114; Fuchs 1911a; Lindemann 1875a: 131, 1881a: 235; Sahlberg 1836: 148–149; Schedl 1934g: 1644, 1962a: 136. (**ms**) Kraatz 1876c: 106.

***conjunctus* Reitter** 1887: 196. Syntypes, sex?; Tirol, circa 2000 m; NHMB, Budapest.

Figures: Kalina 1970: 127, Pfeffer 1989a:pl. 10.

Distribution: Asia (Hebei in China/ Japan/ Turkey/ E USSR), Europe (Austria/ Bulgaria/ Czechoslovakia/ France/ Germany/ Hungary/ Romania/ W USSR).

Hosts: *Pinus nigra, P. cembra, P. montana, P. sylvestris*.

Notes: (1) Originally named as a variety of *bistridentatus*.

References: (**bv**) Baader 1989; Benz, Bovey, & Jonud 1986; Grune 1979: 133. (**cn**) Baader 1989; Pfeffer 1948d: 235, 1949b: 150; Schimitschek 1931: 460–491, 1935a: 200, 1937c: 56, 1955c: 89; Seitner 1913a: 27. (**ec**) Jamnicky 1957c; Pfeffer 1949b: 150, 1960: 346; Schimitschek 1935a: 200; Seitner 1913a: 27. (**hb**) Bargmann 1906; Dombrowsky 1892; Henschel 1895a: 182; Pfeffer 1941b: 19, 1941c: 7; Postner 1974: 445. (**ds**) Arnoldi et al. 1955: 716–717; Borchert 1951; Endrodi 1958b, 1986: 217; Fuchs 1905a, 1913; Grune 1979: 133; Henschel 1895a: 182; Horion 1951; Jamnicky 1960a: 820–831; Nunberg 1927a: 214, 1928a: 114, 1954: 75; Pfeffer 1923b: 106, 1947c: 4, 1960: 346, 1984: 274, 1989a: 70; Postner 1974: 445; Prossen 1913: 83; Reitter 1894a: 79, 1916: 352; Roubal 1941: 271; Schilsky 1909: 188; Wanka 1908: 231. (**tx**) Balachowsky 1949a: 249; Dombrowsky 1892; Eggers 1933f: 49; Endrodi 1957a: 307, 1957b: 418; Fauvel 1889; Fuchs 1913; Greckin 1962: 706–717; Grune 1979: 133; Henschel 1895a: 182; Kalina 1970: 126–127; Nunberg 1954: 75; Pfeffer 1932b: 25, 1941b: 19, 1941c: 4, 7, 25, 1946b: 116, 1947e: 4, 1949: 145–159, 1955a: 232, 1984: 275, 1989:pl. 10; Postner 1974: 445; Reitter 1887b: 196, 1894a: 79, 1916: 352; Schedl 1934f: 1644, 1979c: 32; Schimitschek 1937c: 56, 58, 1955c: 89; Sokanovskii 1959: 39; Stark 1936: 146, 148; Wachtl 1895: 8; Weber, L. 1912: 30. (**ms**) Sedlaczek 1913: 455; Weber, L. 1912: 30.

baicalicus Eggers 1933f: 49. Lectotype, sex?; Baicalgebiet; USNM, Washington, designated by Anderson & Anderson 1971: 5. Synonymy: Pfeffer 1984: 275.

References: (**cn**) Greckin 1962b: 707. (**ec**) Kostin 1964: 116; Yanovskii 1977b. (**hb**) Kostin 1960: 134; Stark 1952: 386. (**ds**) Greckin 1962b: 707; Krivolutskaya 1983; Sokanovskii 1960; Stark 1936e: 146, 1952: 386; Yanovskii 1974, 1977a; Yanovsky & Tegshzhargal 1985: 410; Zinovjev 1955: 187. (**tx**) Anderson, W. H. & Anderson 1971: 5; Eggers 1933f: 49; Michalski 1969b: 570; Pfeffer 1946b: 116; Sokanovskii 1960: 675; Stark 1952: 386.

***fossifrons* (LeConte)** 1876: 353 (*Pityophthorus*). Lectotype ♀; Vancouver Island, British Columbia [Canada]; MCZ, Cambridge, designated by Wood 1982b: 651.

Distribution: North America (British Columbia in Canada/ California, Colorado, Idaho, Montana, Nevada, Oregon, Utah, Washington, Wyoming in USA).

Hosts: *Pinus albicaulis, P. balfouriana, P. flexilis, P. monticola, P. strobiformis*, rarely in other conifers.

References: (**cn**) Anonymous 1962h; Arno & Hoff 1989; Browne 1968b: 562; Chamberlin 1924, 1939: 404, 1958: 177; Doane et al. 1936; Hatch 1938: 194; Keen 1929: 53, 1938: 118, 1952c: 153; Lindgren 1980a: 67; Ruppel 1967: 78; Swaine 1918a: 105. (**ec**) DeLeon 1934a; Furniss, R. L. & Carolin 1977: 400; Keen 1938: 118; Kulhavy, Patridge, & Stark 1984; Poinar 1975: 166. (**hb**) Bright & Stark 1973: 78; Browne 1968b: 562; Chamberlin 1939: 404, 1958: 177; Doane et al. 1936; Furniss, R. L. & Carolin 1977: 400; Keen 1929: 53, 1938: 118, 1952c: 153; Lindgren 1980a: 67; Swaine 1918a: 105; Wood, S. L. 1982b: 651. (**ds**) Bright 1976d: 140; Bright & Stark 1973: 78; Browne 1968b: 562; Chamberlin 1925, 1939: 404, 1958: 177; Evans, D. 1983: 34; Furniss, M. M. & Furniss 1972; Furniss, R. L. & Carolin 1977: 400; Gast et al. 1989: 385; Hagedorn 1910a: 54; Henshaw 1882: 268, 1885: 147; Hopping 1922; Keen 1929: 35, 53, 1938: 118, 1952c: 153; Kleine 1913b: 131, 1934a: 152; Leng 1920: 341; McComb et al. 1953: 3; Patterson & Hatch 1945: 153; Ruppel 1967: 78; Schedl 1960a: 75; Swaine 1909: 132; Wickham 1896a: 309; Wood, S. L. 1948: 56, 1951a: 128, 1972a: 417, 1982b: 651. (**tx**) Balachowsky 1947; Bright 1976d: 140; Chamberlin 1939: 404, 1958: 177; Eichhoff 1896: 609; Evans, D. 1983: 34; Hagedorn 1910a: 104; Keen 1929: 35; LeConte 1876: 353; Schwarz 1896: 609; Swaine 1909: 132, 1918a: 105–106; Wood, S. L. 1951a: 128, 1972a: 417, 1982b: 651. (**ms**) Hatch 1938: 194.

***foveolatus* Eggers** 1926a: 137. Lectotype ♀; Ontake (Prov. Shinano, Mitteiljapan); USNM, Washington, Anderson & Anderson 1971: 13.

Figures: Nobuchi 1966d: 34, pl. 5, 1974:pl. 1–2.
Distribution: Asia (Japan/ Kuril Islands/ Kamchatka, Sakhalin Island, Siberia in E USSR).
Hosts: *Pinus pumila, P. koraiensis, Picea ajanensis, P. jezoensis*.
References: (**cn**) Kurenzov 1935c: 188, 1950a: 15. (**ec**) Kurenzov 1931a: 56, 1964: 20. (**hb**) Krivolutskaya 1973: 141; Kurenzov 1935a: 20, 40, 1948b: 104, 110, 1950d: 150; Kurenzov & Kononov 1961: 601; Rudnev 1958: 310–313; Schedl 1962a: 145; Stark 1952: 385. (**ds**) Krivolutskaya 1965a: 239, 1973: 141; Kurenzov 1934a: 56, 1935a: 20, 40, 1935c: 188, 1936b: 351, 1938a: 64, 1963b: 114, 1964: 20, 1965, 1967; Kurenzov & Kononov 1961: 595; Murayama 1948: 2, 1949a: 13, 1954b: 172; Nobuchi 1966d: 34, 1974: 39; Schedl 1962a: 145; Stark 1936e: 145, 1952: 385. (**tx**) Anderson, W. H. & Anderson 1971: 13; Eggers 1926a: 137; Kurenzov 1941a: 197, 1948b: 104, 110; Michalski 1969b: 570; Murayama 1954b: 172; Nobuchi 1966d: 34, pl. 5, 1974: 39, pl. 1, 2; Pfeffer 1946b: 116; Schedl 1934f: 1644, 1962a: 145, 1979c: 99; Stark 1933: 145, 147, 1952: 385.

***hopkinsi* Swaine** 1915a: 8. Lectotype ♀; Ste. Anne de Bellevue, Quebec [Canada]; CNCI, Ottawa, designated by Bright 1967b: 677.
Figures: Blackman 1915: pls. 2–6.
Distribution: North America (New Brunswick, Newfoundland, Nova Scotia, Ontario, Quebec in Canada/ Connecticut, Georgia, Illinois, Indiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, West Virginia, Wisconsin in USA).
Hosts: *Pinus strobus*, rare in *P. resinosa, P. sylvestris*.
References: (**ay**) Beal 1927b; Robertson 1961; Thomas, J. B. 1957: 4, 1967; Thomas, J. B. & Krywienczyk 1966. (**bv**) Hosking & Knight 1975. (**cn**) Anonymous 1966f, 1989; Baker W. L. 1972: 258; Beal 1927: 522–539; Becker, W. B. 1955d, 1959b, 1962, 1964a, 1964c; Bess 1944; Blackman 1950; Britton 1920a; Browne 1968b: 562; Carroll & Parrott 1960; Chamberlin 1924; Chenier & Philogene 1989a; Doane et al. 1936; Drake 1921: 201–205; Drooz 1985: 357; Graham 1922b, 1939b, 1952; Herrick 1935: 249; Hopkins 1904a: 25; Lindquist, O. H. & Syme 1981: 87; MacAloney & Schmiege 1962; Pierson 1927: 108; Swaine 1918a: 105–106; Swaine & Craighead 1924: 1–27; Syme & Nystrom 1988: 83; Thomas, J. B. 1965a. (**ec**) Bushing 1965: 464; Felt 1906: 374; Froggatt 1923; Girault 1916: 301; Graham 1922b, 1939b, 1952; Hines, J. W. & Heikkenen 1977; Kaston 1939: 17; Morley 1939: 244; Scherbak 1985; Thomas, J. B. 1955: 341; Thompson, W. R. 1943: 59. (**hb**) Baker, W. L. 1972: 258; Beal & Massey 1945: 138–140; Blackman 1915, 1919a: 134–142, 1950; Blatchley & Leng 1916: 635; Borden 1969: 876; Bright 1976d: 140; Browne 1968b: 562; Chamberlin 1939: 404–407; Deyrup & Atkinson 1987a: 65; Doane et al. 1936; Drooz 1985: 357; Felt 1906: 374; Froggatt 1923; Gobeil 1935; Graham 1939b, 1952; Herrick 1935: 249; Hopkins 1904a: 25; Kaston 1939: 17; Kaston & Riggs 1937: 98; MacAloney & Schmiege 1962; MacAloney & Secrest 1944: 12–13; Morley 1939: 244; Pierson 1927: 108; Prebble 1933: 145; Swaine 1918a: 105–106; Wolcott & Montgomery 1933: 166. (**ds**) Anonymous 1926c: 519, 1966f; Atkinson 1991: 158; Beal & Massey 1945: 138–140; Beaulne 1956; Blackman 1950; Bright 1971a: 126, 1976d: 140; Britton 1920a; Browne 1968b: 562; Chamberlin 1925, 1939: 404–407; Deyrup 1981b: 6; Deyrup & Atkinson 1987a: 65; Dodge 1938; Drooz 1985: 357; Girault 1916: 291–308; Kleine 1934a: 152; Leng 1920: 341; Leonard 1928: 519; Lindquist, O. H. & Syme 1981: 87; Morgan, A. V. & Syme 1981: 87; Morgan, Anne, Morgan, & Elias 1985; Proctor 1946: 208; Schwert et al. 1985; Syme & Nystrom 1988: 83; Thomas, J. B. 1955: 341; Wolcott & Montgomery 1933: 166; Wood, S. L. 1982b: 652. (**tx**) Balachowsky 1947; Beal & Massey 1945: 138–140; Benoit 1985: 203; Blackman 1915: 11–66; Blatchley & Leng 1916: 635; Bright 1967b: 677, 1976d: 140; Chamberlin 1939: 404–407; Dodge 1938: 46–47; Hoebeke 1978; Lindquist, O. H. & Syme 1981: 87; Pardy 1974, 1977; Pardy, Stone, & White 1968; de Ruette 1970: 107; Sokanovskii 1959: 287; Swaine 1915a: 8, 1916: 8, 1918a: 105–106; Syme & Nystrom 1988: 83; Thomas, J. B. 1957: 4, 1967; Thomas, J. B. & Krywienczyk 1966; Titus, Meikle, & Harrison 1985: 105; Wood, S. L. 1982b: 652. (**ms**) Chenier & Philogene 1989a.

***irkutensis* Eggers** 1910e: 38. Lectotype ♂; bei Irkutsk; USNM, Washington, designated by Anderson & Anderson 1971: 16.
Figures: Grune 1979: 130, Pfeffer 1989a:pl. 9.
Distribution: Asia (Mongolia/ Turkey/ E USSR), Europe (Austria/ Bulgaria/ Czechoslovakia/ Finland/ Germany/ Hungary/ Poland/ Romania/ Sweden/ Switzerland/ W USSR).
Hosts: *Pinus sylvestris, P. koraiensis, P.* spp., less common in *Abies pectinata, Larix europea, Picea excelsa*.
References: (**bv**) Grune 1979: 131; Rozhkov 1970: 146. (**cn**) Berdennikova 1954: 86; Esterberg 1959; Lonshehakov & Lure 1960; Nusslin 1913: 282; Titova 1966. (**ec**) Bogdanova 1987; Heqvist 1963: 154; Kostin 1964: 115; Michalski & Ratajczak 1989; Pfeffer 1960: 345; Postner 1974: 443; Titova 1966. (**hb**) Kostin 1960: 134; Nusslin 1913: 282; Petrenko 1966; Pfeffer 1989a: 69; Rozhkov 1970: 146; Schedl 1962a: 140, 1980a: 25, 1981b: 83; Stark 1952: 382. (**ds**) Arnoldi et al. 1955: 718; Butovitsch & Heqvist 1947; Esterberg

1959; Florov 1949; Grune 1979: 131; Hansen 1939; Hellen 1947; Holzschuh 1977; Klefbeck & Sjoberg 1960: 232; Kleine 1913b: 131, 1914b: 247, 1934a: 152; Krivolutskaya 1983; Linnman 1965: 27; Lucht 1987: 279; Mandl 1931: 25; Nuorteva 1971: 71; Pfeffer 1960: 345, 1989a: 69; Postner 1974: 443; Rozhkov 1970p: 146; Schedl 1962a: 140, 1981b: 83; Sokanovskii 1960; Stark 1931d: 548, 1936e: 145, 1952: 382; Wichmann 1927a: 76; Yanovskii 1989: 64; Yanovskii & Tegshzhargal 1985: 411; Zinovjev 1955: 187. (**tx**) Anderson, W. H. & Anderson 1971: 16; Eggers 1910e: 38, 1912: 210, 1913: 128–129, 1922c: 16–17; Fuchs 1912b: 308–310; Grune 1979: 13, 130; Hagedorn 1910a: 105; Kurenzov 1941a: 194; Lucht 1987: 279; Pfeffer 1946b: 115, 1955a: 225, 1989a:pl. 9; Postner 1974: 443; Reitter 1913a: 98; Schedl 1934f: 1644, 1961a: 140, 1980a: 25, 1981b: 83; Sokanovskii 1960: 677; Stark 1938: 145–149, 1952: 382.

monacensis Fuchs 1911a: 3. Syntypes, sex?; Fohrenwaldern um Schleissheim gegen Munchen; Fuchs Collection. Synonymy: Schedl 1962a: 140.

References: (**ay**) Escherich 1923b: 554; Fuchs 1911a. (**bv**) Hellen 1921. (**cn**) Hellen 1921; Koch 1913: 122; Kontkanen 1932: 63; Nestertschuk 1930: 176; Rhumbler 1927: 340; Schwerdtfeger 1944a: 177, 1957a: 183; Wichmann 1927b: 378. (**ec**) Fuchs 1937; Galoux 1947d; Graham 1969: 877; Gyorfi 1952b; Karpinski 1932a, 1933b: 35; Kleine 1944: 82; Kostenko 1929; Nunberg 1947b: 26; Nuorteva 1957b: 67; Pfeffer 1923a: 332, 1960: 345; Schwerdtfeger 1944a: 177, 1957a: 183; Sokanovskii 1936: 74; Thompson, W. R. 1943: 59; Tragardh 1927a: 210. (**hb**) Alkan 1946: 113; Charvat 1950; Escherich 1923b: 554; Karpinski 1931: 18–39, 1933b: 35; Karpinski & Strawinksi 1948: 157; Lengerken 1939: 65, 1954: 86; Michalski 1959a: 291; Pfeffer 1941b: 6; Rhumbler 1927: 340; Schwerdtfeger 1944a: 177, 1957a: 183; Spessivtsev 1923: 213, 1928a: 232; Stark 1926a: 330, 1952: 381; Wichmann 1927b: 378. (**ds**) Arnoldi et al. 1955: 718; Charvat 1950; Delahon 1919; Escherich 1923b: 554, 1932b; Esterberg 1928; Heyrovsky 1927; Horion 1951; Karpinski 1931: 18, 26, 33, 1932a: 95; Karpinski & Strawinski 1948: 157; Kleine 1912a: 268, 1913b: 131, 1914b: 247, 1934a: 152; Kontkanen 1932: 63; Kostenko 1929; Lundberg 1981: 151, 1982; Nunberg 1954: 76, 1960b: 159; Pfeffer 1923b: 106, 1930b: 120, 1931b: 74, 1935: 158, 1947e: 13, 1960: 345; Reitter 1916: 300; Saalas 1931: 68; Schaufuss 1915: 1245; Sokanovskii 1936: 74; Stark 1926a: 330, 1926b: 105, 1926j: 127, 1931a: 27, 1936e: 145, 1952: 381. (**tx**) Alkan 1946: 113; Balachowsky 1947: 44; Charvat 1950; Eggers 1912c, 1913b: 128, 1914, 1922c: 16–17, 1923b; Escherich 1923b: 554; Fleischer 1927; Fuchs 1911a: 3, 1912b: 308; Karpinski & Strawinski 1948: 157; Koch 1913: 122; Nunberg 1954: 76; Pfeffer 1932b: 24, 1941b: 6, 1946b: 115, 1947e: 13, 1955a: 225; Reitter 1913a: 98, 1916: 300; Rhumbler 1927: 340; Schedl 1934f: 1644; Spessivtsev 1922a: 480, 490, 1923: 213–214, 1925a: 185; Stark 1938: 145–149, 1952: 381; Weber, L. 1912: 30. (**ms**) Escherich 1932b; Hellen 1921; Michalski 1959a: 291; Schimitschek 1930b: 407; Sedlaczek 1913: 455; Weber, L. 1912: 30.

monacensis bialowiezensis Karpinski 1931: 34, 39. Syntypes, sex?; Bialowieza Forest [W USSR]; Karpinski Collection. Synonymy: Schedl 1962a: 140.

References: (**ds**) Schnaider 1936: 366. (**tx**) Karpinski 1931: 34, 39; Schedl 1934f: 1644, 1962a: 140.

***japonicus* Nobuchi** 1974: 39. Holotype ♀; Mt. Hakkoda, Aomori, Japan; Nobuchi Collection, Ibaraki.

Figures: Nobuchi 1974:pls. 1–2 (adult).

Distribution: Asia (Shanxi in China/ Japan).

Hosts: *Pinus pumila*.

References: (**tx**) Bright 1976d: 203, 211; Nobuchi 1974: 39–40, pl. 1, 2.

***knechteli* Swaine** 1918a: 106. Holotype ♀; Beau Vent Lake, Jasper Park, Alberta [Canada]; CNCI, Ottawa.

Figures: Bright 1976d: 146, Kusch 1967: 9.

Distribution: North America (Alberta, British Columbia, Saskatchewan in Canada/ California, Colorado, Idaho, Montana, Oregon, Utah, Wyoming in USA).

Hosts: *Pinus contorta*.

Notes: (3) Bright 1976d: 143 (treated as a subspecies). Wood 1982b: 656 (A Peace River, Alberta, series in a zone of host hybridization suggests hybridization and/or intergradation with *plagiatus*. Until a more extensive zone of intergradation is found, both names are retained as full species).

References: (**bv**) Schmitz 1988. (**cn**) Anonymous 1962h; Brown 1941: 12; Browne 1968b: 562; Chamberlin 1924; Craighead 1927: 1–12; Doane et al. 1936; Evenden 1940; Evendon & Gibson 1940: 274; Keen 1929: 53, 1938: 118, 1952c: 153; Lindgren 1980a: 67; Smith, G. J. & Melvin 1974a, 1974b; Swaine 1918a: 105–106; Wong, H. R. & Melvin 1973. (**ec**) Bushing 1965: 464; Chatelain & Schenk 1983; Craighead et al. 1927; DeLeon 1934a; Furniss, R. L. & Carolin 1977: 400; Keen 1938: 118; Lanier 1967: 1134; Marsh 1979: 150; Powell, J. M., Wong, & Melvin 1972: 15; Reid 1955: 312; Schmitz 1988. (**hb**) Bright 1976d: 143; Bright & Stark 1973: 78; Browne 1968b: 562; Chamberlin 1939: 404, 1958: 178–179; Doane et al. 1936; Furniss, R. L. & Carolin 1977: 400; Keen 1929: 52, 1938: 118, 1952c: 153; Lindgren 1980a: 67; Reid 1955: 312, 316; Schmitz 1988; Swaine

1918a: 105–106; Wong, H. R. & Melvin 1973; Wood, S. L. 1982b: 655. (**ds**) Bright 1976d: 143; Bright & Stark 1973: 79; Brown 1940a: 15, 1943: 8; Browne 1968b: 562; Chamberlin 1925, 1939: 404, 1958: 178–179; Evans, D. 1983: 34; Evans, D., Lowe, & Hunt 1978; Furniss, M. M. & Furniss 1972; Furniss, R. L. & Carolin 1977: 400; Gast et al. 1989: 385; Gautreau & Melvin 1974: 14; Hopping 1922; Keen 1929: 35, 53, 1938: 118, 1952c: 153; Kleine 1934a: 152; Kusch 1967; Leng 1920: 341; McComb et al. 1953: 3; Patterson & Hatch 1945: 153; Smith, G. J. & Melvin 1974a, 1974b; Smith, G. S. 1930; Still, Tidsbury, & Melvin 1974a: 14; Susut & Melvin 1974; Wood, S. L. 1948: 58, 1952a: 128, 1972a: 417, 1982b: 655. (**tx**) Blackman 1921: 15–16; Bright 1967b: 677, 1976d: 143, 146; Chamberlin 1939: 404, 1958: 178–179; Evans, D. 1983: 34; Hoebeke 1978; Keen 1929: 35; Kusch 1967: 9; de Ruette 1970: 107; Swaine 1918a: 105–108; Wood, S. L. 1951a: 128, 1972a: 417, 1982b: 655.

***meridianus* Blackman** 1921: 15. Lectotype ♀; Meridian, Mississippi [USA]; USNM, Washington, designated by Wood 1982b: 652.

Figures: Blackman 1921:pl. 2, figs. 7–10 (adult), 1922b:pl. 2, figs. 7–10.

Distribution: North America (Mississippi, North Carolina in USA).

Hosts: *Pinus echinata, P. taeda.*

Notes: (3) This species infests shaded out branches of living trees.

References: (**bv**) Turnbow & Franklin 1980. (**cn**) Baker, W. L. 1972: 258; Blackman 1950; Doane et al. 1936. (**hb**) Baker, W. L. 1972: 258; Beal & Massey 1945: 138–140; Blackman 1950; Chamberlin 1939: 408; Doane et al. 1936; Drooz 1985: 357; Wood, S. L. 1982b: 652. (**ds**) Beal & Massey 1945: 138–140; Blackman 1950; Chamberlin 1939: 408; Drooz 1985: 357; Kleine 1934a: 152; Leng & Mutchler 1927: 52; Turnbow & Franklin 1980; Wood, S. L. 1982b: 652. (**tx**) Balachowsky 1947; Beal & Massey 1945: 138–140; Blackman 1921: 15, 1922b: 110–111; Chamberlin 1939: 408; Wood, S. L. 1982b: 652.

***mexicanus* Wood** 1980b: 356. Holotype ♀; Parque Nacional Zoquiapan, Mexico, Mexico; Wood Collection.

Figures: Atkinson et al. 1986: 33 (adult).

Distribution: North America (Estado de Mexico in Mexico).

Hosts: *Pinus hartwegii.*

Notes: (3) This species infests shaded out branches of living trees.

References: (**hb**) Atkinson & Equihua 1985a: 86; Atkinson et al. 1986: 34; Furniss, R. L. & Carolin 1977: 387. (**ds**) Atkinson & Equihua 1985a: 86; Atkinson et al. 1986: 34; Furniss, R. L. & Carolin 1977: 387; Wood, S. L. 1982b: 653. (**tx**) Atkinson et al. 1986: 33; Wood, S. L. 1980b: 356, 1982b: 653.

***pennidens* (Reitter)** 1889c: 374 (*Tomicus*). Holotype ♂; Griechenland: Insel Tinos; NHMB, Budapest.

Figures: Grune 1979: 130.

Distribution: Asia (Syria/ Turkey), Europe (Greece/ W USSR).

Hosts: *Pinus brutia, P. pinae.*

References: (**bv**) Grune 1979: 131. (**ec**) Kleine 1908c: 214. (**hb**) Postner 1974: 445; Stark 1952: 390. (**ds**) Grune 1979: 131; Hagedorn 1910d: 56; Heyden, Reitter, & Weise 1891: 672, 1906: 712; Kleine 1913b: 131; Postner 1974: 445; Reitter 1894a: 80, 1894b: 117; Schedl 1961b: 185, 1962a: 148; Stark 1936e: 146, 1952: 390; Tredl 1907: 15. (**tx**) Fuchs 1911a; Grune 1979: 130–131; Hagedorn 1910a: 105; Pfeffer 1946b; Postner 1974: 445; Reitter 1889c: 374, 1894a: 80, 1894b: 117, 1913a: 101; Schedl 1934f: 1644, 1962a: 148; Sokanovskii 1958: 39; Stark 1938: 146, 1952: 390; Wachtl 1895: 8; Weber, L. 1912: 30. (**ms**) Sedlaczek 1913: 455; Weber 1912: 30.

***plagiatus* (LeConte)** 1868: 161 (*Xyleborus*). Lectotype ♂; Maryland [USA]; MCZ, Cambridge, designated by Wood 1982b: 645.

Distribution: North America (Alberta, Manitoba, Ontario, Quebec in Canada/ District of Columbia, Indiana, Maryland, Michigan, Minnesota, North Carolina, Pennsylvania, Virginia, West Virginia in USA).

Hosts: *Pinus banksiana, P. echinata, P. resinosa, P. virginiana.*

Notes: (3) Bright 1976d: 142 (treated as a subspecies). Wood 1982b: 655 (Apparent hybridization and/or intergradation with *knechteli* occurs in a small area of host intergradation in Alberta. This is not considered extensive enough or of sufficient magnitude to warrant reduction to subspecific rank).

References: (**ay**) Hopkins 1894g; Thomas, J. B. 1957: 4, 1967. (**cn**) Anonymous 1965i; Blackman 1950; Chamberlin 1924; Doane et al. 1936; Hopkins 1899c: 342, 447; Kondo & Moody 1987: 104; Kondo & Taylor 1985; Lindquist, O. H. & Syme 1981: 87; Martin, J. L. 1965; Swaine 1918a: 105, 107; Syme & Nystrom 1988: 83. (**ec**) Burks 1979: 859; Bushing 1965: 464; Felt 1906: 752; Hines, J. W. & Heikkenin 1977; Tomalak, Welch, & Galloway 1989: 3. (**hb**) Baker, W. L. 1972: 258; Blackman 1922b, 1950; Chamberlin 1939: 407; Doane et al. 1936; Felt 1906: 752; Hopkins 1894g, 1899c: 342, 447; Swaine 1918a: 105, 107. (**ds**) Anonymous 1926c: 519; Beaulne 1956; Blackman 1922b, 1950; Blatchley & Leng 1916: 637; Bright 1976d: 142; Chamberlin 1939: 407; Deyrup & Atkinson 1987b: 68; Dodge 1938; Gemminger & Harold 1872: 2686; Hagedorn 1910d: 57; Henshaw 1882: 268, 1885: 147; Hopkins 1893a: 129, 146, 1893b: 208, 1894: 278, 1899: 427–429; Hubbard & Schwarz 1878b: 623; Kleine 1913b: 131,

1914b: 395; Leng 1920: 341; Leonard 1928: 519; Lindquist, O. H. & Syme 1981: 87; Schwarz 1886: 41; Swaine 1909: 133; Syme & Nystrom 1988: 83; Ulke 1902: 56; Wood, S. L. 1957c: 400, 1982b: 654. (**tx**) Balachowsky 1947; Blackman 1921: 15–16, 1922b: 110; Blatchley & Leng 1916: 637; Bright 1976d: 142; Chamberlin 1939: 407; Dodge 1938: 43, 47; Eichhoff 1878b: 280, 1896: 609; Hagedorn 1910a: 105; LeConte 1868: 161, 1876: 360–361, 1878b: 623–626; Lindquist, O. H. & Syme 1981: 87; Schwarz 1886: 41, 1891a: 168; Swaine 1909: 133, 1915a: 10, 1918a: 105, 107; Syme & Nystrom 1988: 83; Thomas, J. B. 1957: 4, 1967; Titus, Meikle, & Harrison 1985: 105; Wood, S. L. 1957c: 400, 1982b: 654. (**ms**) Eckstein 1900c.

lecontei Swaine 1915a: 10. Holotype ♂; Marquette, Michigan [USA]; MCZ, Cambridge. Synonymy: Wood 1957c: 400.

References: (**cn**) Blackman 1950; Swaine 1918a: 105–106. (**ec**) Furniss, R. L. & Carolin 1977: 394. (**hb**) Blackman 1950; Chamberlin 1939: 406; Furniss, R. L. & Carolin 1977: 394; Swaine 1918a: 105–106. (**ds**) Blackman 1950; Chamberlin 1939: 406; Furniss, R. L. & Carolin 1977: 394; Knull 1932: 66; Leng 1920: 341. (**tx**) Balachowsky 1947: 44; Bright 1967b: 677; Chamberlin 1939: 406; Swaine 1915a: 10, 1918a: 105–106; Wood, S. L. 1957c: 400.

***porifrons* Eggers** 1933: 50. Syntypes ♂ ♀; Cypern; Eggers Collection, in NHMW, Wien.

Distribution: Europe (Cyprus).

Hosts: *Pinus halepinsis, P. maritima*.

References: (**cn**) Morris, H. M. 1937: 22; Schimitschek 1944: 187. (**hb**) Chararas 1962c: 358; Schedl 1962a: 147, 1981b: 84; Schimitschek 1944: 187. (**ds**) Georghiou 1977: 75; Kleine 1934a: 152; Pfeffer 1984: 277; Schedl 1962a: 147, 1967c: 75, 1981b: 84. (**tx**) Eggers 1933: 50; Schedl 1962a: 147, 1979c: 197, 1981b: 84.

***quadridens* (Hartig)** 1834: 109 (*Bostrichus*). Syntypes, sex?; Pommern [Germany]; not located.

Figures: Grune 1979: 132, Joly 1976b:figs. 147, 170, Pfeffer 1989a:pl. 9, Plaza & Gil 1982: 260.

Distribution: Europe (Austria/ Belgium/ Bulgaria/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Hungary/ Italy/ Norway/ Poland/ Scotland/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia).

Hosts: *Pinus* spp., *Abies* spp., *Picea* spp.

References: (**ay**) Escherich 1923b: 484, 551; Feytaud 1950a; Fuchs 1911a; Scherb 1971; Schevyrew 1889a: 22. (**bv**) Annila & Petaisto 1978; Baader 1989; Byers, Anderbrandt, & Lofqvist 1989; Eidmann 1965b; Grune 1979: 133; Heuer & Vite 1984a; Nuorteva 1956c: 51; Nuorteva & Nuorteva 1968; Rozhkov 1970: 147. (**cn**) Andersson & Lekander 1966: 684; Anonymous 1979p; Baader 1989; Badoux 1921: 163–173; Bakke 1956: 40–42, 1960: 313, 1968: 441–602; Barbey 1925: 229; Borodajewski 1930: 249–251; Browne 1968b: 563; Butovitsch & Spaack 1939: 1–120; Byers, Anderbrandt, & Lofqvist 1989; Chorbadzhievo 1929; Crooke 1956; Dehlen & Langstrom 1977; Eckstein 1926: 579; Ehnstrom et al. 1974; Eidmann 1965c, 1970a, 1973; Escherich 1917: 97–115, 1924: 484, 551; Eidmann & Klingstrom 1976: 239; Esterberg 1959; Feytaud 1950a; Florov 1949: 102; Fystro & Bakke 1962; Gabler 1955; Geschwind 1919: 111, 199; Gradojevic 1940; Grandi 1951; Hanson, H. S. 1940a; Hrubik 1973; Jablokoff 1953: 325; Jahn 1959: 220; Joly 1976; Judeich & Nitsche 1895: 501; Kamp 1950; Kangas 1932, 1934: 1–68; Kholodkovskii 1912: 310; Koch 1913: 118; Kozikowsky 1929: 254; Lekander 1952b: 5, 1955b: 17; Lekander & Rennerfelt 1955: 10; Lekander, M. 1951: 54; Lichtenstein & Picard 1918: 172–174, 1919: 62–64; Lindgren 1980a: 67; Maksimovic & Milanovic 1964, 1966; Mathiesen 1951: 229, 1952: 285; Mathiesen-Kaarik 1953: 10; Mercet 1926: 40–47; Muller 1912: 186; Mumford 1960: 37; Munro 1922: 136; Nestertschuk 1930: 176; Nuorteva & Nuorteva 1968; Nusslin 1913: 205; Ozols, G. E. 1960; Pfeffer 1933: 43; Pierce, W. D. 1917: 69; Rhumbler 1922: 323, 1927: 338; Rodzianko 1915: 1–15; Ryvkin 1951: 80–81; Saalas 1949: 344, 384; Schimitschek 1932a: 23, 1935b: 148, 1937c: 56, 1955a: 71, 73, 1955c: 89; Schwerdtfeger 1944a: 177, 1957a: 183; Sierpinski 1969a; Titova 1966; Tragardh 1917: 28, 1921e: 64, 1927c: 88; Tullgren 1916: 104; Vuiliet 1913: 111–112; Wachtl 1901: 381; Weber, H. 1926: 579; Wichmann 1927b: 352; Zarco 1946a: 251. (**ec**) Annila & Petaisto 1978; Apfelbeck 1916b: 429–439; Bakke 1956a; Balachowsky & Chararas 1964; Balazy 1962; Balazy & Michalski 1960, 1964a; Barbey 1927; Brammanis 1940; Capek 1957; Chararas 1957d; Eidmann 1965c, 1974b; Graham 1969: 879; Haeselbarth 1967; Heqvist 1955d: 97, 1957a, 1963: 154, 1967: 70; Heuer & Vite 1984a; Hirschmann & Wisniewski 1982, 1983; Kangas 1937, 1971; Karpinski 1932a: 99; Kielczewski 1976; Kielczewski, Moser & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1983; Kleine 1908c: 214, 1909a: 76, 1944: 69; Kolubajiv 1954: 22; Kostin 1964: 117; Lovaszy 1941: 195; Lichtenstein & Picard 1918: 173; Lundberg 1984; Mathiesen 1951: 229, 1952: 285; Mathiesen-Kaarik 1953: 10; Meyer 1918: 616; Michalski & Ratajczak 1989; Nosek 1959a: 118, 1959b: 87; Nunberg 1930: 203; Nunberg & Wiackowski 1958: 130; Nuorteva 1956a: 17, 1957b: 52, 1959d: 201, 1968a, 1970, 1971: 69; Nuorteva & Nuorteva 1968; Nusslin 1927: 338; Palmen 1944: 60, 1946: 195; Pettersen 1976b; Pfeffer 1923a: 332, 1928b: 3, 1933: 43, 1943b: 182, 1960: 346; Poinar 1975: 166; Popovic 1931: 57; Roubal 1934a: 86; Ruhm 1954c: 222, 1956b: 4; Saalas 1959: 344, 384; Schedl 1936f: 172; Schimitschek 1934a: 86, 1936a: 560, 1955a: 71, 73; Schwerdtfeger

1944a: 177, 1957a: 183; Sedlaczek 1908: 52, 1935a: 163; Seitner 1913a: 27; Seitner & Notzl 1925: 187–196; Szczepanski 1960a: 411; Thompson, W. R. 1943: 59; Titova 1966; Toth 1979; Tragardh 1917: 28, 1921e: 64, 1927a: 195, 1927c: 88, 1928: 776; Vaartaja 1947: 44; Virkki 1960: 3–16; Wachtl 1901: 381; Weber, H. 1926: 579; Wichmann 1927b: 352, 1954d: 438; Zarco 1946: 251; Zivojivonic 1960: 21–29. (**hb**) Annila & Petaisto 1978; Anonymous 1920: 64; Apfelbeck 1916b, 1917; Bakke 1960: 313, 1968b: 640; Barbey 1901: 26, 99, 1906c, 1925: 229; Beffa 1949, 1961; Bejer-Petersen 1957; Borodajewsky 1930b; Browne 1968b: 563; Chararas 1962c: 358; Charvat 1950; Chorbadzhievo 1929; Dombrowsky 1887, 1892; Eckstein 1926: 579; Eichhoff 1881a: 52, 259; Eidmann 1965b, 1974b; Eidmann & Klingstrom 1976: 239; Escherich 1923b: 484, 551; Feytaud 1950a; Fuchs 1904a; Gabler 1955; Gornostaev 1916: 312; Grandi 1951; Gyorfi 1957; Heinemann 1908a; Henschel 1895a: 185; Joly 1976; Judeich & Nitsche 1895: 501; Karpinski 1933b: 35; Karpinski & Strawinski 1948: 157; Keller 1910: 25; Kemner 1919: 170; Kholodkovskii 1912: 310; Knotek 1894a: 558, 1897: 160, 1898b: 333; Kostin 1960: 134; Lengerken 1939: 66, 1954: 86; Lindgren 1980a: 67; Loos 1913: 412; Michalski 1959a: 291; Munro 1926: 66; Nordlinger 1856: 22; Nosek 1959a: 118, 1959b: 87; Nuorteva 1956c: 51, 1968a, 1970; Nusslin 1898: 283, 1913: 205, 1927: 338; Petkov 1963: 219; Pfeffer 1941b: 3, 1989a: 70; Postner 1974: 444; Ratzeburg 1837: 159; Rhumbler 1922: 323, 1927: 338; Rozhkov 1970: 147; Saalas 1913a: 68, 88, 1949: 344, 384; Schedl 1962a: 154, 1981b: 84; Schimitschek 1939c: 274, 1955a: 71, 73; Schwerdtfeger 1944a: 177, 1957a: 183, 1981: 190; Sedlaczek 1935a: 163; Spessivtsev 1913a: 70, 1923: 213; Stark 1926a: 337, 1952: 390; Tragardh 1914: 83, 1921e: 64, 1927c: 88, 1939b: 151, 226; Tschorbadjiev 1929: 172; Wachtl 1876a: 460, 1901: 381; Weber, H. 1926: 579; Wichmann 1927b: 352; Wilkinson 1935: 71–72. (**ds**) Acloque 1896; Ammann & Knabl 1913, 1923; Angus 1964: 179; Anonymous 1979p; Audras & Schaefer 1957; Badoux 1921; Bakke 1960: 313, 1968a: 640; Balachowsky 1947: 44, 1949a: 251; Balazy & Michalski 1960; Barthe 1896; Bedel 1888b: 402, 419; Beffa 1949; Bejer-Petersen & Jorum 1977: 28; Bistrom & Vaisanen 1988: 42; Borchert 1951; Brakman 1966b: 207; Browne 1968b: 563; Bruce 1944: 28; Brudin 1934; Bucking 1932; Buresh & Lazarov 1956; Butovitsch & Heqvist 1947; Charvat 1950; Chorbadzhievo 1924d, 1929; Csiki 1914; Eder 1934; Eggers 1904; Eidmann 1974b; Endrodi 1958a, 1958b; Ericson & Sandin 1893; Escherich 1923b: 484, 551, 1932b; Esterberg 1928, 1951; Fjellberg 1966: 154; Fowler 1891; Fuchs 1904a, 1905a; Furniss 1968: 1384–1389; Georghiou 1977: 75; Gillerfors 1966; Gornostaev 1917: 308–315; Grill 1895: 311; Grouzelle 1905; Grune 1979: 133; Hagedorn 1904e, 1910d: 58; Hansen, V. 1939, 1956, 1964: 464; Heinemann 1908a; Hellen 1947; Helliesen 1916: 84; Hennig 1954: 257, 261; Henschel 1895a: 185; Heyden, Reitter, & Weise 1891: 672, 1906: 712; Horion 1951; Jablokoff 1953: 325; Jamnicky 1960a; Jazentkovsky 1912: 289; Joly 1976; Judeich & Nitsche 1895: 501; Kaltenbach 1874: 685; Kangas 1971; Karpinski 1925: 216, 1926: 82, 1931: 26, 34, 1932a: 99, 1933b: 35; Karpinski & Strawinski 1948: 157; Keler 1922b: 211; Keller 1910: 25; Kemner 1919: 170; Kersten 1933: 76; Kiefer et al. 1942: 529; Klefbeck & Sjoberg 1960: 232; Kleine 1912a: 262, 267, 1913a: 35, 1913b: 131, 1934a: 152; Kloft & Hinks 1945: 218; Knotek 1892a: 38, 1894a: 558, 1898b: 333; Kolubajiv 1934: 64; Kozikowsky 1921: 181; Kozikowsky & Kuntze 1925: 20; Krivolutskaya 1983; Krogerus 1921b: 115; Kurir 1947c: 6; Langhoffer 1915c: 158; Leclercq 1971; Lekander 1955b: 17; Lindberg & Saris 1952: 59; Lomnicki 1913b: 148; Loos 1913: 412; Lovendal 1890c: 209; Lucht 1987: 279; Lundbald 1950c: 116; Lundberg 1974: 92, 1979: 31; Matthews & Fowler 1883: 42; Mequignon 1936: 15, 37; Mercet 1929: 19–22; Moragues 1889: 32; Mumford 1960: 37; Munro 1920, 1922: 136, 1926; Munster 1928: 290; Nunberg 1928b: 88, 114, 1930: 200–208, 1954: 74; Nuorteva 1971: 67; Nusslin 1898: 283; Palm 1947a: 172; Palmen 1944: 60, 1946: 195; Perris 1876a: 254, 1877a: 414; Pettroni 1943: 175; Pfeffer 1924b: 472, 1928b: 3, 1933: 3–54, 1934b: 74, 1947c: 11, 1960: 346, 1984: 277, 1989a: 70; Pierce, W. D. 1917: 69; Platonoff 1943: 141; Plaza & Gil 1982: 260; Pomerantzev 1907b: 493; Postner 1974: 444; Prossen 1913: 83; Rapp 1934: 730; Ratzeburg 1837: 159; Reitter 1894a: 78, 1916: 301; Roubal 1935b: 73, 1941: 271; Rozhkov 1970: 147; Rye 1867: 93; Saalas 1913a: 68, 88, 1931: 69; Sahlberg 1900: 106; Sainte-Claire & Mequignon 1938: 448; Schaufuss 1915: 1246; Schaum 1862: 101; Schedl 1962a: 154, 1967c: 72, 1980a: 25, 1981b: 84; Schilsky 1909: 188; Schreiner 1897: 369; Schwarz 1886: 41; Schwerdtfeger 1981: 190; Seidlitz 1872: 394, 1891a: 565, 1891b: 610; Sharp & Fowler 1893: 35; Sparr-Schneider 1889: 61; Stark 1926a: 337, 1926b: 105, 1926j: 127, 1931a: 27, 1936e: 147, 1952: 390; Stein & Weise 1877: 165; Stierlin 1898: 442; Stierlin & Gautard 1906: 205; Strand 1946: 603; Sturm 1826: 102; Thomson 1868: 222; Tragardh 1914: 83, 1917: 1–28, 1939b: 151, 226; Tredl 1907: 15; Tschorbadjiev 1929: 172; Wachtl 1876a: 460; Wegelius 1960: 107; West 1938: 184; Wichmann 1927a: 74; Winter, T. G. 1983: 22; Yanovskii & Tegshzhargal 1985: 415; Zinovjev 1955: 187; Zivojinovic 1960; Zolk 1937: 147–172. (**tx**) Acloque 1896; Balachowsky 1947, 1949a: 251; Barbey 1901: 26, 99, 1906c; Bedel 1888b: 402, 419; Beffa 1949, 1961; Bejer-Petersen 1957; Ceballos 1945; Charvat

1950; Chorbadzhievo 1924d; Dombrowsky 1887, 1892; Duffy 1953; Eggers 1910e: 38, 1922c; Eichhoff 1881a: 52, 259, 1883a: 114, 139, 1883b: 219; Endrodi 1957a: 307, 1957b; Escherich 1923b: 484, 551; Fauvel 1887, 1889; Ferrari 1867a: 33, 35, 1867b: 114; Fleischer 1927; Formanek 1907: 40; Fraser 1920; Fuchs 1911a, 1912: 308–310, 1914: 188–189, 1922: 17; Gabler 1955; Gebien 1907: 197; Grune 1979: 132–133; Hagedorn 1910a: 105; Hansen, V. 1956, 1964: 464; Hartig 1834: 109; Henschel 1885a, 1895a: 185; Iablokoff-Khnzorian 1961: 105; Joly 1976, 1976b:fig. 147, 170; Judeich & Nitsche 1895: 501; Kalina 1970: 127; Karpinski & Strawinski 1948: 157; Knotek 1892a: 38; Koch 1913: 118, 1932: 124; Kuhnt 1913: 1057; Lovendal 1889b: 65, 1890c: 209, 1898: 172; Lucht 1987: 279; Nordlinger 1848: 239, 1856: 22; Nunberg 1954: 74; Perris 1877a: 414; Pfeffer 1932b: 24, 1941b: 3, 1946b: 116, 1947e: 11, 1948: 116, 1955a: 231, 1989a:pl. 9; Plaza & Gil 1982: 260, 262; Portevin 1935: 335; Postner 1974: 444; Quaschik 1953: 35; Ratzeburg 1837: 159; Reitter 1894a: 78, 1913a: 100, 1916: 301; Rhumbler 1922: 323, 1927: 338; Saalas 1913a: 68, 88, 1919, 1949: 344, 384; Schedl 1934f: 1644, 1952f: 87, 1962a: 154, 1980a: 25, 1981b: 84; Scherb 1971; Schevyrew 1889a: 22; Schimitschek 1937c: 56, 1955c: 89; Schwarz 1886: 41; Seidlitz 1872: 394, 1891a: 565, 1891b: 610; Spessivtsev 1913a: 69–70, 1922a: 480, 487, 490, 1925a: 186, 1925b: 23; Stark 1938: 147, 149, 1952: 390; Stierlin 1898: 442; Thomson 1868: 222; Wachtl 1895: 8; Weber, L. 1912: 30. (**ms**) Escherich 1932b; Kozikowsky 1929: 254; Michalski 1959a: 291; Seitner 1913a: 27; Weber 1912: 30.

***rudnevi* Sokanovskii** 1959a: 278. Syntypes ♂♀; Sedanka, non loin de Vladivostok, USSR; Sokanovskii Collection.

Distribution: Asia (E USSR).

Hosts: *Picea obovata*.

References: (**tx**) Schedl 1962a: 157; Sokanovskii 1959a: 277–278.

***saalasi* Eggers** 1914: 188. Lectotype ♂; Kirchspiel Kittila im finnischen Lappmarken; USNM, Washington, designated by Anderson & Anderson 1971: 28.

Figures: Grune 1979: 128, Yin, Huang, & Li 1984: 125.

Distribution: Asia (Liaoning, Gansu in China/ Mongolia/ E USSR), Europe (Finland/ Norway/ Poland/ Sweden/ W USSR).

Hosts: *Picea asperata, P. balfouriana, P. excelsa, P. obovata, P. schrenkiana*.

References: (**bv**) Grune 1979: 129; Hellen 1921. (**cn**) Hellen 1921; Juutinen 1960: 25; Palm 1946: 122. (**ec**) Kangas 1946b: 23; Kleine 1944: 74; Kostin 1964: 114; Nuorteva 1971; Pfeffer 1960: 345; Saalas 1917a: 18. (**hb**) Karpinski & Strawinski 1948: 157; Kostin 1960: 134; Postner 1974: 442; Saalas 1913a: 69, 87; Schedl 1962a: 144; Shatilov 1985; Stark 1952: 383. (**ds**) Grune 1979: 129; Hansen, V. 1939; Hellen 1947; Karpinski 1948a: 173; Karpinski & Strawinski 1948: 157; Klefbeck & Sjoberg 1960: 232; Kleine 1934a: 152; Krivolutskaya 1983; Lundberg 1961: 68; Nunberg 1954: 74; Nuorteva 1971: 67; Pfeffer 1960: 345; Platinoff 1943: 141; Postner 1974: 442; Saalas 1913a: 69, 87, 1917a: 18, 1931: 70; Schedl 1962a: 144; Sokanovskii 1960; Stark 1931a: 27, 1936e: 145, 147, 1952: 383; Steniu 1936: 3, 18; Strand 1946: 603; Yanovskii & Tegshzhargal 1985: 411; Yin, Huang, & Li 1984: 124. (**tx**) Anderson, W. H. & Anderson 1971: 28; Balachowsky 1947; Eggers 1914: 188–189, 1922c: 16, 1933f: 51; Grune 1979: 128–129; Karpinski & Strawinski 1948: 157; Lebedev 1926: 121–123; Michalski 1969b: 570; Nunberg 1954: 74; Pfeffer 1946b: 114, 1955a: 224; Postner 1974: 442; Saalas 1913a: 69, 87, 1914: 87, 1916: 91–85, 110–116; Schedl 1934f: 1644, 1962a: 144, 1979c: 217; Sokanovskii 1960: 676; Spessivtsev 1922a: 481, 1931: 68; Stark 1935: 145, 1952: 383; Yin, Huang, & Li 1984: 124. (**ms**) Hellen 1921.

saalasi niger Sokanovskii 1960: 676. Syntypes, sex?; Irkutsk, USSR; Sokanovskii Collection. Synonymy: Schedl 1962a: 114.

References: (**ds**) Yanovsky & Tegshzhargal 1985: 411. (**tx**) Schedl 1962a: 114; Sokanovskii 1960: 676.

***scitus* Blandford** 1893: 63. Syntypes 2♂ 2♀; published as East India, labeled Sibsagar, Assam, India; FRI, Dehra Dun.

Figures: Yin & Huang 1981: 562.

Distribution: Asia (Yunnan in China/ Assam, Himachal Pradesh, Kashmir, Punjab, Uttar Pradesh in India/ Nepal/ Pakistan).

Hosts: *Cedrus deodara, Pinus excelsa, P. gerardiana, P. roxburghii*.

References: (**ay**) Gardner 1934b: 1–17. (**cn**) Browne 1968b: 563; Huque 1966; Stebbing 1914: 567. (**ec**) Beeson 1922c: 496; Chararas 1959c; Stebbing 1914: 567. (**hb**) Beeson 1922c: 496; Browne 1968b: 563; Cotes 1893a; Stebbing 1909b: 14, 30, 1911a: 3, 1914: 567. (**ds**) Beeson 1922c: 496; Bhasin, Roonwal, & Singh 1958; Browne 1968b: 563; Cotes 1893a; Hagedorn 1910d: 58; Kleine 1913b: 131, 1914b: 270, 1934a: 152; Miwa 1931: 269; Qadri 1951a: 368, 1951c: 238; Schedl 1973b: 210, 1974a: 87; Zethner 1973. (**tx**) Blandford 1893: 63; Gardner 1934b; Hagedorn 1910a: 105; Stebbing 1899: 64, 1908b: 1, 1909b: 14, 30, 1914: 567.

coniferae Stebbing 1909b: 30 (*Pityophthorus*). Holotype ♀; L. Chilzoga, Shingbai, Zhob (Baluchistan) [Pakistan]; FRI, Dehra Dun. Synonymy: Beeson 1922c: 496.

References: (**cn**) Huque 1966; Pierce, W. D. 1917: 52; Stebbing 1903a: 242, 1905: 8, 1914:

562; Troup 1916: 1–126. (**ec**) Stebbing 1914: 562. (**hb**) Stebbing 1903a: 242, 1908a: 111, 1909b: 14, 30, 1910, 1911a: 6, 1914: 562. (**ds**) Hagedorn 1910d: 52; Kleine 1913b: 131, 1914b: 270; Pierce, W. D. 1917: 52; Qadri 1951b: 67; Stebbing 1903a: 242; Yin & Huang 1981: 562. (**tx**) Beeson 1922c: 496; Hagedorn 1910a: 104; Stebbing 1909b: 14, 30, 1914: 562; Yin & Huang 1981: 562.

***seirindensis* Murayama** 1929: 26. Holotype ♂; Cheongrim dong (Korea); Murayama Collection in USNM, Washington.

Figures: Nakane et al. 1963:pl. 192, Nobuchi 1974:pls. 1–2, Yin, Huang, & Li 1984: 124 (female frons).

Distribution: Asia (Heilongjiang, Sichuan in China/ Japan/ Korea/ Kuril Islands/ Sakhalin Island/ E USSR).

Hosts: *Picea ajanensis, P. asperata, P. jezoensis, P. koraiensis, P. microsperma, P. obovata, Abies nephrolepis, Pinus koraiensis*.

References: (**cn**) Anonymous 1980g; Inouye 1955; Inouye & Yamaguchi 1955a: 218, 235; Kurenzov 1935c: 188. (**ec**) Inouye & Yamaguchi 1955a: 218, 235; Inouye et al. 1955: 78; Nishiguchi 1960c. (**hb**) Inouye et al. 1955: 78; Krivolutskaya 1956: 834; Kurenzov 1935a: 20, 40, 1948b: 110; Qiu & Huo 1958: 267; Schedl 1962a: 138; Stark 1952: 380. (**ds**) Anonymous 1980g; Cho 1957; Choo 1983: 87; Choo & Woo 1985: 165; Kleine 1934a: 152; Ko 1969: 281; Krivolutskaya 1956: 834, 1983; Kurenzov 1935a: 20, 1935c: 188, 1936a: 113, 1938a: 59; Murayama 1929b: 2, 1929c: 23, 1930a: 2, 1930b: 15, 1936b: 116, 1937b: 375, 1942a: 55, 1954b: 201; Nakane et al. 1963: 383; Nishiguchi 1960: 64–73; Nobuchi 1974: 40; Schedl 1962a: 138; Stark 1936e: 145, 1952: 380; Yin, Huang, & Li 1984: 124. (**tx**) Choo 1983: 87; Kono 1938: 69; Krivolutskaya 1956: 834, 1958: 174–175; Kurenzov 1941a: 199–200, 1948b: 110; Murayama 1929: 26, 1930b: 15, 19, 31, 1937b: 375, 1954b: 201; Nakane et al. 1963: 383, pl. 192; Nobuchi 1974: 40, pl. 1, 2; Schedl 1934f: 1644, 1962a: 138, 1962q: 493; Stark 1938: 145, 148, 1952: 380; Yin, Huang, & Li 1984: 124.

aizawai Kono 1938: 69. Holotype ♂; Japan: Sachalin, Horo; apparently in Kono Collection. Synonymy: Krivolutskya 1958: 175.

References: (**ec**) Ishii 1939: 191. (**hb**) Krivolutskaya 1956: 834; Stark 1952: 381. (**ds**) Kono 1938b: 65, 69; Kono & Tamanuki 1939: 90, 94; Krivolutskaya 1956: 834; Schedl 1962a: 139; Stark 1952: 381. (**tx**) Kono 1938: 69; Krivolutskaya 1956: 834, 1958: 175; Schedl 1962a: 139; Stark 1952: 381.

nitidus Eggers 1941b: 121. Syntypes 1♂, 2♀; Ussurigebiet; Eggers Collection, in NHMW, Wien. Synonymy: Schedl 1962a: 493.

Notes: (1) Schedl 1979c: 170 (citation of holotype invalid).

References: (**tx**) Eggers 1941b: 121; Pfeffer 1946b: 114; Schedl 1962a: 493, 1979c: 170; Sokanovskii 1954: 19.

***spessivtsevi* Lebedev** 1926: 120. Holotype ♂?; Talas-Aaltau, Syr-Darja-Gebiet, Turkestan; Lebedev Collection.

Distribution: Asia (Xinjiang in China/ Kashmir, Uttar Pradesh in India/ E USSR).

Hosts: *Picea schrenkiana, P. morinda, Pinus excelsa, P. gerardiana, P. roxburghii*.

Notes: (3) Beeson 1941 (1961: 291) (used *perfossus*, nomen nudum, for this species, synonymy in Sokanovskii 1954: 19).

References: (**hb**) Schedl 1962a: 146; Stark 1952: 387. (**ds**) Kadyrov 1989; Kleine 1934a: 152; Marikovskii 1956: 73; Parfentev 1951: 429–431; Schedl 1962a: 146, 1969c: 51; Stark 1936e: 146, 1952: 387; Yin, Huang, & Li 1984: 125. (**tx**) Beeson 1941 (1961: 291); Eggers 1933f: 50–51; Lebedev 1926: 120; Murayama 1929: 29–30; Pfeffer 1946b: 116; Schedl 1934f: 1644, 1962a: 146; Sokanovskii 1954: 19, 1960: 676; Stark 1936: 146, 1952: 387; Yin, Huang, & Li 1984: 125.

***trepanatus* (Nordlinger)** 1848: 239 (*Bostrichus*). Syntypes, sex?; Stuttgart, Germany; NHMW, Wien, lost.

Figures: Grune 1979: 130, Pfeffer 1989a:pl. 9, Plaza & Gil 1982: 260, 262.

Distribution: Europe (Austria/ Belgium/ Bulgaria/ Corsica/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Hungary/ Italy/ Norway/ Poland/ Romania/ Scotland/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia).

Hosts: *Pinus austriaca, P. heldreichii, P. peuce, P. sylvestris*.

References: (**ay**) Chararas 1977b; Escherich 1923: 484, 553; Fuchs 1911a. (**bv**) Chararas 1977b; Grune 1979: 131. (**cn**) Androic 1951: 396–399, 1966: 49; Escherich 1923b: 484, 553; Hanson 1940a; Koch 1913: 122; Maar & Voore 1935: 641–651; Marcu 1926c: 66; Muller 1912: 186; Nusslin 1913: 282; Pierce, W. D. 1917: 74; Rhumbler 1927: 339; Schimitschek 1937c: 56, 1955c: 88; Schwerdtfeger 1944a: 177, 1957a: 183; Sierpinski 1966: 60; Wichmann 1927b: 352. (**ec**) Karpinski 1932a: 101; Kostenko 1929; Masutti 1959: 268, 301; Meyer 1934a: 616; Michalski & Ratajczak 1989; Nuorteva 1957b: 53; Nusslin 1927: 339; Pfeffer 1960: 346; Ruhm 1956b: 4; Schwerdtfeger 1944a: 177, 1957a: 183; Sedlaczek 1935a: 163; Thompson, W. R. 1943: 59; Tragardh 1927a: 195, 1928: 776; Vaartaja 1947: 44. (**hb**) Androic 1951; Barbey 1901: 2, 26, 96; Chararas 1962c: 352, 1977b; Charvat 1950; Escherich 1923b: 484, 553; Fitze 1954a; Gyorfi 1957; Kangas 1949c; Karpinski 1933b: 35; Karpinski & Strawinski 1948: 157; Lengerken 1939: 65, 1954: 86; Masutti 1959: 268,

301; Munro 1926: 64; Nordlinger 1856: 23; Nunberg 1929: 112; Nusslin 1913: 282, 1927: 339; Pfeffer 1941b: 6; Postner 1974: 443; Rhumbler 1927: 339; Schedl 1962a: 142; Schwerdtfeger 1926: 91, 1944a: 177, 1957a: 183, 1981: 190; Sedlaczek 1935a: 163; Spessivtsev 1923: 214; Stark 1952: 384; Wachtl 1876a: 460; Wichmann 1927b: 352. (**ds**) Allen, A. 1951b: 115, 1951c, 1954, 1975; Androic 1951, 1966: 49; Angus 1964: 179; Bakke 1963b: 124–125; Bangsholt 1975: 95; Bejer-Petersen & Jorum 1977: 27; Borchert 1951; Brakman 1966b: 206; Butovitsch 1963; Charvat 1950; Eder 1934; Eggers 1912d; Endrodi 1958b; Escherich 1923b: 484, 553, 1932b; Fowler & Donisthorpe 1913: 199; Fuchs 1905a; Gobbi 1989: 61; Grune 1979: 131; Gyorfi 1940: 47; Hansen, V. 1939, 1956, 1964: 464; Hellen 1947; Hennig 1954: 263; Heyden, Reitter, & Weise 1906: 712; Horion 1951; Jazentkovsky 1912: 289; Joy 1909: 269; Kangas 1948b: 128, 1949c; Karpinski 1926: 82, 1931: 19, 33, 1932a: 101, 1933b: 35; Karpinski & Strawinski 1948: 157; Keler 1922: 269–276, 1925b: 273; Kiefer et al. 1942: 529; Klefbeck & Sjoberg 1960: 232; Kleine 1913a: 245; Kloft & Hinks 1945: 218; Knozek 1983; Kostenko 1929; Kozikowsky & Kuntze 1925: 20; Kunnemann 1921: 58; Kurir 1947c: 6; Lahtinen 1946: 132, 1947: 63; Leclercq 1971; Linder 1953: 71; Lucht 1987: 279; Lundberg 1981: 151; Mahler 1987: 233; Marcu 1926c: 66; Mequignon 1936: 15, 39; Munro 1921: 87; Nunberg 1928b: 88, 113, 1954: 73, 1960b: 159; Orest 1926c: 66; Pfeffer 1924a: 96, 1947e: 13, 1960: 346, 1984: 277, 1989a: 69; Pierce, W. D. 1917: 74; Pittioni 1943: 176; Plaza & Gil 1982: 260; Postner 1974: 443; Prossen 1913: 83; Reitter 1894a: 77; Roubal 1941: 272; Sainte-Claire & Mequignon 1938: 448; Schaum 1862: 101; Schedl 1962a: 142, 1980a: 25, 1981b: 83; Schilsky 1909: 188; Schnaider 1936: 366; Schwerdtfeger 1981: 190; Sierpinski 1966: 60; Stark 1926b: 105, 1926j: 127, 1936e: 145, 1952: 384; Stein 1868: 114; Stein & Weise 1877: 165; Wachtl 1876a: 460; Wichmann 1927a: 75; Winter, T. G. 1983: 22; Zivojinovic 1960: 24. (**tx**) Balachowsky 1947, 1949a: 246; Barbey 1901: 2, 26, 96; Charvat 1950; Duffy 1953; Eggers 1914: 40, 188, 1923b; Endrodi 1957a: 307, 1957b; Escherich 1923b: 484, 553; Ferrari 1867a: 33, 35, 1867b: 114; Fleischer 1927; Fuchs 1911a, 1912: 306–310; Grune 1979: 130–131; Hansen, V. 1956, 1964: 464; Kalina 1970: 127; Karpinski & Strawinski 1948: 157; Koch 1913: 122, 1932: 128; Kuhnt 1913: 1056; Lebedev 1926: 120, 123; Letzner 1891: 377; Lindemann 1875: 181–186; Lucht 1987: 279; Nordlinger 1848: 239, 1856: 23; Nunberg 1954: 73; Pfeffer 1932b: 24, 1941b: 6, 1946b: 115, 1947e: 13, 1955a: 228, 1989a:pl. 9; Plaza & Gil 1982: 260, 262; Postner 1974: 443; Quaschik 1953: 35; Reitter 1894a: 77, 1913a: 97–98; Rhumbler 1927: 339; Schedl 1934f: 1644, 1962a: 142, 1980a: 25, 1981b: 93; Schimitschek 1937c: 56, 1955c: 88; Schmidt, G. 1980: 24; Spessivtsev 1922a: 481, 1923: 214, 1925a: 185; Stark 1936: 145, 147, 1952: 384; Weber, L. 1912: 30; White, R. E. 1983: 331–332. (**ms**) Eggers 1910b; Escherich 1932b; Sedlaczek 1913: 453; Weber, L. 1912: 30.

austriacus Wachtl 1887: 320 (*Tomicus*). Syntypes, sex?; Denmark; not located. Synonymy: Balachowsky 1949a: 246.

References: (**cn**) Barbey 1925: 280; Maar & Voore 1935: 641–651; Rhumbler 1922: 323; Wachtl 1901: 381. (**ec**) Barbey 1927; Kleine 1908c: 214. (**hb**) Androic 1951; Barbey 1925: 280; Rhumbler 1922: 323; Wachtl 1901: 381. (**ds**) Androic 1951; Barthe 1896; Eggers 1912d; Hagedorn 1910d: 48; Kleine 1912a: 268, 1913a: 35, 1913b: 131, 1934a: 151; Lovendal 1889a: 271, 1890c: 208; Reitter 1894b: 15; Sainte-Claire 1914: 472; Schaufuss 1915: 1245; Schilsky 1909: 188; Tredl 1907: 14. (**tx**) Bergroth 1893; Eggers 1912c; Fauvel 1889; Hagedorn 1910a: 104; Lovendal 1890c: 208; Reitter 1889d: 271, 1894b: 15; Rhumbler 1922: 323; Schedl 1934f: 1644; Wachtl 1887: 320, 1895: 8. (**ms**) Eggers 1910b; Reitter 1889d: 271.

elongatus Lovendal 1889b: 61 (*Tomicus*). Syntypes, sex?; Denmark; not located. Synonymy: Balachowsky 1949a: 246.

References: (**ay**) Fuchs 1911a. (**hb**) Androic 1951. (**ds**) Androic 1951; Eggers 1912d; Felt 1906: 482; Fowler & Donisthorpe 1913: 199; Grill 1895: 311; Lovendal 1889a: 271, 1890c: 208; Reitter 1894b: 15; Sahlberg 1900: 105; Schilsky 1909: 188. (**tx**) Balachowsky 1949a: 246; Bergroth 1893; Eggers 1912c: 208–209, 1912d: 1–4; Fuchs 1911a; Lovendal 1889b: 23, 1889b: 61, 1890c: 208, 1898: 166; Reitter 1889d: 271, 1894b: 15, 1913a: 97; Schedl 1934f: 1644; Spessivtsev 1922: 481, 490. (**ms**) Reitter 1889d: 271.

Genus *Pityokteines* Fuchs

PITYOKTEINES FUCHS 1911: 33. Type-species: *Ips curvidens* Germar, subsequent designation by Hopkins 1914: 127.

Orthotomides Wood 1951b: 32. Type-species: *Orthotomicus lasiocarpi* Swaine, original designation. Synonymy: Wood 1975a: 35.

References: (**tx**) Hopping 1963b: 61; Wood, S. L. 1951: 32, 1975a: 21.

Keys: Bright 1976d: 145, Swaine 1918a, Wood 1982b: 656 for North America; Balachowsky 1949a: 255, Grune 1979: 137, Reitter 1913a: 102, Schedl 1981b: 85, Stark 1952: 421 for Europe.

References: (**ay**) Nobuchi 1969a:65. (**hb**) Wood, S. L. 1986a: 68. (**ds**) Scheerpeltz & Winkler 1930: 258; Wood, S. L. 1986a: 68. (**tx**) Balachowsky 1949a: 259; Bright 1976d: 145; Bright & Stark 1973: 80; Chamberlin 1939: 432–435; Dodge 1938: 19; Fuchs 1911: 33; Hopping 1963b: 61; Karaman

1972: 147; Lanier 1968: 4167; Marcu 1928: 327–336; Michalski 1958: 35; Nobuchi 1974: 41; Pfeffer 1963: 203–207, 1989a: 72; Reitter 1913a: 102; Spessivtsev 1931: 90; Stresemann et al. 1989: 351; Swaine 1918a: 47, 123, Wood, S. L. 1975: 21, 1982b: 656–662, 1986a: 68; Zivojinovic 1948: 65–73.

***curvidens* (Germar)** 1824: 462 (*Tomicus*). Syntypes, sex?; Schandaviae in Saxonia; not located.
Figures: Alkan 1946: 113, Balachowsky 1949a: 255–256, 259, Barbey 1925: 157, Grune 1979: 138, Joly 1976b: 144, 147, Postner 1974: 446.
Distribution: Africa (introduced to South Africa), Asia (Japan/ Turkey), Europe (Austria/ Belgium/ Bulgaria/ Czechoslovakia/ France/ Germany/ Greece/ Hungary/ Italy/ Luxemburg/ Poland/ Romania/ Spain/ Switzerland/ Yugoslavia), South America (introduced to Argentina).
Hosts: *Abies pectinata, A.* spp., *Larix europea, Pinus* spp., *Picea* spp.
References: (**ay**) Chararas, Chipoulet, & Courtois 1979; Escherich 1923b: 449, 486, 604; Feytaud 1940a; Fuchs 1911a; Heeger 1866; Klimesch 1914: 216; Leisewitz 1906: 98; Lekander 1959b: 23; Marcus 1930: 644; Nunberg 1928a: 141; Nusslin 1911a: 2; Sedlaczek 1902b: 244; Wichmann 1912a: 10. (**bv**) Annila 1971a: 12; Berton & Chararas 1967: 1238–1243; Chararas 1966b, 1982; Chararas, Desveaux, & Kogane-Charles 1978b, 1978d; Chararas & Stephanopoulos 1975a; Chararas et al. 1982: 1094; Garring & Vite 1975; Grune 1979: 139; Harring 1976, 1978; Harring, Vite, & Hughes 1975; Hierholzer 1950, 1951b; Inscoe 1982; Krol & Zabecki 1976; McMullen & Atkins 1962b: 1321; Meixner 1937: 1214; Perttunen 1957: 107; Prell 1930c: 643, 1931: 369; Schneider-Orelli 1947c: 94; Schwerdtfeger 1981: 193; Vasechko 1971a, 1971b; Wichmann 1912a: 10. (**cn**) Androic 1966: 49; Anonymous 1978i; Aubert 1947: 80; Barbey 1906a, 1925: 156; Berton & Chararas 1967: 1238–1243; Blanchere & Robert 1889; Borcea 1924: 221–260, 1930: 271; Braun 1941b: 373–387; Bruneau 1950; Capek et al. 1957; Chararas 1978; Chorbadzhievo 1929; Coulon 1949: 355–360; Chrystal 1949b; Desfarges 1951; Eckstein 1915, 1926: 574; Escherich 1923b: 449, 486, 604, 1937; F. B. 1885; Fankhauser 1896, 1949: 347–355; Feytaud 1946, 1950a; Fice 1961: 173–204; Fleischer 1877a; Franz 1947b; Frohlich 1926: 101; Funke 1870; Gabler 1955; Gail 1905; Gayler 1951; Georgescu et al. 1957: 357, 447; Gradojevic 1938, 1940, 1966: 3–48; Grandi 1951; Grunert 1883; Guse 1894; Hartig 1861: 325; Hasek 1955; Herlein 1878; Hesko 1966; Hess 1898: 357; Hess & Beck 1914: 281, 1927: 337; Hierholzer 1949, 1951b: 228–234, 1954a: 329; Hopkins 1899c: 310; Hrubik 1973; Ilse 1898: 300; J. M. 1948: 460; Jacentkovsky 1933: 271; Jahn 1952a: 99; Joly 1949b: 253, 1976; Judeich & Nitsche 1895: 489; Kahl 1896; Kailidis 1964a: 41–54, 1966a: 81–85; Kailidis & Georgevits 1972; Kailidis & Markalas 1988; Kamp 1950; Kauschinger 1893: 143; Keller 1903b: 58; Kholodkovskii 1912: 286, 316; Kirchner 1860: 91; Konopka 1871: 28; Kovacevic 1957: 67; Krol & Zabecki 1976; Kudela 1946b: 351; Kunstler 1864: 782; Kuteev 1965, 1967; Loeffler 1854: 172; Lysenko 1959: 15–22; Madelin 1948: 461; Maksimovic & Milanovic 1964, 1966; Maksymov 1950: 499; Marcu 1926c: 66; Marker-Kohlfurt 1896: 84; Martin & Cobos 1986; Merker 1954b: 209, 1967: 13–24; Micklitz 1875b: 29; Mokrzecki 1928: 273; Muller 1912: 186; Nordlinger 1870b: 261; Nosek 1951: 106, 1952b: 96; Novak, V., Hrozinka, & Stary 1976: 70; Nusslin 1913: 206; Ohnesorge 1953: 439; Ow 1948: 153; Packard 1890: 29; Pfeffer 1948d: 235; Pierce, W. D. 1917: 69; Pjatnitskii 1932: 295–302; Polozencev & Zolotov 1969: 70; Pomocnicze 1876: 163; Popovic 1931: 57; Ratzeburg 1871c: 82; Regula 1955: 120; Reh 1900a: 94; Rhumbler 1922: 311, 1927: 325; Rupf 1948: 164; Scheidter 1919: 84, 1920: 209; Schimitschek 1932a: 23, 1936: 565–602, 1937b: 9, 1937c: 58, 1938c: 2112, 1939d: 2112, 1944: 219, 1947g: 191, 1949b: 180, 1949c: 15, 1950: 29, 1952a: 194, 1955a: 86, 89, 1955b: 102, 1955c: 91, 1956: 340, 1961a: 154; Schmidt 1881: 33; Schneeberg 1925: 495; Schneider-Orelli & Kuhn 1948: 530; Schneider-Orelli & Maksymov 1949: 171; Schneidter 1919: 69–90, 1920; Schwerdtfeger 1944a: 182, 1950b: 68, 1957a: 187; Sedlaczek 1921: 335, 1933: 307, 1936: 200; Sekendiz 1987; Sinreich 1962; Souphieff & Scherbinovskaya 1937: 102; Spaic 1955: 454; Stockl 1941: 177; Swaine 1919c: 230; Thalenhorst 1950: 90; Trappen 1935: 144; Tubeuf 1903: 6; Vajda 1949: 273; Viebig 1948: 175; Vorontzov 1968; Wachtl 1901: 381; Wagner 1954c: 167; Wardle 1929: 325; Weber, H. 1926: 574; Weiser 1961a: 324–329; Westerboer & Bernard 1963: 530; Wichmann 1927b: 348, 356; Wilke 1931: 636; Wolff & Krausse 1922: 96; Wolfle 1948b: 259, 1949: 479, 1951: 169; Zieger 1950b: 38; Zwolfer 1949: 400, 1960. (**ec**) Annila & Perttunen 1964: 42; Apfelbeck 1916b; Balazy & Michalski 1964b; Barbey 1906a; Belanowskii 1930; Brauns 1950a; Bucher 1963: 134; Capek 1957; Chararas 1958b: 83–131, 1959a, 1959b, 1959c: 113–129, 1959d, 1959e; Chararas et al. 1982: 1094; Cooreman 1963: 46; DeLeon 1935a; Elliot & Morley 1907; Fleischer 1877a; Fuchs 1914a, 1929a, 1937; Fuhrer 1985; Galoux 1947d; Gauss 1954a: 423; Gillanders 1906; Gyorfi 1952b; Haenel 1914; Haeselbarth 1962: 283; Hesko 1966: 533–540; Hierholzer 1950, 1954a: 329, 1954b: 385; Hirschmann 1960, 1971a, 1971b: 40, 1978c; Hirschmann & Wisniewski 1983; Hirschmann & Zirngiebl-Nicol 1961; Hubault 1923a; Joly 1949a: 7; Kakuliya & Shalibashvili 1976b; Karpinski 1932a: 95, 1948: 231; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1980a, 1980b, 1983;

Kirshenblat 1948; Kleine 1908c: 214, 1909a: 48, 1944: 78; Knoche 1908b: 204; Kolubajiv 1954: 58; Kraemer 1948: 133, 1949: 59, 1950b: 349–430; Krieg 1961: 201; Krivosheina 1974; Krol & Zabecki 1976; Kuhn 1949a: 245; Lysenko 1959: 20; Merker 1954b: 209–217; Michalski & Ratajczak 1989; Moser 1952: 176; Nishiguchi 1970; Nosek 1951: 106, 1952b: 96; Nuorteva 1957b: 52, 1959d: 199; Nusslin 1927: 324; Perris 1856a: 244; Pfeffer 1928b: 7, 1943b: 179, 1955b: 84, 1960: 345; Poinar 1975: 161; Purrini 1977a; Ratzeburg 1869a: 94; Rondani 1873: 140; Ruhm 1956b: 4, 1957: 351; Scheucher 1959: 263; Schimitschek 1930a: 326, 340, 1941a: 305, 1950: 29, 1952a: 194, 1953b: 50, 1955a: 86, 89, 1964e; Schwerdtfeger 1944a: 182, 1950b: 68, 1957a: 187; Sedlaczek 1908: 46, 1933: 307, 1935a: 55; Sekendiz 1987; Sitowski 1930: 6; Smetana 1958: 63; Stolina 1959: 217; Swaine 1919c: 230; Symusik 1923: 7; Tenkacoa & Mituch 1987; Thompson, W. R. 1943: 90; Thompson, W. R. & Simmonds 1964: 33, 1965: 74; Vasechko 1971b; Vietinghoft 1924: 336; Vitzthum 1926: 427; Weiser 1961a, 1969; Westerboer 1963: 349; Wiackowski 1957a: 85; Wilke 1931: 636; Wood, D. L. & Bushing 1963: 1072; Zivojinovic 1950: 209–217. (**hb**) Alkan 1946: 113; Altum 1881c: 302; Apfelbeck 1916b: 429–439, 1917; Bach 1864; Barbey 1901: 10, 26, 93, 1913, 1925: 156, 1942; Bargmann 1897, 1898b, 1899a, 1900, 1904, 1906; Baudisch 1885, 1893, 1905a, 1905b; Beffa 1949, 1961; Bezares 1929; Blanchere & Robert 1889; Bonnemaison 1953; Borcea 1924; Brandt 1948; Braun 1941c; Cecconi 1906, 1924; Chararas 1962c: 258; Charvat 1950; Chittenden 1890; Chorbadzhievo 1929; Coudroy 1981a; Coulon 1949; Dombrowsky 1887, 1892; Dzhambazishvili 1961: 751–757, 1962; Eckstein 1889, 1897, 1915, 1926: 574; Eichhoff 1881a: 51, 245, 1882a: 241, 1882c: 705, 1892c: 99; Escherich 1923b: 449, 486, 604; Everts 1900; Feytaud 1946, 1950a; Fleischer 1877a; Fuchs 1904a; Furst 1888: 112; Gabler 1955; Gayler 1951; Gillanders 1906; Girard 1873; Gyorfi 1957; Hagedorn 1903a; Hartig 1861: 325; Heeger 1866; Helmbacher 1924; Hennings 1908a, 1908b, 1908c: 227, 1908d; Henschel 1876a: 113, 238, 1879b, 1895a: 182; Hess 1898: 357; Hess & Beck 1914: 281, 1927: 337; Hierholzer 1949; Hopkins 1899c: 310; Hufnagl 1887: 512; Hufnagl & Puzyr 1951: 109, 121; Ilse 1898: 300; Joly 1949a: 7, 1976; Judeich 1875a: 263; Judeich & Nitsche 1895: 489; Kahlich 1865b; Kamp 1951c; Karpinski & Strawinski 1948: 157; Karsch 1883: 141; Kauschinger 1883: 105, 1893: 143; Kholodkovskii 1912: 286, 316; Knotek 1894a: 558, 1897: 153, 1898b: 327, 1899a: 19; Kollar 1857: 187; Kraemer 1950b: 349–430; Lekander 1959a: 83, 1959b: 23; Lengerken 1939: 36, 1954: 87; Loeffler 1854: 172; Lohrenz 1907: 44; Loos 1913: 411; Louzil 1961: 44; Madon 1930: 99; Maksymov 1950: 499; Masutti 1964; Moser 1952: 176; Nishiguchi 1970; Nordlinger 1856: 20, 1864a: 260, 1870b: 261; Novak, V., Hrozinka, & Stary 1976: 70; Nunberg 1929a: 113, 1929c: 123; Nusslin 1898: 282, 1906b: 14, 1913: 206, 1927: 324; Ohnesorge 1953: 439, 1955: 279; Orest 1926a: 70, 1927: 59; Ow 1948: 153; Packard 1890: 29; Perris 1856a: 244; Pfeffer 1941b: 16, 1989a: 73; Postner 1974: 446; Prell 1930c: 643, 1931: 369; Ratzeburg 1837: 156, 1839: 169, 190, 1871c: 82; Rey 1900a: 94; Rhumbler 1922: 311, 1927: 325; Rimski-Korsakov et al. 1949: 291; Rupertsberger 1879: 231, 1880: 231; Schimitschek 1929: 83, 1930a: 326, 340, 1944: 219, 1955a: 86, 89; Schmidt 1881: 33; Schneider-Orelli 1947b: 157, 1947c: 94; Schroder 1896: 357; Schwerdtfeger 1944a: 182, 1957a: 187, 1981: 193; Sedlaczek 1921: 335, 1935a: 155; Sekendiz 1987; Spessivtsev 1913a: 77; Stark 1952: 421; Stebbing 1911a: 2; Szujecki 1955: 242; Taschenberg 1880: 220, 227; Tschorbadjiev 1929: 173; Vasechko 1971a, 1971b; Wachtl 1876a: 460, 1901: 381; Weber, H. 1926: 574; Weidenbach 1845: 116; Weiser 1961a; Wichmann 1927b: 348, 356; Wolff & Krausse 1922: 96. (**ds**) Acloque 1896; Ammann & Knabl 1923; Andersch 1951; Androic 1966: 48; Anonymous 1978i; Arru, Covassi, & de Bellis 1966: 32; Audras & Schaefer 1957; Barthe 1896; Bau 1888; Baudisch 1899; Beffa 1949; Bezares 1929: 83–107; Bielz 1851, 1887; Blackwelder 1947; Blanchere & Robert 1889; Borcea 1924; Brakman 1966b: 207; Brancsik 1871; Bruch 1914a; Buresh & Lazarov 1956; Calwer 1884, 1893; Capek et al. 1957; Cecconi 1895, 1897, 1906; Chapuis & Candeze 1853; Charvat 1950; Chittenden 1890; Chorbadzhievo 1924d, 1929; Eggers 1904; Endrodi 1958b; Escalera 1919; Escherich 1923b: 449, 486, 604, 1932b; Everts 1900, 1925; Favre 1890; Fricken 1889: 346; Fuchs 1904a, 1905a; Gabler 1949b; Gail 1906; Gaubil 1849: 126; Gemminger & Harold 1872: 2690; Gobang 1870: 133; Gozis 1875: 80; Grandi 1951; Gredler 1875: 115; Grune 1979: 139; Hagedorn 1903a, 1910d: 52; Hellen 1947; Hennig 1954: 257; Henschel 1895a: 182; Heyden 1876: 300; Heyden, Reitter, & Weise 1883: 182, 1891: 673, 1906: 712; Horion 1951; Hubault 1923b; Jacentkovsky 1933: 271, 1939: 76; Jazentkovsky 1912: 291; Joly 1949b: 254, 1976; Judeich & Nitsche 1895: 489; Kahlich 1865b; Kailidis 1964a, 1966a, 1966b: 55, 1985; Kailidis & Georgevits 1972; Kailidis & Markalas 1988; Kaltenbach 1874: 685; Kamp 1951c; Karpinski 1925: 21, 1926: 83, 1931: 19, 1932a: 95, 1948b: 231; Karpinski & Strawinski 1948: 157; Keler 1925b: 275; Kestercanek 1881a: 12; Kleine 1912a: 262, 264, 268, 1913a: 35, 1913b: 127, 1914b: 257, 1934a: 151; Knotek 1892a: 37, 1894a: 558, 1898b: 327; Koltze 1901: 153, 318; Kolubajiv 1934: 64; Koschitsky 1900: 83; Kovacevic 1957: 67; Kraatz 1869: 59; Kraemer 1948: 133; Krivosheina & Mamaev 1986: 97; Krol 1877: 34; Kudela 1946a: 338;

Kulczynski 1873: 109; Kurir 1947c: 18; Lacordaire 1866: 383; Langhoffer 1915c: 158; Leclercq 1971; Lentz 1857: 139; Lohrenz 1907: 44; Lokaj 1868: 64; Lomnicki 1886a: 243, 1913b: 148; Loos 1913: 411; Lucht 1987: 279; Malazgirt 1966: 64; Marcu 1926c: 66, 1928: 327–336; Mequignon 1936: 15, 38; Michalski 1957: 166; Mokrzecki 1928: 273; Murayama 1936a: 128, 1936b: 113, 1942a: 56, 1954b: 170, 201; Negru 1966b: 403, 1968a: 457; Nobuchi 1974: 41; Nunberg 1928b: 88, 115, 1954: 79; Nusslin 1898: 282; Oliveira 1887: 328; Orest 1926c: 66; Ortzen 1886: 280; Pacher 1865: 152; Perris 1876a: 254, 1877a: 414; Pfeffer 1924b: 472, 1928b: 7, 1935: 159, 1947d: 129, 1950b: 73, 1960: 345, 1989a: 73; Pierce, W. D. 1917: 73; Pittioni 1943: 175; Plaza & Gil 1982: 256; Postner 1974: 446; Prossen 1913: 83; Rapp 1934: 732; Ratzeburg 1837: 156, 1839: 169, 190; Redtenbacher 1858: 834, 1874: 378; Reitter 1869b: 154, 1894a: 85, 1897b: 244, 1916: 302; Rimski-Korsakov et al. 1949: 291; Roubal 1935b: 73, 1936b: 193, 1941: 274; Ruskov 1928c: 62; Sainte-Claire 1938: 449; Schaschl 1854: 133; Schaufuss 1915: 1246; Schaum 1859: 96, 1862: 101; Schedl 1959h: 100, 1961b: 184, 1967c: 72, 1980a: 26, 1981b: 86; Scheerpeltz & Winkler 1930: 258; Schilsky 1909: 188; Schwerdtfeger 1981: 193; Seidl 1876: 5; Seidlitz 1872: 396, 1891a: 566, 1891b: 612; Sekendiz 1987; Solla 1893: 217; Souphieff & Scherbinovskaja 1937: 102; Stark 1927b: 90, 1952: 421; Stein 1868: 114; Stein & Weise 1877: 165; Stierlin 1898: 444; Stierlin & Gautard 1871: 294, 1906: 206; Strohmeyer 1912e: 250; Sturm 1843: 230; Szujecki 1955: 242; Tredl 1907: 16; Tschorbadjiev 1929: 173; Wachtl 1876a: 460; Westhoff 1882: 239; Wichmann 1924: 16–18, 1927a: 76; Wiepken 1883: 89; Wilke 1931: 636; Zoufal 1920: 21. (**tx**) Acloque 1896; Alkan 1946: 113; Altman 1844; Bach 1854, 1864; Balachowsky 1949a: 258; Barbey 1901: 10, 26, 93; Bargmann 1897b, 1898b; Beffa 1949, 1961; Bertolini 1872; Blanchere & Robert 1889; Brancsik 1871; Calwer 1858; Chamberlin 1939: 432; Chapuis & Candeze 1853; Charvat 1950; Chorbadzhievo 1924d; Dombrowsky 1887, 1892; Eggers 1923b; Eichhoff 1864b: 42, 1877c: 388, 1878b: 275, 1881a: 51, 245, 1883a: 113, 139; Endrodi 1957b; Escherich 1923b: 449, 486, 604; Escherich & Escherich 1897; Fauvel 1889; Ferrant 1911; Ferrari 1867: 43; Fleischer 1905, 1927; Formanek 1907: 43; Fricken 1889: 346; Fuchs 1911a; Gabler 1949b, 1955; Germar 1824; Girard 1873; Grune 1979: 138–139; Hagedorn 1910a: 104; Henry 1892: 10–11; Henschel 1876a: 113, 238, 1885a, 1895a: 182; Hopkins 1914: 127; Jacobson 1895: 521; Jacquelin du Val & Fairmaire 1868: 107; Joly 1976, 1976b:fig. 144, 147; Judeich & Nitsche 1895: 489; Kalina 1975; Karpinski & Strawinski 1948: 157; Knotek 1892a: 37; Koch 1928: 117, 1932: 93; Lacordaire 1866: 383; Lekander 1959b: 23; Letzner 1891: 376; Leunis 1886: 780; Louzil 1961: 108; Lucht 1987: 279; Meixner 1937: 1214; Murayama 1936a: 128, 1954b: 170, 201; Negru 1966b: 403; Niisima 1909: 150; Nordlinger 1848: 237, 1856: 20; Novak, V., Hrozinka, & Stary 1976: 70; Nunberg 1928a: 141, 1929c: 123, 1930, 1948: 1–30, 1954: 79; Nusslin 1911a: 2; Ohnesorge 1955: 279; Pfeffer 1932b: 25, 1941b: 16, 1955a: 236, 1989a:pl. 10; Plaza & Gil 1982: 256; Portevin 1935: 336; Postner 1974: 446; Quaschik 1953: 35; Ratzeburg 1837: 156, 1839: 169, 190; Redtenbacher 1849a: 357, 1849b: 26, 1858: 834, 1874: 378; Reitter 1894a: 85, 1897b: 244, 1913a: 103, 1916: 302; Rey 1892b: 30; Rhumbler 1922: 311, 1927: 325; Rupertsberger 1879: 231, 1880: 231; Schedl 1934f: 1645, 1952f: 87, 1955e: 262, 1959h: 100, 1980a: 26, 1981b: 86; Schimitschek 1937c: 58, 1955c: 91; Schlechtendal & Wunsche 1879: 125; Sedlaczek 1912: 308; Seidlitz 1872: 396, 1891a: 566, 1891b: 612; Spessivtsev 1913a: 77, 1931: 75–76; Stark 1952: 421; Stierlin 1898: 444; Stresemann et al. 1989: 353; Taschenberg 1880: 220, 227; Wachtl 1895: 8; Weber, L. 1912: 30. (**ms**) Chararas 1959d, 1971a: 853; Eggers 1912e; Escherich 1932b; Fankhauser 1885: 185; Gotz 1877; Lekander 1959a: 83; Merino-Rodriguez 1966: 47; Reh 1900a: 94; Ritter 1929: 555; Schimitschek 1955b: 102; Schwappach 1924: 57; Sedlaczek 1902a: 126, 1913: 455, 1936: 200; Sinreich 1962; Vorontzov 1968; Weber, L. 1912: 30.

***elegans* Swaine** 1916b: 182. Holotype ♀; Hood River, Oregon [USA]; CNCI, Ottawa.

Distribution: North America (British Columbia in Canada/ California, Idaho, Oregon, Washington in USA).

Hosts: *Abies concolor, A. grandis, A. magnifica,* rare in other conifers, restricted to *Pseudotsuga menziesii* in N Idaho.

Notes: (1) Swaine (1916b: 182) clearly described the female and on p. 183 cites the type. For this reason, Bright's (1967b: 677) designation of a lectotype for this species was not necessary.

References: (**ay**) Kirtibutr & Schent 1977. (**cn**) Chamberlin 1924; Doane et al. 1936; Keen 1938: 32; Lindgren 1980a: 67; Ruppel 1967: 73; Swaine 1918a: 123–124. (**ec**) Ashraf 1969; Ashraf & Berryman 1969: 14; Berryman 1968a: 66, 1973: 1483; DeLeon 1934a; Hertert, Miller, & Partridge 1975; Keen 1938: 32; Kirtibutr 1974; Kirtibutr & Schenk 1977. (**hb**) Bright & Stark 1973: 81; Chamberlin 1939: 434, 1958: 180; Doane et al. 1936; Keen 1938: 32; Kirtibutr 1974; Lindgren 1980a: 67; Swaine 1918a: 123–124; Wood, S. L. 1982b: 661. (**ds**) Bedard 1938a: 32; Bright 1976d: 81; Bright & Stark 1973: 81; Chamberlin 1925, 1939: 434, 1958: 180; Evans, D. 1983: 34; Furniss, R. L. & Carolin 1977: 400; Hertert, Miller, & Partridge 1975; Hopping, R. 1922; Keen 1929: 40, 1938: 32; Kirtibutr 1977: 381; Kleine 1934a: 152; Laursen 1979; Leng 1920: 341; Patterson &

Hatch 1945: 153; Ruppel 1967: 73; Wood, S. L. 1972a: 418, 1982b: 661. (**tx**) Bright 1967b: 677, 1976d: 148; Chamberlin 1939: 434, 1958: 180; Evans, D. 1983: 34; Hoebeke 1978; Hopping 1963b: 65; Keen 1929: 40; Pardy 1977; de Ruette 1970: 107; Swaine 1916b: 182–183, 1918a: 123–124; Wood, S. L. 1972a: 418, 1982b: 661.

***lasiocarpi* (Swaine)** 1916b: 183 (*Orthotomicus*). Holotype ♀; Rogers' Pass, British Columbia [Canada]; CNCI, Ottawa.

Distribution: North America (Alberta, British Columbia in Canada/ Idaho, Montana, Oregon, Utah, Washington in USA).

Hosts: *Abies amabilis, A. lasiocarpa, Picea engelmannii, Pseudotsuga menziesii*.

Notes: (1) Swaine (1916b: 183) clearly described the female and on p. 184 cites the type; consequently, Bright's (1976b: 676) designation of a lectotype was not needed. (3) Wood 1951b: 32 (treated in *Orthotomides*).

References: (**cn**) Doane et al. 1936; Swaine 1918a: 121–122. (**hb**) Chamberlin 1939: 439, 1958: 184–185; Doane et al. 1936; Swaine 1918a: 121–122; Wood, S. L. 1982b: 660. (**ds**) Bright 1967b: 676, 1976d: 144; Chamberlin 1925, 1939: 439, 1958: 184–185; Furniss, R. L. & Carolin 1977: 400; Gast et al. 1989: 385; Hopping, R. 1922; Keen 1929: 39; Leng 1920: 341; Still, Tidsbury, & Melvin 1974: 14; Wood, S. L. 1948: 66, 1951a: 128, 1972a: 417, 1982b: 660. (**tx**) Bright 1967b: 676, 1976d: 144; Chamberlin 1939: 439, 1958: 184–185; Hoebeke 1978; Hopping, G. 1963b: 63; Keen 1929: 39; de Ruette 1970: 105; Swaine 1916b: 183, 1918a: 121–123; Wood, S. L. 1951a: 128, 1951b: 32, 1972a: 417, 1975a: 21, 1982b: 660.

***minutus* (Swaine)** 1912a: 352 (*Dryocoetes*). Holotype ♀; Colorado, Lot 302, sub. 94, 130 [USA]; Cornell University Collection, Ithaca, New York.

Figures: Kusch 1967: 9.

Distribution: North America (Alberta, British Columbia in Canada/ Arizona, Colorado, Montana, New Mexico, Oregon, Utah, Washington, Wyoming in USA).

Hosts: *Abies lasiocarpa*.

Notes: (1) Although Swaine (1912: 353) clearly designated a type, Bright (1967: 674) cited this specimen as a lectotype.

References: (**cn**) Chamberlin 1924; Ciesla, Dewey, & Tunnock 1971: 21; Doane et al. 1936; Smith, G. J. & Melvin 1974b; Swaine 1918a: 123–124; Tripp & Blauel 1969: 104; Tripp, Robins, & Blauel 1970: 90; Woodring & Moser 1970. (**ec**) Chamberlin 1918a: 33; Hirschmann & Wisniewski 1982, 1983; Hurlbutt 1967. (**hb**) Bright 1976d: 145; Bright & Stark 1973: 81; Chamberlin 1939: 434, 1958: 180–181; Doane et al. 1936; Swaine 1918a: 123–124. (**ds**) Bright 1976d: 145; Bright & Stark 1973: 81; Chamberlin 1918a: 33, 1925, 1939: 434, 1958: 180–181; Elias 1985: 39; Furniss, R. L. & Carolin 1977: 400; Gast et al. 1989: 385; Hopping, R. 1922; Keen 1929: 40; Kleine 1913b: 136, 1934a: 153; Kusch 1967; Leng 1920: 341; Smith, G. J. & Melvin 1974b; Thatcher 1935: 261; Wood, S. L. 1948: 67, 1951a: 128, 1957c: 401, 1972a: 418, 1982b: 659. (**tx**) Bright 1967b: 674, 1976d: 145, Chamberlin 1939: 434, 1958; Hopping, G. 1963b: 63; Keen 1929: 40; Kusch 1967: 9; de Ruette 1970: 100; Swaine 1912a: 352, 1918b: 123–124; Wood, S. L. 1951a: 128, 1957c: 400–401, 1972a: 418, 1982b: 659.

jasperi Swaine 1916b: 181. Holotype ♀; Jasper Park, Alberta, Canada; CNCI, Ottawa. Synonymy: Wood 1957c: 401.

Notes: (1) Swaine (1916b: 181) clearly described the female and on p. 182 cites the type; consequently, Bright's (1967b: 677) designation of a lectotype was unnecessary.

References: (**cn**) Chamberlin 1924; Doane et al. 1936; Swaine 1918a: 123–124. (**hb**) Chamberlin 1939: 435; Doane et al. 1936; Swaine 1918a: 123–124. (**ds**) Chamberlin 1917, 1925, 1939: 435; Hopping, R. 1922; Keen 1929: 40; Kleine 1934a: 153; Leng 1920: 341. (**tx**) Bright 1967b: 677; Chamberlin 1939: 435; Hoebeke 1978; Keen 1929: 40; de Ruette 1970: 107; Swaine 1916b: 181–182, 1918a: 123–124; Wood, S. L. 1957c: 400.

***mystacinus* Wood** 1975a: 29. Holotype ♀; Mount Rainier National Park, Washington [USA]; CNCI, Ottawa.

Distribution: North America (Mount Rainier in Washington in USA).

Hosts: *Abies amabilis*.

References: (**ds**) Furniss, R. L. & Carolin 1977: 400; Wood, S. L. 1982b: 660. (**tx**) McNamara 1984: 753; Wood, S. L. 1975a: 29, 1982b: 660.

***ornatus* (Swaine)** 1916b: 185 (*Orthotomicus*). Holotype ♀; Williams, Arizona [USA]; CNCI, Ottawa.

Figures: Bright 1976d: 146.

Distribution: North America (British Columbia in Canada/ Arizona, California, Colorado, Idaho, Montana, New Mexico, Oregon, South Dakota, Utah in USA).

Hosts: *Pinus ponderosa*, less common in *P. attenuata, P. contorta, P. edulis, P. jeffreyi, Picea pungens*.

Notes: (1) Wood 1966: 27 (to *Pityokteines*). Bright (1967b: 676) cites this type as a lectotype; however, Swaine (1916b: 186) clearly cites a type.

References: (**cn**) Blackman 1931c; Doane et al. 1936; Keen 1929: 57, 1938: 118, 1952c: 153; Lindgren 1980a: 67; Schuder 1969: 78; Swaine 1918a: 121–122. (**ec**) Blackman 1931c; Keen 1938: 118; Massey 1961: 358; Stephen & Dahlsten 1976b: 292. (**hb**) Blackman 1931c; Bright & Stark 1973: 81; Chamberlin 1939: 438, 1958: 183; Doane et al. 1936; Keen 1929: 57, 1938: 118, 1952c: 153;

Lindgren 1980a: 67; Swaine 1918a: 121, 133; Wood, S. L. 1982b: 657. (**ds**) Atkinson & Equihua 1988: 94; Bright 1967b: 676, 1976d: 145; Bright & Stark 1973: 81; Chamberlin 1917: 328, 1925, 1939: 438, 1958: 183; Evans, D. 1983: 145; Gast et al. 1989: 385; Hopping, R. 1922, 1924: 125–128; Keen 1929: 39, 57, 1938: 118, 1949a: 93, 1952c: 153; Lange 1937: 173; Leng 1920: 341; Miller, R. F., Morgan, & Hicock 1985: 501; Nunberg 1961b: 611; Patterson & Hatch 1945: 153; Schedl 1962k: 1097; Schuder 1969: 78; Wood, S. L. 1972a: 418; 1982b: 657. (**tx**) Bright 1967b: 676, 1976d: 145–146; Chamberlin 1939: 438, 1958: 183; Evans, D. 1983: 34; Hoebeke 1978; Keen 1929: 39; de Ruette 1970: 105; Swaine 1916b: 185, 1918a: 121–122; Wood, S. L. 1966b: 27, 1972a: 418, 1982b: 657.

***sparsus* (LeConte)** 1868: 160 (*Xyleborus*). Holotype ♀; Point Keweenaw, Lake Superior, Michigan [USA]; MCZ, Cambridge.

Figures: Kusch 1967: 9, Rose & Lindquist 1977: 118.

Distribution: North America (Alberta, New Brunswick, Newfoundland, Nova Scotia, Ontario, Quebec, Saskatchewan in Canada/ Maine, Massachusetts, Michigan, Minnesota, New Hampshire, New York, Pennsylvania, West Virginia, Wisconsin in USA).

Hosts: *Abies balsamea*.

References: (**ay**) Kirtibutr & Schenk 1977: 381; Krywienczyk 1966; Thomas, J. B. 1957: 4, 1967. (**bv**) Hosking & Knight 1975, 1976. (**cn**) Baker, W. L. 1972: 263; Basham 1959: 295, 1986; Belyea 1948: 1, 1952a: 326, 1952b: 734–738; Blackman 1919: 148, 1950; Browne 1968b: 563; Carroll & Parrott 1963; Chamberlin 1924; Craighead 1924: 42; Currie 1905: 80; Doane et al. 1936; Drooz 1985: 357; Felt 1906: 752, 1924: 268, 1926: 248, 268, 1930a: 247, 249, 268, 1942: 6; Felt & Bromley 1943: 326–327; Felt & Rankin 1932: 235, 406; Graham 1922b; Harrington 1881: 31; Hewitt 1920: 1–23; Hopkins 1899c: 446; Howse, Gross, & Rose 1981: 55; Lindquist, O. H. & Syme 1981: 88; Magasi 1988: 89; Miller-Weeks 1985: 19; Moody 1988: 61; Packard 1890: 720; Pardy 1972: 7; Pettit 1927: 12, 1928: 348; Pierson 1923: 26, 1927: 67; Rose & Lindquist 1977: 118–119; Schedl 1928: 110; Sippell, Rose, & Gross 1978: 56; Swaine 1918a: 123, 1919: 46, 1922: 33, 1928: 1–20; Swaine et al. 1924: 18, pl. 11, 22; Syme & Nystrom 1988: 84; Wilson, L. F. 1977: 72. (**ec**) Basham 1959: 295, 1980; Belyea 1948, 1952a: 326, 1952b, 1960; Bushing 1965: 464; Felt 1906: 752; Graham 1920, 1921, 1922b, 1923: 22–40, 1924: 33; Hosking & Knight 1976; Lindquist, E. E. 1969c; Marsh 1979: 295; Morley 1939: 244; Swaine 1921: 345; Tomalak, Welch, & Galloway 1989b; Wall 1988; Warren 1987. (**hb**) Anderson, R. F. 1960: 241; Baker, W. L. 1972: 263; Belyea 1950: 2; Blackman 1950; Bright 1976d: 148; Browne 1968b: 563; Chamberlin 1939: 433; Chittenden 1890; Doane et al. 1936; Drooz 1985: 357; Eidmann 1962: 161; Felt 1906: 752, 1926: 248, 268, 1930a: 247, 249, 268; Felt & Rankin 1932: 235, 406; Gobeil 1935; Harrington 1902a: 116; Hopkins 1893a: 130, 1893b: 208, 1899c: 446; Hosking 1976b; Hosking & Knight 1976; Kaston & Riggs 1937: 98; Morley 1939: 244; Morstatt 1924: 8; Mott 1954: 1; Pierce 1907: 290; Pierson 1923: 26, 1927: 67; Prebble 1933: 145–146; Rose & Lindquist 1977: 118–119; Schwarz 1888a: 80; Swaine 1918a: 123; Swaine et al. 1924:pl. 11, 22; Wilson, L. F. 1977: 72. (**ds**) Anderson, R. F. 1960: 241; Anonymous 1926c: 519; Austara et al. 1983; Beaulne 1956; Blackman 1950; Bright 1971a: 126, 1976d: 148; Britton 1920a; Brown 1934; Browne 1968b: 563; Chamberlin 1925, 1939: 433; Chittenden 1890; Dodge 1938: 52–53; Drooz 1985: 357; Dunn 1936: 9; Eidmann 1935; Felt 1926: 247, 268, 1930a: 247, 249, 268; Felt & Rankin 1932: 235, 406; Gemminger & Harold 1872: 2686; Hagedorn 1910a: 59; Hamilton 1894: 406, 1895a: 346, 378; Hatch 1924; Henshaw 1882: 269, 1885: 147; Hopkins 1893a: 130; Houghton 1905; Hubbard & Schwarz 1878b: 624; Kleine 1913b: 131, 1914b: 410, 1934a: 153; Kusch 1967; Leng 1920: 341; Leonard 1928: 519; Linder 1953: 71; Lindquist, O. H. & Syme 1981: 88; Macfillvray, A. & Houghton 1902; Martineau & Beique 1955: 34; Morgan, A. V. & Morgan 1980: 1110; Schwarz 1886: 41, 1888a: 80; Schwert et al. 1985; Slosson 1906: 325; Smith, J. B. 1900: 362, 1910: 401; Still, Tidsbury, & Melvin 1974b; Swaine 1909: 133, 1918b: 860–861; Syme & Nystrom 1988: 84; Wood, S. L. 1982b: 661. (**tx**) Benoit 1985: 203; Bright 1976d: 148, 203, 212; Chamberlin 1939: 433; Dodge 1938: 52–53; Eichhoff 1896: 609; Hagedorn 1910a: 106; Hamilton 1891: 130, 132; Kusch 1967: 9; LeConte 1868: 160, 1876: 360, 1878b: 624; Lindquist, O. H. & Syme 1981: 88; Pardy 1974, 1977; Rose & Lindquist 1977: 118–119; Schwarz 1886: 41; Swaine 1909: 133, 1915a: 9, 1916b: 181–185, 1918a: 123–124; Syme & Nystrom 1988: 84; Thomas, J. B. 1957: 4, 1967; Thomas, J. B. & Krywienczyk 1966; Titus, Meikle, & Harrison 1985: 105; Wood, S. L. 1982b: 661. (**ms**) Eckstein 1900c.

balsameus LeConte 1878b: 625 (*Tomicus*). Lectotype ♂; central New York [USA]; MCZ, Cambridge, designated by Wood 1982b: 662. Synonymy: Swaine 1918a: 123.

References: (**cn**) Currie 1905: 81; Hewitt 1914: 501–518, 1916: 851–876; Hopkins 1904a: 25; Swaine 1910d: 42, 1913: 41–43, 1919: 230; Walker 1912: 60. (**ec**) Felt 1906: 375–379. (**hb**) Felt 1901: 519–522, 1902: 65, 1906: 375–379; Hopkins 1904a: 25; Swaine 1911b: 81. (**ds**) Currie 1905; Hagedorn 1910d: 49; Henshaw 1882: 269; Hubbard & Schwarz 1878b: 625;

Kleine 1913b: 131, 1914b: 407, 1934a: 152; Leng 1920: 341; Swaine 1909: 119, 1911b: 81. (**tx**) Eichhoff 1896: 609–610; Hagedorn 1910a: 104; LeConte 1878b: 625; Swaine 1909: 119–120, 1915a: 10, 1918a: 123.

***spinidens* (Reitter)** 1894a: 85 (*Ips*). Holotype ♀?: Kaukasus; NHMB, Budapest.

Figures: Balachowsky 1949a: 256, 259 (adult), Grune 1979: 136, Novak, Hrozinka, & Stary 1976: 71, Plaza & Gil 1982: 250, 256.

Distribution: Asia (Korea/ Turkey), Europe (Austria/ Bulgaria/ Corsica/ Czechoslovakia/ France/ Germany/ Greece/ Hungary/ Italy/ Poland/ Romania/ Switzerland/ W USSR/ Yugoslavia).

Hosts: *Abies alba, A. borisii-regis, A. cephalonica, A. pectinata,* rare in *Larix europaea.*

References: (**ay**) Chararas, Chipoulet, & Courtois 1979; Escherich 1923b: 486; Fuchs 1911a. (**bv**) Chararas 1966b, 1968b: 1552, 1982; Chararas & Stephanopoulos 1975a; Grune 1979: 137; Harring 1978; Hierholzer 1950, 1951b; Inscoe 1982; Jacobson 1972; Klassen, Ridgway, & Inscoe 1982; Krol & Zabecki 1976; Merker 1965a. (**cn**) Androic 1966: 49; Braun 1941b: 373–387; Capek et al. 1957; Eckstein 1926: 579; Egger 1949; Escherich 1923b: 486; Fice 1961: 173–204; Gradojevic 1940; Grandi 1951; Hasek 1955; Hierholzer 1949, 1951b, 1954a: 329; Kailidis 1964a: 41–54, 1966a: 81–85; Kailidis & Georgevits 1972; Kailidis & Markalas 1988; Kholodkovskii 1912: 318; Kovacevic 1957: 67; Krol & Zabecki 1976; Maksymov 1950: 502, 506; Marcu 1926c: 66, 1930: 327–336; Martin & Cobos 1986; Merker 1954b: 210, 1955: 265, 1956b: 324, 1956d: 184, 1969; Muller 1912: 186; Mumford 1960: 37; Novak, V., Hrozinka, & Stary 1976: 71; Pelekassis 1962; Pierce, W. D. 1917: 79; Regula 1955: 131; Rhumbler 1922: 311, 1927: 325; Schimitschek 1932a: 23, 1935b: 149, 1937b: 9, 1937c: 58, 1938c: 2112, 1939d: 2112, 1944: 220, 1949b: 180, 1950: 29, 1952c: 59, 1955a: 86, 89, 1955c: 91, 1956: 340, 1961a: 154, 1964e; Schneider-Orelli & Kuhn 1948: 533; Schwerdtfeger 1944: 182; Spaic 1955: 454; Stockl 1941: 183; Thalenhorst 1950: 90; Vajda 1949: 273; Wachtl 1901: 381; Weber, H. 1926: 579; Zivojinovic 1950: 299–310; Zwolfer 1949: 400. (**ec**) Balazy 1962, 1965a; Balazy & Michalski 1962b, 1964b; Balazy et al. 1977; Capek 1957; Chararas 1958b, 1959d; Gauss 1954a: 423; Hierholzer 1950, 1954a: 329, 1954b: 385; Hirschmann & Wisniewski 1982, 1983; Karpinski 1932a: 95; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1983; Kleine 1908c: 214; Kraemer 1949: 60, 1950b: 354; Krol & Zabecki 1976; Merker 1954b: 210, 1956a: 179, 1965a; Michalski & Ratajczak 1989; Nusslin 1927: 324; Obertel 1957: 186; Pfeffer 1923a: 332, 1955b: 84, 1960: 345; Ruhm 1956b: 4; Schimitschek 1941a: 305, 1950: 29, 1955a: 86, 89; Schwerdtfeger 1944a: 82; Stolina 1959: 217; Wisniewski 1979b. (**hb**) Bargmann 1898b, 1899a, 1899c, 1900, 1904, 1906; Braun 1941c; Chararas 1962c: 286, 1968b; Charvat 1950; Coudroy 1981a; Eckstein 1926: 579; Escherich 1923b: 486; Formanek 1899; Grandi 1951; Gyorfi 1957; Hierholzer 1949; Kamp 1951c: 158; Karpinski & Strawinski 1948: 157; Kholodkovskii 1912: 318; Knotek 1899a: 19, 1899b: 1, 1901: 565; Kraemer 1949: 49–51, 1950b: 257, 354; Lengerken 1939: 68, 1954: 87; Maksymov 1950: 502; Merker 1960: 3, 1965: 1562–1570; Novak, V., Hrozinka, & Stary 1976: 71; Nusslin 1898: 282, 1927: 324; Orest 1926a: 68; Pfeffer 1941b: 16, 1989a: 73; Postner 1974: 448; Rhumbler 1922: 311, 1927: 325; Schimitschek 1936: 565–602, 1944: 220, 1955a: 86, 89; Schwerdtfeger 1944a: 182, 1981: 193; Stark 1952: 422; Wachtl 1901: 381; Weber, H. 1926: 579. (**ds**) Androic 1966: 48; Bargmann 1898a; Capek et al. 1957; Charvat 1950; Cho 1957; Choo 1983: 88; Choo & Woo 1985: 165; Endrodi 1958b; Escherich 1923b: 486, 1932b; Georgijevic 1966: 3–48; Grune 1979: 137; Heyden, Reitter, & Weise 1906: 712; Heyrovsky 1927; Horion 1951; Jazentkovsky 1912: 291; Kailidis 1964a, 1966a: 55, 1985; Kailidis & Georgevits 1972; Kailidis & Markalas 1988; Kamp 1951c; Karpinski 1925: 216, 1926: 83, 1932a: 95, 1948b: 231; Karpinski & Strawinski 1948: 157; Keler 1925b: 275; Kleine 1912a: 268, 1913a: 35, 1913b: 128; Knotek 1899b: 1, 1901: 565; Ko 1969: 279; Kovacevic 1957: 67; Kozikowsky 1921: 181; Kozikowsky & Kuntze 1925: 21; Kudela 1946a: 339; Kurir 1947c: 18; Lucht 1987: 279; Malazgirt 1966: 64; Marcu 1926c: 66; Merker 1956b: 324, 1960; Michalski 1957: 166; Mumford 1960: 37; Murayama 1929b: 2, 1929d: 3, 1929e: 23, 1930b: 16, 1937b: 375; Negru 1968a: 457; Nunberg 1928b: 88, 115, 1954: 79, 1964a: 236; Nusslin 1898: 282; Orest 1926c: 67–68; Pelekassis 1962; Pfeffer 1924b: 472, 1935: 158, 1960: 345, 1989a: 73; Pierce, W. D. 1917: 79; Pittioni 1943: 175; Pjatnitskii 1930a: 165; Plaza & Gil 1982: 250; Postner 1974: 448; Reitter 1894a: 85, 1897b: 245, 1916: 302; Roubal 1941: 274; Sainte-Claire 1906: 267, 1914: 473; Sainte-Claire & Mequignon 1938: 449; Schaufuss 1915: 1246; Schedl 1967c: 72, 1980a: 26, 1981b: 88; Schilsky 1909: 189; Schwerdtfeger 1981: 193; Stark 1927b: 90, 1952: 422; Tredl 1907: 16; Wichmann 1927a: 76. (**tx**) Balachowsky 1949a: 258; Bargmann 1898b; Charvat 1950; Choo 1983: 88; Endrodi 1957a: 307, 1957b, 1966: 292; Escherich 1923b: 486; Fleischer 1927; Formanek 1907: 44; Fuchs 1911a; Grune 1979: 136–137; Karpinski & Strawinski 1948: 157; Lucht 1987: 279; Murayama 1929: 20–30, 1930b: 16, 1937b: 375; Novak, V., Hrozinka, & Stary 1976: 71; Nunberg 1948: 1–30, 1954: 79; Pfeffer 1932b: 25, 1941b: 16, 1955a: 238, 1989a: pl. 10; Plaza & Gil 1982: 250, 256; Postner 1974: 448; Quaschik 1953: 35; Reitter 1894a: 85, 1897b: 245, 1913a: 103, 1916: 302; Rhumbler 1922: 311,

1927: 325; Schedl 1934f: 1645, 1952f: 87, 1980a: 26, 1981b: 88; Schimitschek 1937c: 58, 1955c: 91; Stark 1952: 422; Weber, L. 1912: 30. (**ms**) Chararas 1959d, 1971a: 853; Eggers 1910a; Escherich 1932b; Sedlaczek 1913: 455; Weber, L. 1912: 30.

curvidens heterodon Wachtl 1895: 15 (*Tomicus*). Syntypes ♂ ♀; Niederosterreich; not located. Synonymy: Reitter 1913a: 103, Balachowsky 1949a: 258.

References: (**hb**) Barbey 1901: 2, 26, 94; Bargmann 1898b, 1904; Formanek 1899; Lauffer 1931: 229. (**ds**) Kleine 1913b: 128; Lauffer 1931: 229; Pfeffer 1924b: 472; Reitter 1897b: 243; Schilsky 1909: 189. (**tx**) Balachowsky 1949a: 258; Barbey 1901: 2; Bargmann 1898b; Pfeffer 1932b: 25; Reitter 1897b: 243; Schedl 1934f: 1645; Wachtl 1895: 15.

***vorontzowi* (Jacobson)** 1895: 521 (*Tomicus*). Syntypes, sex?; Polonia Rossica; not located.

Figures: Grune 1979: 138, Pfeffer 1989a:pl. 10, Plaza & Gill 1982: 250, 256.

Distribution: Asia (Turkey), Europe (Austria/ Bulgaria/ Corsica/ Czechoslovakia/ France/ Germany/ Greece/ Hungary/ Italy/ Poland/ Romania/ Spain/ Switzerland/ W USSR/ Yugoslavia).

Hosts: *Abies bornmulleriana, A. cephalonica, A. pectinata, Pinus halepensis*.

References: (**ay**) Escherich 1923b: 486, 610; Fuchs 1911a; Nusslin 1911a: 2. (**bv**) Chararas 1966b; Chararas & Stephanopoulos 1975a; Grune 1979: 139; Harring 1978; Hierholzer 1950, 1951b; Inscoe 1982; Jacobson 1972; Klassen, Ridgway, & Inscoe 1982; Krol & Zabecki 1976; Prell 1931: 366. (**cn**) Capek et al. 1957: 277–284; Chararas 1978; Chorbadzhievo 1929; Eckstein 1926: 579; Escherich 1923b: 486, 610; Gabler 1955; Grandi 1951; Hierholzer 1949, 1951b, 1954a: 329; Kailidis 1964a: 41–54, 1966a: 81–85; Kailidis & Georgevits 1972; Kailidis & Markalas 1988; Kamp 1950; Kovacevic 1957: 67; Krol & Zabecki 1976; Kuteev 1965,1967; Maksimovic & Milanovic 1964, 1966; Maksymov 1950: 502; Martin & Cobos 1986; Merker 1954b: 209; Mokrzecki 1928: 273; Muller 1912: 186; Nosek 1951: 106, 1952b: 96; Nusslin 1913: 206, 269; Pierce, W. D. 1917: 79; Pjatnitskii 1932: 295–302; Regula 1955: 133; Rhumbler 1922: 311, 1927: 325; Schimitschek 1932a: 23, 1937b: 9, 1937c: 59, 1938c: 2112, 1939d: 2112, 1944: 220, 1949c: 15, 1950: 58, 1952c: 60, 1955a: 84, 86, 1955c: 91, 1956: 342; Schwerdtfeger 1944a: 182, 1957a: 188; Sedlaczek 1921: 335, 1933: 307; Slander 1948: 10; Thalenhorst 1950: 90; Tomic 1957: 207–210; Vorontzov 1968; Wachtl 1901: 381; Wardle 1929: 325; Weber, H. 1926: 579; Wohlmann 1936: 41; Zwolfer 1949: 400. (**ec**) Apfelbeck 1916b: 429–439; Balazy 1962; Balazy & Michalski 1962b, 1964b; Boucek 1958; Capek 1957; Chararas 1958b; Gauss 1954a: 423; Graham 1969: 880; Hierholzer 1950, 1954a: 329, 1954b: 385; Hirschmann & Wisniewski 1982, 1983; Karpinski 1932a: 95; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1980b, 1983; Kleine 1908c: 214; Kraemer 1949: 60, 1950b: 355; Krol & Zabecki 1976; Majewski & Wisniewski 1978a: 9; Merker 1954b: 209; Michalski & Ratajczak 1989; Nosek 1951: 106, 1952b: 96; Nuorteva 1957b: 52, 1959d: 193; Nusslin 1927: 324; Obertel 1957: 186; Pfeffer 1955b: 85, 1960: 345; Popovic 1931: 57; Ruhm 1956b: 4; Scheidter 1936: 236; Schimitschek 1950: 58, 1955: 84, 86; Schwerdtfeger 1944a: 182, 1957a: 188; Sedlaczek 1933: 307, 1935a: 163; Thompson, W. R. & Simmonds 1964: 25, 1965: 69; Tudor 1969: 32; Wisniewski 1979b, 1980. (**hb**) Apfelbeck 1916b, 1917; Bargmann 1898b, 1899a, 1899c, 1900, 1904, 1906; Braun 1941c; Chararas 1962c: 289; Charvat 1950; Chorbadzhievo 1929; Coudroy 1981a; Eckstein 1926: 579; Escherich 1923b: 486, 610; Formanek 1899; Gabler 1955; Grandi 1951; Gyorfi 1957; Hierholzer 1949; Kamp 1951c; Karpinski & Strawinski 1948: 157; Knotek 1899a: 19, 1899b: 1, 1901: 565; Kraemer 1950b: 355; Lengerken 1939: 36, 1954: 87; Maksymov 1950: 502, 508; Masutti 1964; Nunberg 1929c: 123; Nusslin 1898: 282, 1913: 206, 269, 1927: 324; Pfeffer 1941b: 16, 1989a: 73; Postner 1974: 448; Prell 1931: 366; Reh 1900a: 94; Rhumbler 1922: 311, 1927: 325; Scheidter 1936: 236; Schimitschek 1944: 220, 1955a: 84, 86; Schwerdtfeger 1944a: 182, 1957a: 188, 1981: 193; Sedlaczek 1921: 335, 1935a: 163; Spessivtsev 1913a: 78; Stark 1952: 423; Szujecki 1955: 242; Tschorbadjiev 1929: 173; Wachtl 1901: 381; Weber, H. 1926: 579. (**ds**) Barthe 1896; Borchert 1951; Buresh & Lazarov 1956; Capek et al. 1957; Charvat 1950; Chorbadzhievo 1929; Csiki 1914; Dzhambazishvili 1961: 751–757, 1962; Endrodi 1957a: 307, 1958b; Escherich 1923b: 486, 610, 1932b; Grune 1979: 139; Hennig 1954: 257; Heyden, Reitter, & Weise 1906: 712; Horion 1951; Jacentkovsky 1939: 77; Jacobson 1895: 521; Jazentkovsky 1912: 291; Kailidis 1964a, 1966a, 1966b: 55, 1985; Kailidis & Georgevits 1972; Kailidis & Markalas 1988; Kamp 1951c; Karpinski 1925: 216, 1926: 83, 1931: 20, 1932a: 95, 1948b: 231; Karpinski & Strawinski 1948: 157; Keler 1925b: 275; Kleine 1912a: 263, 268, 1913a: 35, 1913b: 128; Knotek 1899b: 1, 1901: 565; Kono 1951: 159; Kovacevic 1957: 67; Kozikowsky 1921: 181; Kraemer 1948: 133, 1949: 49–51, 1950: 356; Kudela 1946a: 339; Kurir 1947c: 18; Langhoffer 1915c: 158; Lucht 1987: 279; Michalski 1957: 166; Miller 1958: 33–143, 145–229; Mokrzecki 1928: 273; Negru 1966b: 403; Novak, P. 1964; Nunberg 1928b: 88, 115, 1954: 79; Nusslin 1898: 282; Pfeffer 1924b: 472, 1935: 158, 1947d: 129, 1950b: 75, 1960: 345, 1989a: 73; Pierce, W. D. 1917: 79; Pittioni 1943: 175; Plaza & Gil 1982: 250; Postner 1974: 448; Reitter 1897b: 244, 1916:

302; Roubal 1941: 274; Ruskov 1928c: 62; Sainte-Claire 1914: 474; Sainte-Claire & Mequignon 1938: 449; Schaufuss 1915: 1246; Schedl 1961b: 184, 1967c: 72, 1980a: 26, 1981b: 88; Schilsky 1909: 188; Schimitschek 1927: 159, 1938c: 2112; Schwerdtfeger 1981: 193; Stark 1952: 433; Szujecki 1955: 242; Tredl 1907: 16; Tschorbadjiev 1929: 173; Wanka 1920: 202–203; Wichmann 1927a: 76; Zivojinovic 1950: 299–310. (**tx**) Balachowsky 1949a: 259; Bargmann 1897, 1898b, 1899: 36; Charvat 1950; Eggers 1923: 218; Endrodi 1957a, 1957b; Escherich 1923b: 486, 610; Fleischer 1927; Formanek 1907: 44; Fuchs 1911a; Gabler 1955; Grune 1979: 138–139; Hopping 1963b: 63; Jacobson 1895: 521; Karpinski & Strawinski 1948: 157; Koch 1932: 100; Lucht 1987: 279; Michalski 1969b: 570; Negru 1966b: 403; Nunberg 1929c: 123, 1948: 1–30, 1954: 79; Nusslin 1911a: 2; Pfeffer 1932b: 251, 1941b: 16, 1955a: 236, 1989a:pl. 10; Plaza & Gil 1982: 250, 256; Portevin 1935: 336; Quaschik 1953: 35; Reitter 1897b: 244, 1913a: 103, 1916: 302; Rhumbler 1922: 311, 1927: 325; Schedl 1934f: 1645, 1952f: 87, 1980a: 26, 1981b: 88; Schimitschek 1937c: 59, 1955c: 91; Spessivtsev 1913a: 78, 1931: 76; Stark 1952: 423; Weber, L. 1912: 30. (**ms**) Chararas 1971a: 853; Eggers 1910a; Escherich 1932b; Reh 1900a: 94; Sedlaczek 1913: 455; Vorontzov 1968; Weber, L. 1912: 30.

Genus *Orthotomicus* Ferrari

ORTHOTOMICUS FERRARI 1867a: 44. Type-species: *Bostrichus laricis* Fabricius, subsequent designation by Hopkins 1914: 126.

Neotomicus Fuchs 1911: 33. Type-species: *Bostrichus laricis* Fabricius, subsequent designation by Hopkins 1914: 125. Synonymy: Swaine 1918a: 121.

References: (**tx**) Balachowsky 1949a: 268; Endrodi 1957: 419; Fuchs 1911: 33; Spessivtsev 1931: 90; Swaine 1918a: 121.

Keys: Balachowsky 1949a: 268, Reitter 1913a: 108, Stark 1952: 407 for Europe, Yin, Huang, & Li 1984: 138 for China, Nobuchi 1974: 42 for Japan.

Notes: (1) Ferrari 1867a: 44 (Original spelling of *Onthotomicus*, lapsus calami, corrected in Ferrari 1869: 256).

References: (**ay**) Lanier 1965: 175; Nobuchi 1969a: 65; Nunberg 1926: 51–59. (**hb**) Wood, S. L. 1986a: 68. (**ds**) Tragardh 1930: 468–480; Trappen 1935: 143; Wood, S. L. 1986a: 68; Yin, Huang, & Li 1984: 136. (**tx**) Balachowsky 1949a: 268; Browne 1961c: 81–82; Chamberlin 1939: 435–439; Dodge 1938: 19; Eggers 1931c: 186, 1932: 33; Endrodi 1957: 419; Ferrari 1867a: 44, 1869: 256; Hopping 1963b: 61; Karaman 1972: 156–158; Kostin 1973: 269; Krivolutskaya 1956: 183; Nobuchi 1974: 42; Pfeffer 1989a: 77; Prell 1929: 90–91; Schedl 1958k: 145; Wood, S. L. 1951b: 32, 1982b: 662–664, 1986a: 68; Yin, Huang, & Li 1984: 136.

***angulatus* (Eichhoff)** 1875: 200 (*Tomicus*). Syntypes, sex?: Japan; IRSNB, Brussels.

Figures: Nobuchi 1966d:pl. 6, 1974:pls. 1–2.

Distribution: Asia (Cambodia/ Fujian, Yunnan in China/ Japan/ Korea/ Ryukyu Islands/ Taiwan).

Hosts: *Tsuga sieboldii*, *Pinus densiflora*, *P. luchuensis*, *P. parviflora*, *P. thungergiana*, *Cryptomeria japonica*, *Chamaecyparis obtusa*.

References: (**ay**) Sasakawa & Yoshiyasu 1983. (**cn**) Anonymous 1980g; Godha et al. 1964; Murayama 1954a: 8. (**ec**) Choo, Kaya, & Shea 1989; Ho, Kaya, & Shea 1989. (**ds**) Anonymous 1980g; Bain 1974: 16; Blandford 1894c; Browne 1984a: 151; Choo 1983: 99; Choo & Woo 1985: 165; Choo, Woo, & Nobuchi 1988a: 134; Choo, Woo, & Park 1983: 175; Hagedorn 1910d: 48; Kleine 1913b: 127, 1934a: 150; Krivolutskaya 1983; Murayama 1934d: 505, 1948: 2, 1949a: 13, 1950b: 1294, 1951c: 4, 1954a: 8, 1954b: 170, 1955: 99, 102; Nobuchi 1966d: 37, 1967: 24, 1974: 43; Nohira & Ogawa 1986; Pfeffer 1935: 159. (**tx**) Choo 1983: 88; Eggers 1941b: 222, 1944: 143; Eichhoff 1875: 200; Hagedorn 1910a: 103; Murayama 1934: 505–512, 1950b: 1294, 1954b: 170, 1955: 99, 102; Nobuchi 1966d: 37, pl. 6, 1969b: 37, 1974: 43–44, pl. 1, 2; Schedl 1934f: 1644; Sokanovskii 1954: 19, 1959b: 93, 94.

***caelatus* (Eichhoff)** 1868a: 402 (*Tomicus*). Syntypes, sex?; Pennsylvania, Carolina [USA]; IRSNB, Brussels.

Figures: Bright 1976d: 146, 149, Dillon & Dillon 1961: 801, 813, Evans 1983: 34, Kusch 1967: 9.

Distribution: Africa (introduced into South Africa), North America (Alaska/ all provinces in Canada/ Alabama, Arkansas, California, Colorado, Connecticut, District of Columbia, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oregon, Pennsylvania, South Dakota, Texas, Utah, Vermont, Virginia, West Virginia, Wisconsin, Wyoming in USA).

Hosts: *Pinus* spp., *Picea* spp., *Larix* spp.

References: (**ay**) Hopkins 1894g; Thomas, J. B. 1957: 4, 1967. (**bv**) Atkinson, Foltz, & Connor 1988; Baker, Hostetler, & Furniss 1977: 293; Clemens 1916; Furniss, M. M. & Livingston 1979: 371; Inscoe 1982; Phillips, Atkinson, & Foltz 1989: 385–398; Provancher 1877: 567; Roling & Kearby 1975b; Turnbow & Franklin 1980. (**cn**) Anonymous 1965i, 1968g, 1968k, 1969h; Becker 1959b, 1962, 1964a, 1964c; Becker, Abbott, & Rick 1956: 664; Beckwith 1972; Bess 1944: 14–16; Blackman 1950; Brown, R. M. & Winter 1981; Browne 1968b: 491; Chenier & Philogene 1989a; Clemens 1916; Craighead & Swaine 1924: 1–27; Doane et al. 1936; Felt 1901: 488–490, 1906: 354, 1926: 267, 248; Felt & Bromley 1942: 169–171; Furniss,

M. M. 1981; Griffin 1966: 1047–1048; Hetrick 1942: 181–183; Hewitt 1914: 501–518; Hopkins 1899c: 341, 423, 446, 1902c: 12; Keen 1952c: 154; Kondo & Taylor 1985; Lindgren 1980a: 66; Lindquist, O. H. & Syme 1981: 78; Martin, J. L. 1964, 1965: 40–43; Morley 1939: 243–248; Packard 1890: 706; Pierson 1927: 80; Rodary 1959: 852; Ruppel 1967: 71; Schenk et al. 1957a: 840; Schooley & Pardy 1981; Smith, J. B. 1900: 363; Stein, J. D. & Kennedy 1972: 99; Swaine 1913: 89, 1918a: 121; Syme & Nystrom 1988: 75; Thomas, J. B. 1965a; Verrall 1941: 549–558; Wong, H. R. & Melvin 1973. (**ec**) Ashmead 1894; Ashraf & Berryman 1969: 13; Bedard 1933a; Blackman & Stage 1918; Burks 1979: 824; Bushing 1965: 462; DeLeon 1934a, 1934b; Deyrup & Gara 1978: 275; Felt 1906: 354; Frederick, Sloan, & Skowron 1976; Furniss, R. L. & Carolin 1977: 398; Galford 1969b; Griffin, H. D. 1966, 1968; Grissell 1979: 765; Grunwald 1986; Heqvist 1959: 181; Hopkins 1908a; Houser 1931: 657; Lindquist, E. E. 1969c; Lindquist, E. E. & Hunter 1965; Marsh 1979: 158; Matthews 1970; Morley 1939: 244; Powell, J. M., Wong, & Melvin 1972: 15; Reid 1957b: 6; Richerson, J. W. & Borden 1972a; Rodary 1959: 852; Schenk et al. 1957a: 840; Smerlis & Finnegan 1981; Thomas, J. B. 1955: 341; Thompson, W. R. 1943: 58; Thompson, W. R. & Simmonds 1964: 23, 1965: 113; Tomalak, Welch, & Galloway 1989b: 1; Werner & Holsten 1984; Woodring 1966c: 125. (**hb**) Atkinson, Foltz, & Connor 1988; Baker, W. L. 1972: 263; Beal & Massey 1945: 146–147; Blackman 1919a, 1922b: 115–118, 1950; Blackman & Stage 1918; Blandford 1894b; Bright 1976d: 149; Bright & Stark 1973: 82; Browne 1968b: 491; Chamberlin 1939: 437, 1958: 182–183; Chittenden 1890, 1897b, 1899a; Clemens 1916; Deyrup & Atkinson 1987a: 65; Dillon & Dillon 1961: 814; Doane et al. 1936; Drake 1921; Drooz 1985: 358; Felt 1906: 354, 1926: 248, 267; Furniss, R. L. & Carolin 1977: 398; Galford 1969b; Hopkins 1894g, 1898b: 21, 1899c: 341, 423, 446; Keen 1952c: 154; Lindgren 1980a: 66; Morley 1939: 244; Ostmark 1968; Packard 1890: 706; Pierce 1907: 291; Pierson 1927: 80; Schwarz 1888a: 80, 1894a: 16; Stein, J. D. & Kennedy 1972: 99; Swaine 1911b: 81, 1912b: 142, 1918a: 121; Wolcott & Montgomery 1933: 167; Wong, H. R. & Melvin 1973; Wood, S. L. 1982b: 663. (**ds**) Amman 1969a; Anonymous 1926c: 519, 1938g, 1969h; Ashworth & Brophy 1972: 2984; Ashworth et al. 1981; Bain 1974: 16; Baker, Hostetler, & Furniss 1977: 293; Beal & Massey 1945: 146–147; Beaulne 1956; Beckwith 1972a; Bedard 1938a; Blackman 1922b: 115–118, 1950; Blandford 1894b; Blatchley & Leng 1916: 640; Bright 1971a: 126, 1976d: 149; Bright & Stark 1973; Britton 1920a; Brown, A. W. A. 1934; Brown, R. M. & Winter 1981; Brown, W. J. 1930: 246; Browne 1968b: 491; Chamberlin 1917: 328, 1925, 1939: 437, 1958: 182–183; Chittenden 1890, 1897b, 1899a; DeLeon 1934: 297–317; Deyrup 1981b: 6; Deyrup & Atkinson 1987: 65; Dodge 1938: 15, 51; Drake 1921: 201–205; Drooz 1985: 358; Eidmann 1935; Elias 1982a, 1982b, 1983, 1985: 39; Evans, D. 1983: 34; Evans, D., Lowe, & Hunt 1978; Fall 1906: 202; Felt 1926: 248, 267, 1930a: 248; Fitch 1858: 716; Furniss & Livingston 1979: 371; Furniss, R. L. & Carolin 1977: 398; Gast et al. 1989: 385; Gautreau & Melvin 1974: 14; Gemminger & Harold 1872: 2685; Hagedorn 1910d: 50; Hamilton 1895: 346, 378; Hatch 1924; Henshaw 1885: 148; Hoffmann 1956: 91, 1966: 91; Hopkins 1893a: 139, 1893b: 212, 1894g: 280, 1899c: 258, 342, 446, 1902c: 12; Hopping, G. 1950a: 3; Houghton 1905; Hubbard & Schwarz 1878a: 666; Keen 1929: 39, 1952c: 154; Kirk 1969, 1970; Kleine 1913b: 127, 1914b: 385, 409, 1934a: 150, 152; Kusch 1967; Lanier et al. 1972: 1919; Leng 1920: 341; Leonard 1928: 520; Lindquist, O. H. & Syme 1981: 78; Miller, R. F. & Morgan 1982; Miller, R. F., Morgan, & Hicock 1985: 500; Morgan, Anne, Morgan, & Elias 1985: 1821; Morgan, A. V. & Morgan 1980: 1110; Ostmark 1968; Patterson & Hatch 1945: 153; Proctor 1946: 208; Provancher 1877: 567; Ruppel 1967: 71; Schedl 1978e: 38; Schwarz 1878d: 468, 1886: 45, 1888a: 80; Schwert et al. 1985; Slosson 1906: 325; Smith, J. B. 1900: 363, 1910: 402; Still, Tidsbury, & Melvin 1974a, 1974b; Susut & Melvin 1974; Swaine 1909: 120, 1911b: 81, 1913: 89; Syme & Nystrom 1988: 75; Thomas, J. B. 1955: 341; Turnbown & Franklin 1980; Walker 1912: 60; Werner & Holsten 1984; Wickham 1896a: 309, 1896c: 168; Winter, T. G. 1983: 16; Wolcott & Montgomery 1933: 167; Wood, S. L. 1972a: 418, 1982b: 663. (**tx**) Beal & Massey 1945: 146–147; Beckwith 1972, 1972a; Benoit 1985: 186; Blackman 1919: 90, 1922b: 115–118; Blandford 1894b: 261; Blatchley & Leng 1916: 640; Bright 1976d: 146, 149, 203, 212; Chamberlin 1939: 437, 1958: 182–183; Clemens 1916; Dillon & Dillon 1961: 801, 813–814; Dodge 1938: 15, 51; Eichhoff 1868a: 402, 1878b: 274, 370; Evans, D. 1983: 34; Hagedorn 1910a: 104; Hopping, G. 1963b: 67; Keen 1929: 39; Kusch 1967: 9; Lanier 1987a: 107; LeConte 1868: 160, 177, 1876: 359–360, 1878a: 468; Lindquist, O. H. & Syme 1981: 78; Pardy 1974, 1977, 1983; Schedl 1957b: 151; Schwarz 1878: 468, 666, 1886: 41, 45, 1888: 47, 80, 1894: 16, 27; Swaine 1909: 120, 1913: 87–92, 1916b: 185, 1918a: 121–122; Syme & Nystrom 1988: 75; Thomas, J. B. 1957: 4, 1967; Titus, Meikle, & Harrison 1985: 97; Wood, S. L. 1972a: 418, 1973: 179, 1982b: 663; Zimmermann 1868: 146. (**ms**) Chenier & Philogene 1989a; Eckstein 1900c; Swaine 1912b: 142.

decretus Eichhoff 1868a: 402 (*Tomicus*). Lectotype ♀: New Orleans, Louisiana [USA];

IRSNB, Brussels, designated by Wood 1982b: 663. Synonymy: LeConte 1868: 177.
References: (**ec**) Hopkins 1908a: 18. (**ds**) Hagedorn 1910d: 53; Kleine 1913b: 127; Leng 1920: 341; Swaine 1909: 122. (**tx**) Eichhoff 1868a: 402, 1878b: 272; Hagedorn 1910a: 104; LeConte 1868: 177; Swaine 1909: 122, 1918a: 122.

vicinus LeConte 1874a: 72 (*Xyleborus*). Holotype ♀; British Columbia [Canada]; MCZ, Cambridge. Synonymy: Wood 1973c: 179.
References: (**ay**) Robertson 1961. (**cn**) Keen 1952c: 154; Schuder 1969: 76; Smith, G. J. & Melvin 1974b; Swaine 1918a: 121–122. (**ec**) Reid 1955: 312. (**hb**) Baker, W. L. 1972: 263; Chamberlin 1939: 438, 1958: 183; Keen 1952c: 154; Kinghorn 1960b: 50; Reid 1955: 312–319; Swaine 1918a: 121–122. (**ds**) Chamberlin 1925, 1939: 438, 1958: 183; Dodge 1938; Evans, D. 1983: 34; Evans, D., Lowe, & Hunt 1978; Gautreau & Melvin 1974: 14; Henshaw 1882: 269; Hopping 1922; Keen 1929: 39, 1952c: 154; Kleine 1934a; Leng 1920: 341; Patterson & Hatch 1945: 153; Schuder 1969: 76; Smith, G. J. & Melvin 1974b; Smith, G. S. 1930; Still, Tidsbury, & Melvin 1974a: 14; Susut & Melvin 1974; Swaine 1909: 120, 1919b: 9. (**tx**) Chamberlin 1939: 438, 1958: 183; Dodge 1938: 51–52; Evans, D. 1983: 34; Fall 1926: 208; Keen 1929: 39; LeConte 1874a: 72, 1876: 360; Swaine 1909: 120, 1918a: 121–122; 1919b: 9; Wood, S. L. 1973c: 179.

punctipennis LeConte 1878b: 624 (*Xyleborus*). Holotype ♀; Marquette, Michigan [USA]; MCZ, Cambridge. Synonymy: Wood 1973c: 179.
References: (**cn**) Easterling 1934: 129–146; Swaine 1918a: 121–122. (**ec**) Bushing 1965: 462. (**hb**) Chamberlin 1939: 438; Swaine 1918a: 121–122. (**ds**) Anonymous 1926c: 519; Blatchley & Leng 1916: 636; Chamberlin 1939: 438; Easterling 1934: 129–146; Henshaw 1882: 269, 1885: 148; Hubbard & Schwarz 1878a: 666, 1878b: 624; Leng 1920: 341; Leonard 1928: 520; Schwarz 1886: 42; Swaine 1909: 133. (**tx**) Blatchley & Leng 1916: 636; Chamberlin 1939: 438; Eichhoff 1896: 609; LeConte 1878b: 624, 666; Schwarz 1886: 42; Swaine 1909: 133, 1918a: 121, 121; Wood, S. L. 1973c: 179.

***golovjankoi* Pjatnitskii** 1930b: 179. Syntypes, sex?; Far East: Siberia; not located.
Figures: Nakane et al. 1963:pl. 192, Nobuchi 1974:pls. 1–3, Yin, Huang, & Li 1984: 143.
Distribution: Asia (Heilongjiang, Jilin in China/ Japan/ Sakhalin Island, Siberia in E USSR).
Hosts: *Picea excelsa, P. glehnii, P. jezoensis, P. koraiensis, P. microsperma, Pinus densiflora, P. koraiensis, P. thunbergiana*.
Notes: (3) Pjatnitskii 1930: 182 (named aberration *quadridens*, no status), Sokanovskii 1954: 19 (incorrectly treated this species as a synonym of *angulatus* Eichhoff).
References: (**cn**) Anonymous 1980g; Florov 1949: 124; Inouye 1949a: 18, 1949b, 1955; Inouye & Yamaguchi 1955a: 235; Kurenzov 1935c: 189. (**ec**) Inouye & Yamaguchi 1955a: 235; Inouye et al. 1955: 74; Kamijo 1981; Kurenzov 1934a: 53; Nishiguchi 1959: 271. (**hb**) Inouye et al. 1955: 74; Kurenzov 1935a: 43, 1948b: 100, 1950d: 217; Stark 1952: 418; Wang 1982. (**ds**) Anonymous 1980g; Inouye 1949b; Kleine 1934a: 152; Kono 1938b: 65, 70; Kono & Tamanuki 1939: 95; Kurenzov 1934a: 53, 1935a: 43, 1935c: 189, 1936a: 111, 1936b: 350, 1938a: 59, 1950: 217; Nakane et al. 1963: 383; Nobuchi 1974: 44; Pfeffer 1935: 159; Sawamoto 1940b: 141, 146; Stark 1952: 418; Yanovskii & Tegshzhargal 1985: 415; Yin, Huang, & Li 1984: 142. (**tx**) Kurenzov 1941a: 211–212, 1948b: 100, 1950d: 217, 1959: 217; Nakane et al. 1963: 383, pl. 192; Nobuchi 1974: 44, pl. 1–3; Pjatnitskii 1930b: 179–182, 1932: 173–179; Sawamoto 1940b: 141–148; Schedl 1934f: 1645, 1941a: 42, 1953e: 22; Sokanovskii 1954: 19, 1959b: 93, 94; Stark 1952: 418.

***kuniyoshii* Nobuchi** 1959c: 23 (*Ips*). Syntypes, sex?; Kitanakagushiku, Ryuku Islands, Japan; Nobuchi Collection, Ibaraki.
Figures: Nobuchi 1974:pls. 1–2.
Distribution: Asia (Okinawa in Ryukyu Islands).
Hosts: *Pinus luchuensis*.
References: (**ds**) Nobuchi 1974: 45. (**tx**) Nobuchi 1959c: 23, 1974: 45, pl. 1, 2.

***laricis* (Fabricius)** 1792: 365 (*Bostrichus*). Syntypes 8, sex?; Germaniae; UZMC, Copenhagen.
Figures: Balachowsky 1949a: 270, Barbey 1925: 239, Bevan 1987: 114, Grune 1979: 144, Joly 1976b: 177, 246, Nobuchi 1974:pls. 1–3, Pfeffer 1989:pl. 22, Plaza & Gil 1982: 241, 243.
Distribution: Africa (Algeria/ Morocco), Asia (Hebei, Shanxi in China/ Japan/ Korea/ Thailand/ Turkey/ Kamchatka, Sakhalin Island, Siberia in E USSR), Europe (Austria/ Belgium/ Bulgaria/ Corsica/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Hungary/ Ireland/ Italy/ Luxemburg/ Netherlands/ Norway/ Poland/ Portugal/ Romania/ Sardinia/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia), South America (introduced: Chile).
Hosts: *Pinus* spp., *Picea* spp., *Larix europea*.
Notes: (3) Sturm 1826: 102 (named *denticulatus*, nomen nudum, no status, synonymy in Sturm 1843: 230).
References: (**ay**) Bugnion 1887b; Chararas 1977b; Escherich 1923b: 487, 542; Feytaud 1950a; Fuchs 1911a; Leisewitz 1906: 91; Nunberg 1926: 51; Scherb 1971; Sedlaczek 1902b: 244; Wichmann 1912a: 10. (**bv**) Bakke 1971b; Chararas 1973a, 1976b, 1977b; Grune 1979: 145; Kevdina 1897: 108; Luitjes 1976; Meixner 1937: 217; Naumann-

Etienne 1978a; Nuorteva 1956c: 23; Prell 1930c: 635, 1931: 364; Rozhkov 1970: 155; Wichmann 1912a: 10. (**cn**) Anonymous 1979p; Barbey 1906a, 1925: 239; Bieloussov 1917: 334–337; Blandford 1892a; Borodajewskii 1930: 805–811; Browne 1968b: 491; Chararas 1961b: 69, 1978; Chorbadzhievo 1929; Eckstein 1926: 574, 579; Egorov 1958: 1492; Eidmann & Klingstrom 1976: 240; Escherich 1917: 97–115, 1923b: 487, 542; Esterberg 1959; Feytaud 1946, 1950a, 1950b; Fisher 1937c; Fleischer 1877a; Funke 1870; Gabler 1955; Georgescu et al. 1957: 357, 449, 454; Gois 1944; Grandi 1951; Gusev 1928: 144; Gyorfi 1946: 193, 195, 1959; Hanson, H. S. 1937, 1940a; Hartig 1861: 324, 1877: 190; Hess 1898: 352, 1907: 251; Hess & Beck 1914: 280, 1927: 336; Jaensch 1938: 48; Joly 1976; Judeich 1886: 67; Kauschinger 1893: 144; Keller 1903b: 48; Kholodkovskii 1912: 314; Kirchner 1860: 91; Koch 1913: 93; Kollar 1840: 362; Komarek et al. 1931: 1–256; Koppen 1882: 236; Kovacevic 1924: 21–22; Kurenzov 1935c: 189; Laidlaw 1947: 53; Lekander, M. 1951: 108; Lichtenstein & Picard 1919: 62–64; Mamaev 1929: 134–142; Marcu 1926c: 67; Marie 1924: 328–330; Mokrzecki 1933: 284; Mostovsky 1923: 287–288; Muller 1912: 186; Nosek 1951: 107, 1952b: 96; Nusslin 1913: 269; Packard 1890: 714; Pfeffer 1949b: 150, 1950c: 1; Polozhentsev 1926: 1–5; Pomocnicze 1876: 157; Rhumbler 1922: 311, 1927: 325; Saalas 1949: 344, 395; Sajevyc 1928: 330; Schimitschek 1937c: 59, 1938b: 116, 1947g: 191, 1955a: 66, 1955c: 92, 1961a: 154; Schmidt 1881: 34; Schuster 1918: 102; Schwerdtfeger 1944a: 176, 1957a: 183; Shiraki 1952; Titova 1966; Tragardh 1917: 11, 1921e: 64; Wachtl 1901: 379, 381; Weber, H. 1926: 574; Wichmann 1927b: 376; Wilke 1931: 641; Wolff 1920: 233; Wolff & Krausse 1922: 104, 107; Zarco 1946a: 251; Zhang et al. 1958: 29. (**ec**) Apfelbeck 1916b; Balazy & Michalski 1960, 1964b; Barbey 1906a, 1927; Belanowskii 1930; Brammanis 1938, 1940; Chararas 1959a; Cooreman 1963: 46; Elliot & Morley 1907; Fleischer 1877a; Francke-Grosmann 1931; Gaulle 1906: 237; Grossmann 1931a; Gyorfi 1941b, 1943: 84; Heqvist 1963: 155, 1967: 70; Hirschmann 1960, 1971a, 1971b: 39; Hirschmann & Wisniewski 1982, 1983; Hirschmann & Zirngiebl-Nicol 1961; Jahn & Sinreich 1960b; Jakaitis & Valenta 1976: 12; Jamnicky 1957c; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1980b, 1983; Kleine 1908c: 214, 1909a: 48, 76, 1944: 69; Korenchenko 1980a, 1987b; Kostenko 1929; Kostin 1964: 125; Krausse 1917: 123; Lazarevskaya 1962; Luitjes 1976; Lundberg 1984; Meyer 1918: 178; Michalski & Ratajczak 1989; Naumann-Etienne 1978a; Nosek 1951: 107, 1952b: 96; Nunberg 1930: 201; Nuorteva 1956a: 16, 1957b: 68, 1971: 70; Nusslin 1927: 324; Palmen 1944: 60, 1946: 195; Perris 1852: 497, 1856a: 184; Pfeffer 1923a: 332, 1932a: 11, 1949b: 147, 1950c: 1, 1957a: 196; Poinar 1972, 1975: 162; Purrini & Weiser 1985: 66; Ratzeburg 1869a: 59, 94; Rondani 1873: 140, 1876: 55; Roubal 1934a: 87; Rudnev 1926: 32–69; Ruhm 1956b: 4, 1960: 203; Saalas 1917a: 18, 1930: 118, 1949: 344, 395; Scheucher 1959: 263; Schimitschek 1930a: 329, 340, 1955a: 66; Schuster 1918: 102; Schwerdtfeger 1944a: 176, 1957a: 183; Sedlaczek 1935a: 157, 163; Sitowski 1930: 2; Stora 1938: 20; Tenkacova & Mituch 1987; Thompson, W. R. 1943: 59; Thompson, W. R. & Simmonds 1965: 27; Titova 1966; Vitzthum 1923: 165, 1926: 462; Westerboer 1963: 377; Wiackowski 1957a: 71; Wichmann 1958: 230; Wilke 1931: 641; Wisniewski 1979c: 5, 1980; Woodring 1966b: 106; Zmur 1985b. (**hb**) Altum 1881c: 300, 1883c, 1884; Apfelbeck 1916b; Bach 1864; Barbey 1901: 24, 91, 1925: 239; Bargmann 1906; Beaver & Browne 1975: 292; Beffa 1949, 1961; Binzer 1881a; Boas 1923: 354; Borodajewsky 1929b; Browne 1968b: 491; Budge 1949; Budkov 1897; Bugnion 1887b; Bukowsky 1930; Chararas 1961b: 69, 1962c: 365, 1977b; Charvat 1950; Chittenden 1890; Chorbadzhievo 1929; Dombrowsky 1887, 1892; Drugescu 1980; Eckstein 1889, 1897, 1926: 574, 579; Eichhoff 1881a: 50, 239; Escherich 1923b: 487, 542; Everts 1900, 1903: 764; Feisthamel 1835; Feytaud 1946, 1950a; Fleischer 1877a; Fuchs 1904a, 1907: 48; Furst 1888: 112; Gabler 1955; Girard 1873; Gois 1944; Gornostaev 1916: 312; Grandi 1951; Gyorfi 1957; Hagedorn 1903a; Hartig 1861: 324, 1877: 190; Henschel 1876a: 44, 238, 1880b: 257, 1885b, 1894, 1895a: 184; Hess 1898: 352; Hess & Beck 1914: 280, 1927: 336; Holmgren 1867: 113, 134; Husson & Stauder 1954: 357; Jaensch 1938: 48; Joly 1976, 1976b; Judeich 1886: 67; Karpinski 1933b: 38; Karpinski & Strawinski 1948: 157; Karsch 1883: 141; Kauschinger 1883: 105, 1893: 144; Kholodkovskii 1889: 267, 1912: 314; Kleiber 1930: 183; Kleine 1908a: 98; Knotek 1894a: 558; Kollar 1840: 362, 1857: 188; Kostin 1960: 136; Krivolutskaya 1956: 837, 1960, 1973: 142; Kurenzov 1935a: 44, 1948b: 105, 1950d: 235; Kurenzov & Kononov 1961: 601; Lengerken 1939: 35, 1954: 93; Louzil 1961: 45; Luitjes 1976; Lunardoni & Leonardi 1889: 470; Michalski 1959a: 291; Milani 1894: 142; Munro 1926: 70; Naumann-Etienne 1978a; Nordlinger 1856: 18; Nuorteva 1956c: 23; Nusslin 1898: 282, 1906b: 18, 1913: 269, 1927: 324; Opanasenko & Kononenko 1966; Packard 1890: 714; Perris 1852: 497, 1856a: 184; Petrenko 1966; Pfeffer 1941b: 6, 1941c: 5; Postner 1974: 450; Prell 1930c: 635, 1931: 364; Ratzeburg 1837: 131, 1839: 158, 188; Rhumbler 1922: 311, 1927: 325; Rimski-Korsakov et al. 1949: 288; Rozhkov 1970: 155; Rupertsberger 1879: 231, 1880: 231; Saalas 1913a: 68, 90, 1949: 344, 395; Schedl 1981b: 87; Schimitschek 1930a: 329, 340, 1955a: 66; Schmidt 1881: 34; Schwerdtfeger 1944a: 176, 1957a: 183, 1981: 189; Sedlaczek

1935a: 157, 163; Spessivtsev 1913a: 84; Stark 1952: 417; Taschenberg 1880: 220, 228; Tragardh 1914: 100, 1921e: 64; Tschorbadjiev 1929: 176; Wachtl 1876a: 455, 1901: 379, 381; Weber, H. 1926: 574; Weidenbach 1845: 117; Wichmann 1927b: 376; Wolff 1920: 233; Wolff & Krausse 1922: 104, 107. (**ds**) Acloque 1896; Allen, A. 1951b; Ammann & Knabl 1913; Andersch 1851; Anonymous 1979p; Atkinson 1921; Audras & Schaefer 1957; Balachowsky 1944b; Balazy & Michalski 1960; Barthe 1896; Bau 1888; Beaver & Browne 1975: 292; Beck 1817; Bedel 1888b: 401, 417; Beffa 1949; Bejer-Petersen & Jorum 1977: 32; Belousov 1916, 1917: 335; Bielz 1887; Bielz & Hampe 1853; Blanchere & Robert 1889; Boas 1923: 354; Borchert 1951; Brakman 1966b: 207; Brancsik 1871, 1906; Browne 1968b: 491, 1980d: 493; Budkov 1897; Bukowsky 1930; Buresh & Lazarov 1956; Butovitsch 1963; Butovitsch & Heqvist 1947; Calwer 1884, 1893; Cecconi 1897; Champion 1927: 173–174; Chapuis & Candeze 1853; Chararas 1961c: 95; Charvat 1950; Chittenden 1890; Cho 1957; Choo 1983: 89; Choo, Woo, & Park 1983: 176; Chorbadzhievo 1929; Chrystal 1937; Crotch 1863; Debatisse 1945; Dejean 1821, 1825, 1837; Donisthorpe 1931: 122, 1933b; Duftschmidt 1825; Eder 1934; Eggers 1904; Endrodi 1958b, 1986: 217; Ericson & Sandin 1893; Ermisch 1953; Escalera 1919; Escherich 1923b: 487, 542, 1932b; Esterberg 1928, 1959; Everts 1900, 1922: 645, 1925; Eyquem 1891; Fauvel 1885; Favre 1890; Fleischer et al. 1923; Forster 1849: 439; Fowler 1891; Frey 1937; Fricken 1889: 345; Friederichs 1919; Fuchs 1904a, 1905a, 1907: 48; Fuss 1853; Gaubil 1849: 126; Gobang 1855: 745; Gornostaev 1917: 308–315; Gouillard 1962: 113; Gozis 1875: 80; Gredler 1866: 374; Greyerz 1851; Grill 1895: 310; Grune 1979: 145; Gyllenhal 1827: 620; Gyorfi 1941b; Hagedorn 1903a, 1910d: 55; Hallett 1923a, 1923c; Hansen, V. 1939, 1956, 1964: 465; Heinemann 1908a; Hellen 1947; Hennig 1954: 261; Henschel 1895a: 184; Hess 1907: 251; Heyden 1876: 300, 1879: 140; Heyden, Reitter, & Weise 1883: 182, 1891: 673, 1906: 712; Hickin 1963; Hlawa 1870; Hoffmann 1936: 41; Holmgren 1867: 113, 134; Horion 1951; Ihssen 1939: 336; Jamnicky 1960a; Jazentkovsky 1912: 291; Joly 1976; Kadyrov 1988: 43, 1989; Kalshoven 1958b: 173; Kaltenbach 1874: 685; Karpinski 1925: 217, 1926: 83, 1931: 36, 1933b: 38; Karpinski & Strawinski 1948: 157; Keler 1925b: 274; Keran 1949: 30; Kersten 1933: 76; Kestercanek 1881a: 12; Kiefer et al. 1942: 529; Klefbeck & Sjoberg 1960: 232; Kleine 1912a: 262, 264, 268, 1913a: 35, 1913b: 128, 1914b: 248–249, 257, 1934a: 151; Kloft & Hinks 1945: 218; Knotek 1892a: 37, 1894a: 558; Ko 1969: 279; Koltze 1901: 153; Kono 1938: 65; Koppen 1882: 236; Koschitsky 1900: 83; Kostenko 1929; Kotula 1873b: 80; Kraatz 1869: 59; Krivolutskaya 1956: 837, 1960, 1965: 241, 1973: 142, 1983; Kurenzov 1935a: 44, 1935c: 189, 1936b: 350, 1938a: 59, 1951b: 20; Kurenzov & Kononov 1961: 595, 601; Kurir 1947: 7; Lacordaire 1866: 383; Langhoffer 1915c: 158; Leclercq 1971; Lentz 1857: 139; Liegel 1886: 43; Lindberg & Saris 1952: 59; Lindemann 1884b: 264; Lokaj 1868: 64; Lomnicki 1886a: 243; Loos 1913: 411; Lucht 1987: 279; Lunardoni & Leonardi 1889: 470; Lundberg 1979: 31; Lundblad 1950c: 117; Mandl 1931: 25; Marcu 1926c: 67; Matthews & Fowler 1883: 42; Mequignon 1936: 15; Michalski 1957c: 168; Moragues 1889: 32; Munro 1921: 88, 1926: 1–77; Munster 1928: 291; Murayama 1929b: 2, 1929c: 23, 1929d: 4, 1930b: 16, 1936b: 115, 1937b: 374, 1939: 142, 1940a: 232, 1942a: 56, 1949a: 13, 1954b: 201; Murray 1853: 60; Negru 1966b: 404, 1968a: 457; Nobuchi 1974: 45; Nohira & Ogawa 1986; Nunberg 1927a: 215, 1928b: 88, 119, 1954: 83; Nuorteva 1971: 68; Nusslin 1898: 282; Orest 1926c: 67; Pacher 1865: 152; Palmen 1944: 60, 1946: 195; Penecke 1927: 235; Perris 1876a: 254, 1877a: 414; Pfeffer 1924b: 472, 1931b: 74, 1935: 158, 1947e: 2, 1950b: 73, 1984: 277, 1989a: 80; Plaza & Gil 1982: 241; Pomerantzev 1907b: 494; Poppius 1900: 108; Postner 1974: 450; Rapp 1934: 732; Ratzeburg 1837: 131, 1839: 158, 188; Redtenbacher 1858: 834, 1874: 377; Reitter 1869b: 154, 1894a: 84, 1916: 305; Rimski-Korsakov et al. 1949: 288; Rosenhauer 1856: 302; Roubal 1910: 204, 1936b: 193, 1941: 273; Rozhkov 1970: 155; Rudnev 1958: 372; Saalas 1913a: 68, 90, 1917a: 18, 1930: 118, 1931: 68; Saint-Albin 1949: 2; Sainte-Claire 1914: 473; Sainte-Claire & Mequignon 1938: 449; Schaschl 1854: 133; Schaufuss 1915: 1250; Schaum 1859: 96, 1862: 101; Schedl 1959h: 100, 1967c: 72, 1971d: 429, 1971f: 147, 1980a: 26, 1981b: 87; Schilsky 1909: 188; Schimitschek 1938b: 116; Schiodte 1873: 102; Schwerdtfeger 1981: 189; Seidlitz 1872: 396, 1891b: 612; Sharp & Fowler 1893: 35; Shiraki 1952; Siebke 1875: 284; Sparre-Schneider 1889: 61; Stark 1926b: 105, 1926j: 127, 1931a: 28, 1931d: 552, 1952: 417; Stein 1868: 114; Stein & Weise 1877: 165; Stephens 1829a: 145, 1830: 357, 1839: 207; Stierlin 1898: 445; Stierlin & Gautard 1871: 293, 1906: 206; Strand 1946: 604; Strauch 1861: 122; Sturm 1826: 102, 1843: 230; Thomson 1865: 365, 1868: 222; Tragardh 1914: 100, 1917: 1–28, 1919: 237–248; Tredl 1907: 16; Tschorbadjiev 1929: 176; Villa & Villa 1833: 26; Wachtl 1876a: 455; Wessel 1877: 391; Westhoff 1882: 239; Wichmann 1927a: 79; Wiepken 1883: 89; Wilke 1931: 641; Winter, T. G. 1983: 16; Wiren 1945: 43; Yanovskii & Dmitrienko 1983; Yanovskii & Tegshzhargal 1985: 411; Yin, Huang, & Li 1984: 141; Zetterstedt 1828: 345, 1840: 192; Zinovjev 1955: 187; Zoufal 1920: 21. (**tx**) Acloque 1896; Altman 1844; Bach 1854, 1864; Balachowsky 1944b, 1949a: 273; Barbey 1901: 24, 91; Bechstein 1818: 74, 186; Bedel 1888b: 401, 417; Beffa

1949, 1961; Bertolini 1872; Bevan 1987: 114; Boas 1923: 354; Brancsik 1871; Calwer 1858; Ceballos 1945; Chapuis & Candeze 1853; Charvat 1950; Choo 1983: 89; Dejean 1821, 1825; Dombrowsky 1887, 1892; Duffy 1953; Duftschmidt 1825; Eggers 1921: 39–43, 1927c, 1929e: 42; Eichhoff 1864b: 42, 1872d: 139, 1877a: 388, 1877b: 118, 1878b: 266, 1881a: 50, 239, 1883a: 113, 138; Endrodi 1957b; Escherich 1923b: 487, 542; Escherich & Escherich 1897; Everts 1903: 764, 1922: 645; Fabricius 1792: 365, 1801: 386; Fauvel 1885, 1889; Ferrant 1911; Ferrari 1867a: 43; Fleischer 1905, 1927; Florov 1949: 124; Formanek 1907: 43; Fricken 1889: 345; Fuchs 1911a; Gabler 1955; Gebien 1907: 197; Germar 1824; Girard 1873; Grune 1979: 144–145; Gyllenhal 1813: 354, 1827: 620; Hagedorn 1910a: 105; Hansen, V. 1956, 1964: 465; Henry 1892: 10–11; Henschel 1876a: 44, 238, 1895a: 184; Herbst 1793: 114; Heyden 1875: 391; Hoffmann 1936; Hopkins 1914: 125–126; Iablokoff-Khnzorian 1961: 105; Joly 1976, 1976b: 177, 246; Karpinski & Strawinski 1948: 157; Knotek 1892a: 37; Koch 1913: 93, 1928: 80, 104, 1932: 146; Krivolutskaya 1956: 837, 1958: 183; Kuhnt 1913: 1058; Kurenzov 1941a: 212, 1948b: 105; Lacordaire 1866: 383; Letzner 1891: 376; Leunis 1886: 180; Louzil 1961: 108; Lovendal 1889b: 59, 1898: 157; Lucht 1987: 279; Lunardoni & Leonardi 1889: 470; Meixner 1937: 1217; Murayama 1929: 29–30, 1930b: 16, 19–21, 1936: 113–120, 1937b: 372, 374, 1939: 142–143, 1940a: 232, 1954b: 201; Negru 1966b: 404; Niisima 1909: 150; Nobuchi 1974: 45, pl. 1–3; Nordlinger 1848: 235, 1856: 18; Nunberg 1926: 51, 1954: 83; Panzer 1795a: 285; Paykull 1800: 147; Perris 1877a: 414; Pfeffer 1932b: 27, 1933: 3–54, 1941b: 6, 1941c: 5, 1947e: 2, 1955a: 258, 1989a:pl. 22; Pjatnitskii 1930b: 179; Plaza & Gil 1982: 241, 243; Portevin 1935: 338; Postner 1974: 450; Prell 1929: 90; Ratzeburg 1837: 131, 1839: 158, 188; Redtenbacher 1849a: 357, 1849b: 26, 1858: 834, 1874: 377; Reitter 1894a: 84, 1913a: 110, 1916b: 305; Rey 1892b: 30; Rhumbler 1922: 311, 1927: 325; Rupertsberger 1879: 231, 1880: 231; Saalas 1913a: 68, 90, 1914: 304–305, 1916: 91–95, 110–116, 1919, 1949: 344, 395; Sahlberg 1836: 145; Schedl 1934f: 1645, 1946a: 6, 1952f: 87, 1959h: 100, 1980a: 26, 1981b: 88; Scherb 1971; Schimitschek 1937c: 59, 1955c: 92; Schlechtendal & Wunsche 1879: 126; Seidlitz 1872: 396, 1891b: 612; Sharp & Muir 1912: 572; Spessivtsev 1913a: 84, 1922a: 486, 1925a: 191, 1931: 81–82; Stark 1925: 300–301, 1952: 417; Stephens 1829a: 145, 1829b: 12, 1830: 357, 1839: 207; Stierlin 1898: 445; Taschenberg 1880: 220, 228; Thompson 1865: 365, 1868: 222; Wachtl 1895: 8; Weber, L. 1912: 30; Yin, Huang, & Li 1984: 141; Zetterstedt 1828: 345, 1840: 192. (**ms**) Escherich 1932b; Hartig 1834: 108; Heinemann 1908a; Henschel 1880b: 257, 1880c: 60; Michalski 1959a: 291; Schwappach 1924: 56; Sedlaczek 1902a: 126, 1913: 455; Weber, L. 1912: 30.

***longicollis* (Gyllenhal)** 1827: 621 (*Bostrichus*). Syntypes, sex?; in Scania, in Vermelandia; not located.
Figures: Balachowsky 1949: 272, Barbey 1925: 243, Grune 1979: 140, Joly 1976b:pls. 11–12, Pfeffer 1989a:pls. 11–12, Plaza & Gil 1982: 241, 243.
Distribution: Asia (Syria/ Turkey), Europe (Bulgaria/ Corsica/ Czechoslovakia/ Denmark/ Finland/ France/ Greece/ Germany/ Hungary/ Italy/ Norway/ Poland/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia).
Hosts: *Pinus* spp.
References: (**ay**) Escherich 1923b: 546; Feytaud 1950; Fuchs 1911a; Nunberg 1926: 51. (**bv**) Chararas 1973a, 1976b; Grune 1975: 141; Prell 1930c: 639, 1931: 367. (**cn**) Barbey 1925: 243; Chararas 1978; Chorbadzhievo 1929; Escherich 1917: 97–115, 1923b: 546; Esterberg 1959; Feytaud 1950a; Fice 1961: 173–204; Joly 1976; Kholodkovskii 1912: 279; Kobakhidze 1960: 1853; Nusslin 1913: 279; Rudnev 1965b; Schevyrew 1905b: 1104; Schimitschek 1944: 226; Schwerdtfeger 1944a: 177, 1957a: 183; Wichmann 1927b: 353, 378. (**ec**) Acatay 1943b; Karpinski 1932a: 95, 1933: 52–56; Kleine 1908c: 214; Kobakhidze 1960: 1853; Nikitsky 1978; Nusslin 1927: 337; Pfeffer 1960: 346; Schwerdtfeger 1944a: 177, 1957a: 183; Tragardh 1927a: 193, 1928: 776. (**hb**) Adelung 1905; Barbey 1925: 243; Bukowsky 1930; Chararas 1962c: 370; Charvat 1950; Chorbadzhievo 1929; Dombrowsky 1887, 1892; Eichhoff 1881a: 50, 248; Escherich 1923b: 546; Feytaud 1950a; Gyorfi 1957; Henschel 1895a: 185; Joly 1976; Karpinski & Strawinski 1948: 157; Kholodkovskii 1912: 279; Lengerken 1939: 36, 1954: 93; Michalski 1959a: 291; Nusslin 1913: 279, 1927: 337; Pfeffer 1941b: 6, 1989a: 77; Postner 1974: 451; Prell 1930c: 639, 1931: 367; Schedl 1980a: 27, 1981b: 89; Schevyrew 1905b: 1104; Schimitschek 1944: 226; Schwerdtfeger 1944a: 177, 1957a: 183, 1981: 189; Spessivtsev 1913a: 80; Stark 1952: 408; Tschorbadjiev 1929: 176; Wachtl 1876a: 460; Wichmann 1927b: 353, 378. (**ds**) Acatay 1943: 3; Acloque 1896; Barthe 1896; Bickhardt 1916; Bistrom & Vaisanen 1988: 42; Brakman 1966b: 206; Bukowsky 1930; Buresh & Lazarov 1956; Butovitsch 1963; Calwer 1884, 1893; Champion 1894; Charvat 1950; Chorbadzhievo 1929; Endrodi 1958b; Ericson & Sandin 1893; Escherich 1923b: 546; Esterberg 1928, 1959; Fedorov 1930; Gaubil 1849: 126; Grill 1895: 310; Grune 1975: 141; Gyllehnal 1827: 621; Hagedorn 1910d: 55; Hansen, V. 1939, 1956; Hellen 1947; Hennig 1954: 261; Henschel 1895a: 185; Heyden, Reitter, & Weise 1833: 182, 1891: 673, 1906: 712; Horion 1951; Jazentkovsky 1912: 291; Joly 1976; Karpinski 1931: 20, 1932a: 95, 1932b: 55; Karpinski & Strawinski 1948: 157; Keler 1925b: 274; Klefbeck

& Sjoberg 1960: 232; Kleine 1912a: 262, 268, 1913a: 35, 1913b: 129, 1934a: 151; Kozikowsky & Kuntze 1925: 24; Krogerus 1944: 32; Lomnicki 1913b: 148; Lovendal 1890c: 209; Lucht 1987: 279; Lundberg 1981: 151; Mequignon 1936: 54; Munster 1928: 290; Nunberg 1928b: 88, 120, 1954: 81, 1960b: 160; Pfeffer 1935: 158, 1947d: 127, 1947e: 14, 1960: 346, 1984: 277, 1989a: 77; Pittioni 1943: 176; Pjatnitskii 1930a: 165; Plaza & Gil 1982: 241; Postner 1974: 451 Reitter 1894a: 85, 1916: 305; Richter 1982; Roubal 1941: 273; Rudnev 1926: 32–69, 1965b; Sainte-Claire 1914: 473; Sainte-Claire & Mequignon 1938: 449; Schaufuss 1915: 1250; Schaum 1859: 96, 1862: 101; Schedl 1959h: 100, 1961b: 185, 1971d: 431, 1980a: 27, 1981b: 89; Schilsky 1909: 188; Schwerdtfeger 1981: 189; Seidlitz 1872: 395, 1891a: 566, 1891b: 612; Siebke 1875: 284; Stark 1926b: 105, 1926g: 154, 1926j: 127, 1952: 408; Stein 1868: 114; Stein & Weise 1877: 165; Stierlin 1898: 444; Thomson 1865: 364, 1868: 222; Tredl 1907: 16; Tschorbadjiev 1929: 176; Wachtl 1876a: 460. (**tx**) Acloque 1896; Balachowsky 1949a: 271–273; Charvat 1950; Dombrowsky 1887, 1892; Eggers 1910: 38, 1921: 42; Eichhoff 1864: 46, 1868d: 419, 1876: 378, 1878b: 268, 1881a: 50, 248, 1883a: 114, 139; Endrodi 1957b; Escherich 1923b: 546; Ferrari 1867a: 45–46; Fleischer 1927; Fuchs 1911a; Gebien 1907: 197; Grune 1979: 140–141; Gyllenhal 1827: 621; Hagedorn 1910a: 105; Hansen, V. 1956; Henschel 1895a: 185; Iablokoff-Khnzorian 1961: 105; Joly 1976, 1976b:pl. 11–12; Karpinski & Strawinski 1948: 157; Kuhnt 1913: 1058; Letzner 1891: 377; Lovendal 1890c: 209; Lucht 1987: 279; Nunberg 1926: 51, 1954: 81; Pfeffer 1933: 3–54, 1941b: 6, 1947e: 44, 1955a: 261, 1989a:pl. 11–12; Plaza & Gil 1982: 241, 243; Portevin 1935: 338; Postner 1974: 451; Quaschik 1953: 35; Reitter 1894a: 85, 1913a: 111, 1916: 305; Schedl 1934f: 1645, 1959h: 100, 1961b: 187, 1980a: 27 1981b: 89; Seidlitz 1872: 395, 1891a: 566, 1891b: 612; Sokanovskii 1928: 667–668; Spessivtsev 1913a: 79–80, 1922a: 483, 490, 1925a: 190, 1931: 76–77; Stark 1952: 408; Stierlin 1898: 444; Thomson 1865: 364, 1868: 222; Wachtl 1895: 8; Weber, L. 1912: 30. (**ms**) Eichhoff 1868d: 419; Michalski 1959a: 291; Rohrl 1914b: 157; Sedlaczek 1913: 455; Weber, L. 1912: 30.

oblitus Perris 1862: 218 (*Tomicus*). Syntypes ♂ ♀; Les montagnes du Guadarrama (Espagne); Perris Collection. Synonymy: Pfeffer 1955: 261. References: (**ec**) Perris 1862: 218. (**hb**) Dombrowsky 1892; Wachtl 1876a: 460. (**ds**) Blanchere & Roberts 1889; Gemminger & Harold 1872: 2691; Gozis 1875: 80; Lacordaire 1866: 383; Schilsky 1909: 188; Stein 1868: 114; Stein & Weise 1877: 165; Wachtl 1876a: 460. (**tx**) Bertolini 1872; Dombrowsky 1892; Eichhoff 1868d: 419, 1876a: 378; Ferrari 1867: 45–46; Lacordaire 1866: 383; Letzner 1891: 377; Perris 1862: 218; Pfeffer 1955: 261. (**ms**) Eichhoff 1868d: 419.

***multidentatus* (Murayama)** 1953: 34 (*Ips*). Holotype ♂; Shimosato, Hirose, Jakuchi; Murayama Collection in USNM, Washington.
Distribution: Asia (Japan).
Hosts: *Pinus densiflora*.
References: (**cn**) Murayama 1953: 34, 1954a: 9. (**ds**) Murayama 1951c: 4, 1954a: 9, 1954b: 171; Nobuchi 1966d: 35, 1974: 52. (**tx**) Murayama 1953: 34, 1954b: 171; Nobuchi 1966d: 35, 1974: 52.

***nankinensis* Kurenzov & Kononov** 1966: 32. Holotype ♂; China: near Nankin; ISBN, Novosibirsk, USSR.
Figures: Kurenzov & Kononov 1966: 32 (male declivity).
Distribution: Asia ("near Nanking" in China).
Hosts: *Pinus thunbergiana*.
References: (**tx**) Kurenzov & Kononov 1966: 32.

***pinivora* Schedl** 1961b: 187. Holotype ♂; Turkei, Catak bei Orhaneli; Schedl Collection in NHMW, Wien.
Distribution: Asia (Turkey).
Hosts: *Pinus nigra*.
References: (**ds**) Pfeffer 1984: 277. (**tx**) Schedl 1961b: 187, 1979c: 195.

***proximus* (Eichhoff)** 1868b: 403 (*Tomicus*). Syntypes, sex?; Europ. mer.; Hamburg Museum, lost.
Figures: Alkan 1946: 113, Balachowsky 1949a: 266, 270, Barbey 1925: 237, Grune 1979: 142, Nobuchi 1966d:pl. 6, 1974:pl. 1, 3, Pfeffer 1989a:pl. 11, Plaza & Gil 1982: 241, 245.
Distribution: Asia ("Manchuria" in China/ Japan/ Korea/ Turkey/ Siberia in E USSR/ Vietnam), Europe (Austria/ Belgium/ Bulgaria/ Corsica/ Czechoslovakia/ Denmark/ Finland/ France/ Germany/ Greece/ Hungary/ Italy/ Netherlands/ Norway/ Poland/ Portugal/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia), introduced into Madagascar.
Hosts: *Pinus densiflora, P. halepensis, P. koraiensis, P. parviflora, P. thunbergiana, P.* spp., rare in *Picea* spp.
References: (**ay**) Escherich 1923b: 459, 487, 543; Fuchs 1911a; Nunberg 1926: 5, 1928a: 141; Nusslin 1911a: 51; Schevyrew 1889a: 21; Wichmann 1912a: 10. (**bv**) Kevdina 1897: 108; Nuorteva 1956c: 67; Wichmann 1912a: 10. (**cn**) Andersson & Lekander 1966: 684; Bakke 1960: 313; Barbey 1925: 237; Chararas 1961b: 69; Chorbadzhievo 1929; Dehlen & Langstrom 1977; Eckstein 1926: 574; Egorov 1958: 1492; Eidmann 1970a, 1973; Eidmann & Klingstrom 1976: 240; Escherich 1923b: 459, 487, 543; Esterberg 1959; Florov 1949: 126; Gabler 1955; Grandi 1951; Inouye 1949a: 13, 93, 1949b; Jahn 1960b; Judeich & Nitsche 1895: 500; Juutinen 1960: 30; Kamuishnuii 1925: 14–16; Kholodkovskii 1912: 315; Koch 1913: 106; Koehler & Zdanowicz 1954: 19–51; Lekander

1955b: 19; Lekander & Rennerfelt 1955: 10; Lekander, M. 1951: 108; Lindgren 1980a: 66; Lonshehakov & Lure 1960; Mamaev 1929: 134–142; Mathiesen 1952: 305; Mathiesen-Kaarik 1953: 6; Megalov & Bazhenov 1927: 1–29; Mokrzecki 1933: 287; Nusslin 1883: 152, 1913: 269; Oda, Kto, & Nobuchi 1964; Polozhentzev 1926: 1–5; Rhumbler 1922: 311, 1927: 325; Saalas 1949: 344, 395; Schimitschek 1937c: 60, 1944: 226, 1955a: 80, 83, 1955c: 92; Schwerdtfeger 1957a: 183, 1968a; Sedlaczek 1921: 339; Shiraki 1952; Titova 1966; Tragardh 1917: 11, 28, 1919a: 104, 1921e: 64, 1927c: 83; Tragardh & Butovitsch 1936: 577; Tullgren 1916: 104; Wachtl 1901: 379, 381; Weber, H. 1926: 574; Wichmann 1927b: 352; Zarco 1946a: 251. (**ec**) Acatay 1943b: 3; Annila & Petaisto 1978; Apfelbeck 1916b; Balazy & Michalski 1964b; Barbey 1927; Bogdanova 1987; Chararas 1959a, 1964b; Cooreman 1963: 46; Fuchs 1937; Golovyanko 1926: 1–87; Graham 1969: 879; Gyorfi 1962: 214; Heliovaara & Lilja 1989; Henningson & Lundstrom 1974; Heqvist 1963: 155; Hubenthal 1902: 291; Hughs & Jackson 1958: 73; Jamnicky 1957c: 20; Kakuliya 1967; Kakuliya & Devdariani 1965; Kangas 1946b: 23; Kleine 1908c: 214; Kosarievskaya & Mamajev 1962: 451; Kostenko 1929; Kostin 1964: 125; Koyama 1963; Lazarevskaya 1962; Lindquist, E. E. 1969c; Lovaszy 1941: 195; Loyttyniemi & Hiltunen 1976; Lundberg 1984; Mathiesen 1952: 305; Mathiesen-Kaarik 1953: 6, 1960c; Meyer 1934: 615; Michalski & Ratajczak 1989; Novak, P. 1952: 417; Nuorteva 1956a: 17, 1957b: 50, 1959d: 201, 1968a, 1970, 1971: 70; Nusslin 1927: 337; Okolow 1963; Palmen 1944: 60, 1946: 195; Pfeffer 1928b: 6; Poinar 1972, 1975: 163; Ruhm 1956b: 4, 1960: 203; Saalas 1917a: 18, 1928: 652, 1930: 118, 1949: 344, 395, 1951: 14; Schedl 1936f: 172; Schimitschek 1955: 80, 83; Schwerdtfeger 1944a: 176, 1957a: 183; Sedlaczek 1908: 52, 1935a: 163; Thompson, W. R. 1943: 82; Titova 1966; Tudor 1969: 34; Vitzthum 1923: 165. (**hb**) Alkan 1946: 113; Annila & Petaisto 1978; Apfelbeck 1916b, 1917; Bakke 1960a: 313, 1968a: 441–602; Barbey 1901: 24, 90, 1925: 237; Bargmann 1906; Beffa 1961; Bejer-Petersen 1957; Borodajewsky 1930c, 1931: 157–159; Budkov 1897; Butovitsch & Spaak 1939: 1–120; Cecconi 1906, 1924; Chararas 1961b: 69, 1962c: 371; Charvat 1950; Chorbadzhievo 1929; Dombrowsky 1887, 1892; Dzhambazishvili 1961: 751–757, 1962; Eckstein 1897, 1926: 574; Eichhoff 1881a: 50, 235; Eidmann 1973; Eidmann & Klingstrom 1976: 240; Escherich 1923b: 459, 487, 543; Everts 1903: 763; Fuchs 1904a, 1907: 48, 1911b; Gabler 1955; Gornostaev 1916: 312, 1917: 308–315; Grandi 1951; Gyorfi 1957; Henschel 1894, 1895a: 185; Judeich & Nitsche 1895: 500; Karpinski 1933b: 38; Karpinski & Strawinski 1948: 157; Khartinov 1924: 199–204; Kholodkovskii 1889: 270, 1912: 315; Knotek 1894a: 558, 1897: 157, 1898b: 331; Kostin 1960: 136; Krivolutskaya 1960; Kurenzov 1950d: 235; Lekander 1959a: 84; Lengerken 1939: 39, 1954: 93; Lindgren 1980a: 66; Lunardoni & Leonardi 1889: 473; Nuorteva 1956c: 67, 1968a, 1970; Nusslin 1898: 274, 281, 1906b: 16, 1913: 269, 1927: 337; Petrenko 1966; Pfeffer 1941b: 6, 1941c: 7, 1989a: 79; Postner 1974: 450; Rhumbler 1922: 311, 1927: 325; Rimski-Korsakov et al. 1949: 291; Rozhkov 1970: 157; Rudnev 1926: 32–69; Saalas 1913a: 68, 90, 1949: 344, 395, 1951: 14; Schedl 1981b: 88; Schimitschek 1944: 226, 1955a: 80, 83; Schwerdtfeger 1944a: 176, 1957a: 183, 1981: 189; Sedlaczek 1921: 339, 1935a: 163; Spessivtsev 1913a: 86; Stark 1952: 411; Tragardh 1921e: 64, 1927c: 83, 1930c: 470, 1931: 56, 1939b: 159, 219; Tschorbadjiev 1929: 176; Virkki 1960: 3–16; Wachtl 1876a: 460, 1901: 379, 381; Weber, H. 1926: 574; Wichmann 1927b: 352. (**ds**) Alluaud 1900: 441; Ammann & Knabl 1923; Audras & Schaefer 1957; Bakke 1960a: 313; Barthe 1896; Bay 1944: 320; Bejer-Petersen & Jorum 1977: 32; Bistrom & Vaisanen 1988: 42; Borchert 1951; Brakman 1966b: 207; Browne 1980c: 482; Budkov 1897; Buresh & Lazarov 1956; Butovitsch 1963; Butovitsch & Heqvist 1947; Cecconi 1906; Champion 1894; Chararas 1961c: 93; Charvat 1950; Cho 1957; Choo 1983: 90; Choo & Woo 1985: 165; Chorbadzhievo 1924d, 1929; Eder 1934; Endrodi 1958b; Escalera 1919; Escherich 1923b: 459, 487, 543, 1932b; Esterberg 1928, 1959; Everts 1922: 645, 1925; Fauvel 1885; Favre 1890; Fuchs 1904a, 1905a, 1907: 48; Gemminger & Harold 1872: 2691; Gillerfors 1966; Gornostaev 1917: 308–315; Grill 1895a: 310; Grune 1979: 143; Hagedorn 1910d: 58; Hansen, V. 1939, 1956, 1964: 465; Heinemann 1908a; Hellen 1947; Henschel 1894: 380, 1895a: 185; Heyden 1875: 39; Heyden, Reitter, & Weise 1883: 182, 1891: 673, 1906: 712; Horion 1951; Inouye 1949b; Jazentkovsky 1912: 291; Judeich & Nitsche 1895: 500; Karpinski 1925: 217, 1926: 83, 1931: 36, 1933b: 38; Karpinski & Strawsinski 1948: 157; Keler 1922b: 211, 1925b: 274; Klefbeck & Sjoberg 1960: 232; Kleine 1912a: 217, 262, 268, 1913a: 35, 1913b: 128, 1914b: 287, 1934a: 151; Knotek 1892: 37, 1894a: 558, 1898b: 331; Ko 1969: 280; Koltze 1901: 153; Kostenko 1929; Kozikowsky & Kuntze 1925: 20; Krivolutskaya 1960, 1983; Kurenzov 1936b: 350; Kurir 1947c: 7; Langhoffer 1915c: 158; Leclercq 1971; Lekander 1955b: 19; Lengerken 1954: 93; Lindberg & Saris 1952: 59; Lomnicki 1913b: 348; Lucht 1987: 279; Lunardoni & Leonardi 1889: 473; Lundberg 1974: 92, 1979: 31, 1981: 151; Lundblad 1950c: 117; Mahler 1987: 233; Mandl 1931: 25; Munster 1922b: 134, 1928: 291; Murayama 1929b: 2, 1929c: 23, 1929e: 45, 1930a: 1, 1930b: 16, 1936a: 129, 1936b: 116, 1937b: 375, 1948: 2, 1949a: 11, 13, 1949c: 102, 1951c: 4, 1954b: 171, 1955: 99; Nobuchi 1966d:

37, 1974: 46; Novak, P. 1952: 417; Nunberg 1928b: 88, 117, 1954: 81; Nuorteva 1956b: 168, 1971: 68; Nusslin 1898: 274, 281; Palm 1955c: 45, 1962a: 183; Palmen 1944: 60, 1946: 195; Pfeffer 1924b: 471, 1928b: 6, 1931b: 74, 1935: 158, 1947d: 127, 1947e: 4, 1989a: 79; Pinheiro 1965: 352–364; Pittioni 1943: 176; Platonoff 1942: 64, 1943: 141; Plaza & Gil 1982: 241; Pomerantzev 1907b: 494; Poppius 1900: 108; Postner 1974: 450 Prossen 1913: 83; Rapp 1934: 731; Reitter 1894a: 84, 1916: 305; Rimski-Korsakov et al. 1949: 291; Roubal 1941: 273; Rozhkov 1970: 157; Saalas 1913a: 68, 90, 1917a: 18, 1930: 118, 1931: 68; Sahlberg 1900: 105; Sainte-Claire & Mequignon 1938: 449; Schaufuss 1915: 1250; Schedl 1960e: 172, 1967c: 72, 1969a: 205, 1971d: 429, 1973c: 378, 1975a: 452, 1980a: 27, 1981b: 88; Schilsky 1909: 188; Schreiner 1897: 369; Schwerdtfeger 1981: 189; Seidlitz 1891a: 566, 1891b: 611; Shiraki 1952; Stark 1926b: 105, 1926j: 127, 1931a: 28, 1931d: 551, 1952: 411; Stein & Weise 1877: 164; Stierlin 1898: 444; Strand 1946: 604; Takahasi & Ito 1951: 159–161; Tragardh 1917: 1–28, 1919: 237–248, 1935: 1–268, 1939b: 159, 219; Tredl 1907: 16; Tschorbadjiev 1929: 176; Wachtl 1876a: 460; Wanka 1908: 231; Wegelius 1960: 107; Wichmann 1927a: 78; Yanovskii 1974, 1977a, 1989: 64; Yanovskii & Dmitrienko 1983; Yanovskii & Tegshzhargal 1985: 411; Zinovjev 1955: 187; Zolk 1937: 147–172. (**tx**) Alkan 1946: 113; Balachowsky 1949a: 273; Barbey 1901: 24, 90; Beffa 1961; Bejer-Petersen 1957; Charvat 1950; Choo 1983: 90; Chorbadzhievo 1924d; Dombrowsky 1887, 1892; Eggers 1921: 39–43, 1924: 41, 1932c: 33; Eichhoff 1868b: 403, 1872d: 139, 1877c: 388, 1878b: 262, 1881a: 50, 235, 1883a: 113, 138; Endrodi 1957b; Escherich 1923b: 459, 487, 543; Everts 1903: 763, 1922: 645; Fauvel 1885; Ferrari 1967b: 112; Fleischer 1927; Formanek 1907: 43; Fuchs 1911a; Gabler 1955; Gebien 1907: 197; Grune 1979: 142–143; Hagedorn 1910a: 105; Hansen, V. 1956, 1964: 465; Henschel 1895a: 185; Iablokoff-Khnzorian 1961: 105; Judeich & Nitsche 1895: 500; Karpinski & Strawinski 1948: 157; Keler 1923a: 166–186; Knotek 1892a: 37; Koch 1913: 106, 1928: 83, 1932: 129; Kuhnt 1913: 1058; Kurenzov 1941a: 213; Letzner 1891: 376; Lovendal 1889b: 58, 1898: 154; Lucht 1987: 279; Lunardoni & Leonardi 1889: 473; Murayama 1929: 22–30, 1930b: 16, 19–20, 31, 1934c: 299, 1936a: 128–129, 1937c: 375, 1954b: 171, 1955: 99; Niisima 1909: 149, 1910a: 11; Nobuchi 1966d: 37, pl. 6, 1974: 46, pl. 1, 3; Nunberg 1926: 51–59, 1928a: 141, 1954: 81, 1956c: 163–164; Nusslin 1911a: 51; Pfeffer 1932b: 27, 1933: 3–54, 1941b: 6, 1941c: 7, 1947e: 4, 1955a: 259, 1989a:pl. 11; Plaza & Gil 1982: 241, 245, 248; Postner 1974: 450; Quaschik 1953: 35; Reitter 1894a: 84, 1913a: 109, 1916: 305; Rey 1892b: 30; Rhumbler 1922: 311, 1927: 325; Saalas 1913a: 68, 90, 1914: 304–306, 1919, 1949: 344, 395; Schedl 1934f: 1645, 1941a: 42, 1965c: 51, 1980a: 27, 1981b: 88; Schevyrew 1889a: 21; Schimitschek 1937c: 60, 1955c: 92; Seidlitz 1891a: 566, 1891b: 611; Spessivtsev 1913a: 81, 86, 1922a: 484, 490, 1925a: 191, 1925b: 21, 1931: 81; Stark 1925: 300–301, 1952: 411; Stierlin 1898: 444; Teplouchow 1890: 263; Wachtl 1895: 8; Weber, L. 1912: 30. (**ms**) Escherich 1932b; Fuchs 1911b; Heinemann 1908a; Keler 1925a: 166–186; Lekander 1959a: 84; Sedlaczek 1913: 455; Weber 1912: 30.

omissus Eichhoff 1872d: 138 (*Tomicus*). Syntypes, sex?; Neustadt-Eberswalde; Hamburg Museum, lost. Synonymy: Eichhoff 1881a: 236.

References: (**hb**) Dombrowsky 1892; Wachtl 1876a: 460. (**ds**) Gemminger & Harold 1872: 2691; Kraatz 1876: 39, 1896b: 39; Schilsky 1909: 188; Stein & Weise 1877: 164; Wachtl 1876a: 460. (**tx**) Balachowsky 1949a: 273; Dombrowsky 1892; Eichhoff 1872d: 138, 1877b: 118–119, 1877c: 388, 1878b: 264, 1881a: 236; Letzner 1891: 376.

fejferi Keler 1925a: 191 (*Ips*). Holotype, sex?; Zwierzyniec Lubelski in Polen; not located. Synonymy: Nunberg 1956: 164.

References: (**tx**) Keler 1925a: 191–196, 1926: 169–170; Nunberg 1956c: 163–164, 168; Schedl 1934f: 1644. (**ms**) Keler 1925a: 194–196.

***starki* Spessivtsev** 1926a: 217. Syntypes ♂ ♀; Gouv. Orlov (Mittel-Russland); Spessivtsev Collection.

Figures: Yin, Huang, & Li 1984: 140 (adult).

Distribution: Asia (Heilongjiang, Sichuan, Yunnan in China/ Sakhalin Island, E USSR) Europe (Finland/ Poland/ W USSR).

Hosts: *Picea ajanensis, P. asperata, P. excelsa, P. koraiensis, P. likiangensis, P. obovata, Abies faxoniana, Pinus densata.*

References: (**bv**) Grune 1979: 143. (**cn**) Esterberg 1959; Florov 1949: 130; Kontkanen 1932: 62; Kurenzov 1935c: 188; Nestertschuk 1930: 176; Sierpinski 1958: 69. (**ec**) Karpinski 1932a: 103. (**hb**) Borodajewsky 1928, 1929: 515–521, 670–672, 1930a: 249–251, 1931: 155–156; Karpinski 1933b: 38; Karpinski & Strawinski 1948: 157; Kurenzov 1935a: 20, 44, 1948b: 111; Postner 1974: 452; Stark 1952: 409. (**ds**) Esterberg 1959; Grune 1979: 143; Hansen, V. 1939; Hellen 1947; Jakaitis 1985; Karpinski 1931: 18, 36, 1932a: 103, 1933b: 38; Karpinski & Strawinski 1948: 157; Klefbeck & Sjoberg 1960: 232; Kleine 1934a: 152; Kontkanen 1932: 62; Krivolutskaya 1983; Kurenzov 1935a: 20, 44, 1935c: 188, 1941: 214–215, 1951b: 20; Nunberg 1954: 81; Nuorteva 1971: 71; Postner 1974: 452; Stark 1931a: 28, 1931d: 552, 1952: 409; Strand 1946: 604; Yakaitas 1985; Yanovskii & Tegshzhargal 1985: 415; Yin, Huang, & Li 1984: 139; Zinovjev 1955: 187. (**tx**) Grune 1979: 143; Karpinski & Strawinski 1948: 157; Krivolutskaya 1958: 183; Kurenzov 1941a: 214, 1948b: 111; Kurenzov & Kononov 1966: 32; Nobuchi

1959c: 24; Nunberg 1954: 81; Pfeffer 1955a: 255; Schedl 1934f: 1645; Sokanovskii 1929: 521–526; Spessivtsev 1926a: 217, 1931: 150; Stark 1927: 227–230, 1952: 409.

***suturalis* (Gyllenhal)** 1827: 622 (*Bostrichus*). Syntypes ♂ ♀; Europa; Gyllenhal Collection.

Figures: Barbey 1925: 236, Grune 1979: 144, Nobuchi 1966d:pl. 6, 1974:pls. 1, 3, Plaza & Gil 1982: 243, Yin, Huang, & Li 1984: 140.

Distribution: Asia (Jilin, Liaoning, Shanxi, Sichuan, Yunnan in China/ Japan/ Korea/ Sakhalin Island, Siberia in E USSR), Europe (Austria/ Belgium/ Bulgaria/ Corsica/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Hungary/ Italy/ Netherlands/ Norway/ Poland/ Portugal/ Romania/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia).

Hosts: *Pinus* spp., *Picea* spp., *Larix* spp., *Abies delavayi*.

References: (**ay**) Chararas 1977b; Escherich 1923b: 487, 543; Feytaud 1950a; Fuchs 1911a; Nunberg 1926: 51; Scherb 1971. (**bv**) Balazy & Michalski 1964b; Chararas 1977b; Choo, Woo, & Park 1988; Grune 1979: 145; Luitjes 1976; Naumann-Etienne 1978a; Nuorteva 1956c: 22, 28; Rozhkov 1970: 156. (**cn**) Anonymous 1978w, 1979p, 1980g; Barbey 1925: 236; Bielussov 1917: 334–337; Chorbadzhievo 1929; Egorov 1958: 1492; Eidmann 1971; Escherich 1917: 97–115, 1923b: 487, 543; Esterberg 1959; Feytaud 1950a; Florov 1949: 127; Gabler 1955; Gusev 1928: 144; Hallett 1923: 13–14; Hanson, H. S. 1937, 1940a; Jahn 1960; Joly 1976; Judeich & Nitsche 1895: 500; Kangas 1937, 1938: 11–20, 73–98; Kholodkovskii 1912: 315; Kobakhidze 1960: 1853; Koch 1913: 108, 123; Kovacevic 1924: 21–22; Kozikowsky 1929: 254; Laidlaw 1947: 53; Lekander 1952b: 5; Marcu 1926c: 67, 1930: 327–336; Mathiesen-Kaarik 1953: 11; Muller 1912: 186; Nusslin 1913: 269; Pfeffer 1948d: 235, 1950c: 3; Rhumbler 1922: 311, 1927: 325; Rozhkov 1957: 71; Saalas 1949: 344, 396; Schimitschek 1937c: 59, 1955a: 80, 83, 1955c: 92; Schwerdtfeger 1944a: 176, 1957a: 183; Shiraki 1952; Titova 1966; Wachtl 1901: 381; Wichmann 1927b: 352. (**ec**) Balazy & Michalski 1960; Barbey 1927; Brammanis 1938, 1940; Chararas 1957d; Donisthorpe 1933a; Francke-Grosmann 1931a; Graham 1969: 880; Hopkins 1908a; Jakaitis & Valenta 1976: 12; Kangas 1937, 1946b: 23; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1980a, 1980b, 1983; Kleine 1908c: 214, 1909a: 48, 1944: 70; Knoche 1908b: 201; Kobakhidze 1960: 1853; Kostenko 1929; Kostin 1964: 125; Krivosheina 1974; Kurenzov 1934a: 58; Luitjes 1976; Lundberg 1984; Mathiesen-Kaarik 1953: 11; Meyer 1934: 614; Michalski & Ratajczak 1989; Naumann-Etienne 1978a; Nuorteva 1956a: 17, 1957b: 68, 1968a, 1970, 1971: 70; Nusslin 1927: 336; Palmen 1944: 60, 1946: 195; Perris 1856a: 244; Pfeffer 1923a: 332, 1928b: 6, 1950c: 3; Poinar 1975: 164; Rondani 1873: 140; Ruhm 1956b: 4, 1960: 203; Ruschka 1921: 241; Saalas 1917a: 18, 1928: 651, 1949: 344, 396, 1951: 14; Schimitschek 1955a: 80, 88; Schwerdtfeger 1944a: 176, 1957a: 183; Sedlaczek 1935a: 163; Thompson, W. R. 1943: 59; Titova 1966; Wiackowski 1957a: 43; Yanovskii 1977b; Zinovjev 1958: 385. (**hb**) Barbey 1901: 24, 92, 1925: 236; Beffa 1961; Borodajewsky 1930c, 1931: 157–159; Budge 1949; Budkov 1897; Bukowsky 1930; Chararas 1962c: 369, 1977b; Charvat 1950; Chorbadzhievo 1929; Dombrowsky 1887, 1892; Eggers 1906; Eichhoff 1881a: 51, 242, 1882a: 241; Elton et al. 1964; Escherich 1923b: 487, 543; Everts 1903: 764; Feytaud 1950a; Fuchs 1904a; Gabler 1955; Gornostaev 1916: 312; Gyorfi 1957; Hagedorn 1903a; Henschel 1885b, 1895a: 186; Joly 1976; Judeich & Nitsche 1895: 500; Karpinski 1933b: 38; Karpinski & Strawinski 1948: 157; Kholodkovskii 1889: 270, 1912: 315; Knotek 1897: 136, 160, 1898b: 332; Kostin 1960: 135; Krivolutskaya 1956: 836, 1960, 1973: 142; Kurenzov 1935a: 44, 1948b: 104, 1950d: 235; Lengerken 1939: 39, 1954: 93; Luitjes 1976; Lunardoni & Leonardi 1889: 473; Madon 1930: 99; Marikovskii 1956: 73; Munro 1926: 70; Naumann-Etienne 1978a; Nilssen 1984; Nordlinger 1856: 18; Nunberg 1929c: 123; Nuorteva 1956c: 22, 28, 1968a, 1970; Nusslin 1898: 282, 1906b: 14, 1913: 269, 1927: 336; Perris 1856a: 244; Petrenko 1966; Pfeffer 1941b: 1, 1941c: 7, 1989a: 78; Postner 1974: 449; Ratzeburg 1837: 155, 1839: 189; Rhumbler 1922: 311, 1927: 325; Rimski-Korsakov et al. 1949: 288; Rozhkov 1970: 156; Rudnev 1926: 32–69, 1958: 372; Saalas 1913a: 68, 91, 1949: 344, 396, 1951: 14; Schedl 1981b: 87; Schimitschek 1955a: 83, 89; Schwerdtfeger 1944a: 176, 1957a: 183, 1981: 189; Sedlaczek 1935a: 163; Spessivtsev 1913a: 83; Stark 1952: 414; Tschorbadjiev 1929: 176; Wachtl 1901: 381; Wichmann 1927b: 352; Zinovjev 1958: 385. (**ds**) Allan 1989; Allen, A. 1951b: 115; Ammann & Knabl 1923; Andersch 1851; Anonymous 1978w, 1979p, 1980g; Atkinson 1921; Audras & Schaefer 1957; Balazy & Michalski 1960; Barthe 1896; Bejer-Petersen & Jorum 1977: 31; Belousov 1916; Bickhardt 1916; Bielz 1887; Borchert 1951; Brakman 1966b: 207; Brancsik 1906; Bucking 1932; Budkov 1897; Bukowsky 1930; Buresh & Lazarov 1956; Butovitsch 1963; Cecconi 1897; Champion 1894; Charvat 1950; Cho 1957; Choo 1983: 91; Choo & Woo 1985: 165; Choo, Woo, & Park 1988; Chorbadzhievo 1929; Debatisse 1945; Donisthorpe 1933b: 105; Duprez 1938a; Eder 1934; Eggers 1904, 1906; Endrodi 1958b; Escalera 1919; Escherich 1923b: 487, 543, 1932b; Esterberg 1928, 1959; Everts 1922: 646, 1925; Eyquem 1891; Fleischer et al. 1923; Fogel & Guilleaume 1945; Forster 1849: 439; Fuchs 1904a, 1905a;

Gaubil 1849: 126; Gemminger & Harold 1872: 2691; Gornostaev 1917: 308–315; Gozis 1875: 80; Grill 1895: 311; Grouzelle 1905; Grune 1979: 145; Gyllenhal 1827: 620; Hagedorn 1903a, 1910d: 59; Hansen, V. 1939, 1956, 1964: 465; Heinemann 1908a; Hellen 1947; Hennig 1954: 263; Henschel 1895a: 186; Heyden 1879: 140, 1881: 177; Heyden, Reitter, & Weise 1883: 182, 1891: 673, 1906: 712; Hoffmann 1936: 41–42; Horion 1951; Jamnicky 1960a; Jazentkovsky 1912: 291; Joly 1976; Judeich & Nitsche 1895: 500; Kadyrov 1988: 43, 1989; Kaltenbach 1874: 685; Karpinski 1925: 217, 1926: 83, 1931: 36, 1933b: 38, 1948b: 231; Karpinski & Strawinski 1948: 157; Kaszab 1977: 67; Keler 1925b: 274; Kersten 1933: 76; Kiefer et al. 1942: 529; Klefbeck & Sjoberg 1960: 232; Kleine 1912a: 262, 268, 1913a: 35, 1913b: 128, 1914b: 249, 1934a: 151; Kloft & Hinks 1945: 218; Knotek 1898b: 332; Ko 1969: 280; Koltze 1901: 153; Koschitzky 1900: 83; Kostenko 1929; Kozikowsky 1921: 181; Krivolutskaya 1956: 836, 1960, 1965: 241, 1973: 142, 1983; Kurenzov 1934a: 58, 1935a: 44, 1936a: 114, 1936b: 357, 1967; Kurir 1947c: 7; Langhoffer 1915c: 158; Leclercq 1971; Lentz 1857: 139; Lindberg & Saris 1952: 59; Lomnicki 1886a: 243, 1913b: 148; Lovendal 1890c: 211; Lucht 1987: 279; Lunardoni & Leonardi 1889: 473; Lundberg 1974: 92; Mandl 1931: 25; Marcu 1926c: 67; Matthews & Fowler 1883: 42; Mequignon 1936: 54; Michalski 1957: 169; Munster 1928: 291; Murayama 1937b: 572, 1948: 3, 1949a: 13, 1951c: 4, 1954b: 171; Negru 1966b: 404, 1968a: 457; Nobuchi 1966d: 38, 1974: 47; Nunberg 1928b: 88, 119, 1954: 81; Nuorteva 1971: 68; Nusslin 1898: 282; Orest 1926c: 67; Pacher 1965: 152; Palm 1946: 122, 1955c: 45; Palmen 1944: 60, 1946: 195; Parfentev 1951: 429, 433; Pfeffer 1928b: 6, 1931b: 74, 1935: 158, 1947e: 4, 1984: 277, 1989a: 78; Platinoff 1940: 11, 1942: 64, 1943: 141; Plaza & Gil 1982: 243; Pomerantzev 1907b: 494; Postner 1974: 449; Rapp 1934: 732; Ratzeburg 1837: 155, 1839: 189; Reitter 1916: 305; Rimski-Korsakov et al. 1949: 288; Rosenhauer 1856: 302; Roubal 1941: 273; Rozhkov 1970: 156; Saalas 1913a: 68, 91, 1917a: 18, 1931: 70; Sainte-Claire & Mequignon 1938: 448; Schaschl 1854: 133; Schaufuss 1915: 1250; Schaum 1859: 96, 1862: 101; Schedl 1952f: 87, 1969a: 205, 1980a: 27, 1981b: 87; Schilsky 1909: 188; Schiodte 1873: 102; Schwerdtfeger 1981: 189; Shiraki 1952; Sokanovskii 1960; Stark 1926b: 105, 1926j: 127, 1927b: 90, 1928b: 630–636, 1931a: 28, 1931d: 552, 1952: 414; Stein 1868: 114; Stein & Weise 1877: 165; Stierlin 1898: 445; Strand 1946: 604; Sturm 1826: 102, 1843: 230; Tredl 1907: 16; Tschorbadjiev 1929: 176; Wanka 1915: 213; Wegelius 1960: 107; Westhoff 1882: 239; Wichmann 1927a: 79; Winter, T. G. 1983: 16; Yanovskii 1974, 1977a, 1989: 64; Yanovskii & Dmitrienko 1983; Yanovskii & Tegshzhargal 1985: 411; Yin, Huang, & Li 1984: 140; Zetterstedt 1840: 193; Zinovjev 1955: 187. (**tx**) Bach 1854; Balachowsky 1949a: 272; Barbey 1901: 24, 92; Beffa 1961; Charvat 1950; Choo 1983: 91; Dombrowsky 1887, 1892; Duffy 1953; Egger 1962; Eggers 1929e: 42, 1932c: 34–35; Eichhoff 1864b: 42, 1877b: 118, 1877c: 388, 1878b: 270, 1881a: 51, 242, 1883a: 113, 138; Endrodi 1957b; Escherich 1923b: 487, 543; Everts 1903: 764, 1922: 646; Fauvel 1889; Fleischer 1927; Formanek 1907: 43; Fuchs 1911a; Gabler 1955; Gebein 1907: 197; Grune 1979: 144, 145; Gyllenhal 1827: 620, 622; Hagedorn 1910a: 105; Hansen, V. 1956, 1964: 465; Henschel 1895a: 186; Hoffmann 1936; Iablokoff-Khnzorian 1961: 105; Joly 1976; Judeich & Nitsche 1895: 580; Karpinski & Strawinski 1948: 157; Koch 1913: 108, 123, 1928: 86, 1932: 128, 132; Krivolutskaya 1956: 836–839, 1958: 183; Kuhnt 1913: 1058; Kurenzov 1941a: 214–216, 1948b: 104; Letzner 1891: 376; Lovendal 1889b: 59, 1890c: 211, 1898: 160; Lucht 1987: 279; Lunardoni & Leonardi 1889: 473; Murayama 1937b: 372, 1954b: 171, 1960: 53; Negru 1966b: 404; Nobuchi 1966d: 38, pl. 6, 1974: 47, pl. 1, 3; Nordlinger 1848: 235, 1856: 18; Nunberg 1926: 51, 1929c: 123, 1954: 81; Pfeffer 1932b: 27, 1941b: 1, 1941c: 7, 1947c: 4, 1955a: 260; Pjatnitskii 1930b: 179; Plaza & Gil 1982: 243; Portevin 1935: 338; Postner 1974: 449; Ratzeburg 1837: 155, 1839: 189; Redtenbacher 1849a: 363, 1849b: 27; Reitter 1913a: 108, 110, 1916: 350; Rey 1892b: 30; Rhumbler 1922: 311, 1927: 325; Saalas 1913a: 68, 91, 1914: 304–306, 1916: 110–116, 1919, 1949: 344, 396; Sahlberg 1836: 147; Schedl 1934f: 1645, 1946a: 6, 1952f: 87, 1980a: 27, 1981b: 87; Scherb 1971; Schimitschek 1937c: 59, 1955c: 92; Sokanovskii 1960: 677; Spessivtsev 1913a: 83–84, 1922a: 484, 1925a: 191, 1925b: 21, 1926a: 218, 1931: 80–81; Stark 1952: 414; Stierlin 1898: 445; Teplouchow 1890: 263; Wachtl 1894: 8; Weber, L. 1912: 30; Yin, Huang, & Li 1984: 140; Zetterstedt 1840: 193. (**ms**) Escherich 1932b; Gotz 1877; Hartig 1834: 108; Heinemann 1908a; Kozikowsky 1929: 254; Sedlaczek 1913: 455; Weber, L. 1912: 30.

nigritus Gyllenhal 1827: 623 (*Bostrichus*). Syntypes, sex?; Europa; Gyllenhal Collection. Synonymy: Hagedorn 1910d: 59, Balachowsky 1949a: 272.

References: (**cn**) Elfving 1904. (**hb**) Dombrowsky 1892; Elfving 1904; Wachtl 1876a: 455. (**ds**) Andersch 1851; Atkinson 1921; Blanchere & Robert 1889; Brancsik 1871; Ericson & Sandin 1893; Fowler 1891; Fuss 1874; Gemminger & Harold 1872: 2691; Gredler 1866: 374; Hallett 1923b; Heyden 1876: 300; Kraatz 1869: 59; Leder 1871: 131; Lentz 1857: 139; Lindemann 1884b: 264; Miller 1868: 27; Poppius 1900: 108; Rye 1874: 205; Sahlberg 1900: 105; Schaum 1859: 96, 1862: 101; Schilsky 1909: 188; Schiodte 1873: 102; Seidlitz 1872: 396, 1891a: 566, 1891b: 612; Sharp 1870: 256;

Sharp & Fowler 1893: 35; Siebke 1875: 284; Stein 1868: 114; Stein & Weise 1877: 165; Sturm 1843: 230; Thomson 1865: 364, 1868: 222; Wachtl 1876a: 455. (**tx**) Balachowsky 1949a: 272; Bertolini 1872; Brancsik 1871; Dombrowsky 1892; Ferrari 1867: 43; Gyllenhal 1827: 623; Letzner 1891: 376; Sahlberg 1836: 147; Seidlitz 1872: 396, 1891a: 566, 1891b: 612; Thomson 1865: 364, 1868: 222. (**ms**) Hartig 1834: 108.

***tosaensis* (Murayama)** 1950a: 52 (*Ips*). Syntypes, sex?; Irinohama, Okata-mura, Hata-gun; Murayama Collection in USNM, Washington.
Figures: Nobuchi 1966d:pl. 5, 1974:pl. 1, 3.
Distribution: Asia (Japan/ Korea).
Hosts: *Pinus densiflora, P. thunbergii*.
References: (**en**) Murayama 1954a: 9; Oda, Kato, & Nobuchi 1964. (**hb**) Nagawasa et al. 1968. (**ds**) Ko 1969: 279; Murayama 1949a: 13, 1951c: 4, 1952a: 20, 1953: 34, 1954a: 9, 1954b: 171, 1955: 102–103; Nobuchi 1966d: 36, 1974: 48. (**tx**) Murayama 1950a: 53, 1952a: 20, 1954b: 171, 1955: 102; Nobuchi 1959b: 14, 1966d: 36, pl. 5, 1974: 48, pl. 1, 3.

Genus *Acanthotomicus* Blandford

ACANTHOTOMICUS BLANDFORD 1894d: 89. Type-species: *Acanthotomicus spinosus* Blandford, monobasic.

Mimips Eggers 1932c: 33. Type-species: *Ips pilosus* Eggers, original designation. Synonymy: Wood 1972c: 191.
References: (**tx**) Eggers 1932c: 33; Schedl 1952g: 51, 1954b: 37, 1957e: 865–883, 1962j: 71, 1962k: 595–1352, 1965e: 349–379; Wood, S. L. 1972c: 191.

Isophthorus Schedl 1938a: 173. Type-species: *Isophthorus quadrituberculatus* Schedl, subsequent designation by Wood 1980: 89. Synonymy: Wood 1980: 89.
References: (**tx**) Schedl 1938a: 160–166, 173; Wood, S. L. 1980c: 89.

Keys: Wood 1982b: 664 for Central America.
References: (**ay**) Nobuchi 1969a: 66. (**hb**) Wood, S. L. 1986a: 70. (**ds**) Schedl 1966b: 42; Wood, S. L. 1986a: 70. (**tx**) Blandford 1894d: 89; Browne 1963: 54; Nobuchi 1974: 53; Wood, S. L. 1972c: 191, 1982b: 664–667, 1986: 70.

***acuminatus* (Schedl)** 1962j: 71 (*Mimips*). Holotype, sex?; Ghana, Kumasi; BMNH, London.
Distribution: Africa (Ghana).
Hosts: *Albizzia gummifera*.
References: (**ds**) Schedl 1962h: 59, 1962j: 71, 1966c: 225, 1972e: 282. (**tx**) Browne 1970: 559; Eggers 1932c: 33; Schedl 1962j: 71, 1962k: 1086, 1979c: 11.

***africanus* (Browne)** 1970: 560 (*Orthotomicus*). Holotype ♀; Nigeria: Mambilla Plateau, Gyel Nyaki at 5000 ft.; BMNH, London.
Figures: Browne 1970: 561.
Distribution: Africa (Nigeria).
References: (**tx**) Browne 1970: 560–561.

***alternans* (Schedl)** 1974c: 262 (*Ips*). Holotype ♂?; Nord-Vietnam; Muzeul de Istorie Naturala, Bucharest.
Distribution: Asia (Vietnam).
References: (**tx**) Schedl 1974c: 262, 1979c: 17.

***amatus* Schedl** 1954c: 156. Holotype, sex?; Borneo; Eggers Collection, in NHMW, Wien.
Distribution: Indonesia (Borneo).
References: (**tx**) Schedl 1954c: 156, 1979c: 26.

***analogus* (Wood)** 1971: 40 (*Mimips*). Holotype ♂; 40 km E Canton, Barinas, Venezuela; Wood Collection.
Figures: Wood, S. L. 1971: 40 (male declivity).
Distribution: South America (Venezuela).
Hosts: *Spondias mombin*.
References: (**hb**) Wood, S. L. 1971: 40. (**tx**) Wood, S. L. 1971: 40, 1982b: 666.

***angolensis* (Schedl)** 1962k: 1086 (*Mimips*). Holotype, sex?; Angola; Schedl Collection in NHMW, Wien.
Distribution: Africa (Angola).
References: (**tx**) Schedl 1962k: 1086, 1979c: 20.

***angulatus* (Schedl)** 1962k: 1087 (*Mimips*). Holotype, sex?; Kamerun; Schedl Collection in NHMW, Wien.
Distribution: Africa (Cameroon).
References: (**tx**) Eggers 1941c: 143; Schedl 1962k: 1087, 1967e: 214, 1979c: 20.

***angylocalyx* (Schedl)** 1957d: 75 (*Mimips*). Holotype ♂; Congo Belge: Yangambi; MRCB, Tervuren.
Figures: Schedl 1962j: 72.
Distribution: Africa (Zaire).
Hosts: *Angylocalyx pynaertii*.
References: (**ec**) Schedl 1958d: 187, 190, 1962j: 72. (**hb**) Schedl 1962j: 72. (**ds**) Schedl 1962j: 72, 1967e: 214. (**tx**) Schedl 1957d: 75, 1957e: 877, 1962j: 72.

***apicalis* (Schedl)** 1977f: 501 (*Ips*). Holotype ♀?; Sumatra: Bandar Baroe; Schedl Collection in NHMW, Wien.
Distribution: Indonesia (Sumatra).
References: (**tx**) Schedl 1977f: 501.

***artocarpi* (Browne)** 1955: 347 (*Ips*). Holotype ♂; Malay Peninsula: Kelantan, Jeram; BMNH, London.
Distribution: Asia (Malaysia).
Hosts: *Artocarpus elasticus*.
Notes: (1) Browne 1963c: 54 (to *Acanthotomicus*).
References: (**hb**) Browne 1961c: 82. (**ds**) Browne 1955: 347, 1961c: 82, 1963c: 54. (**tx**) Browne 1955: 347.

***ashantius* (Schedl)** 1977d: 284 (*Mimips*). Holotype, sex?; Ghana: Ashanti Region, Kwadaso, 259 m, N 6 degrees 42′, W 1 degree 39′; NHMB, Budapest.

Distribution: Africa (Ghana).
References: (**tx**) Schedl 1977d: 284.

***australis* (Schedl)** 1972a: 147 (*Ips*). Holotype ♂: Queensland, Imbil; Queensland Museum, Brisbane.
Distribution: Australia (Queensland).
Hosts: *Ficus macrophylla*.
References: (**tx**) Schedl 1972a: 147, 1979c: 31.

***bicaudatus* (Eggers)** 1927c: 80 (*Ips*). Lectotype ♂; Philippinen: Basilan; USNM, Washington, designated by Anderson & Anderson 1971: 6.
Distribution: Philippine Islands.
Hosts: Apitong log.
References: (**ds**) Schedl 1938g: 425–426, 1966b: 42, 1966g: 30. (**tx**) Anderson, W. H. & Anderson 1971: 6; Eggers 1927c: 80; Schedl 1962c: 192, 1979c: 37.

***biconicus* (Schedl)** 1938h: 460 (*Myeloborus*). Holotype ♂; Kongo; Schedl Collection in NHMW, Wien.
Figures: Nunberg 1961a: 341, 345.
Distribution: Africa (Angola/ Equatorial Guinea/ Ghana/ Ivory Coast/ Nigeria/ Uganda/ Zaire).
Hosts: *Albizzia gummifera, Millettia* spp., *Motandra guineensis*.
Notes: (3) Schedl 1957d: 74 (described female), 1938a: 173 (treated in *Myeloborus*), 1959p: 18 (treated in *Isophthorus*).
References: (**ec**) Schedl 1962j: 74. (**hb**) Schedl 1962j: 74. (**ds**) Ferreira 1965: 1118; Roberts 1969: 125; Schedl 1959p: 18, 1962h: 59, 1962j: 74, 1964e: 68, 1966c: 225, 1967e: 214, 1972e: 280, 1975h: 351, 1977d: 278, 1982: 281. (**tx**) Schedl 1938a: 173, 1938h: 460, 1957d: 15, 74, 1959p: 18, 1961m: 86, 1962j: 74, 1962k: 1088, 1962r: 97, 1979c: 39.

confusus Eggers 1941d: 179 (*Mimips*). Holotype, sex?; Fernando Poo (Spanisch-Guinea); IPKE, Eberswalde. Synonymy: Schedl 1961m: 86.
References: (**tx**) Eggers 1941d: 179; Schedl 1961m: 86, 1962j: 74.

cavifrons Nunberg 1961: 342 (*Mimips*). Holotype ♂; Tshuapa: Bamania; MRCB, Tervuren. Synonymy: Schedl 1962r: 97.
References: (**hb**) Roberts 1969: 125. (**tx**) Browne 1963b: 245; Nunberg 1961a: 341–342, 345; Schedl 1962k: 1088, 1962r: 97.

***bidens* (Schedl)** 1967g: 229 (*Mimips*). Holotype ♂; Sibiti IRHO rain forest; NHMB, Budapest.
Distribution: Africa (Zaire).
References: (**tx**) Schedl 1967g: 229, 1979c: 39.

***bidentatus* (Schedl)** 1957e: 876 (*Mimips*). Holotype, sex?; Kenya: Mukutano; BMNH, London.
Distribution: Africa (Kenya).
Hosts: *Rhus* sp.
References: (**ds**) Schedl 1962j: 77. (**tx**) Schedl 1957e: 876, 1962j: 77, 1979c: 39.

***bidentis* Wood** 1972e: 191. Holotype ♂; 8 km S Colonia (near Buenaventura), Valle de Cauca, Colombia; Wood Collection, automatic.
Figures: Wood 1971: 41 (male declivity).
Distribution: South America (Colombia).
Hosts: *Icica altisima*.
References: (**tx**) McNamara 1977: 196; Wood, S. L. 1972e: 191.

bidens Wood 1971: 41 (*Mimips*). Holotype ♂; 8 km S Colonia (near Buenaventura), Valle de Cauca, Colombia, Wood Collection, preoccupied by Schedl 1967.
References: (**tx**) Wood, S. L. 1971: 41, 1972e: 191.

***bispinosus* (Eggers)** 1927c: 78 (*Ips*). Lectotype ♂; Philippinen: Mindoro, Mangarin; USNM, Washington, designated by Anderson & Anderson 1971: 6.
Distribution: Philippine Islands (Mindoro).
References: (**ds**) Schedl 1966b: 42. (**tx**) Anderson, W. H. & Anderson 1971: 6; Eggers 1927c: 78; Schedl 1955b: 295, 1979c: 41.

***bolivianus* (Eggers)** 1943a: 357 (*Isophthorus*). Holotype, sex?; Bolivia (Cochabamba); Eggers Collection, in NHMW, Wien.
Distribution: South America (Bolivia).
References: (**tx**) Eggers 1943a: 357, 1979c: 43.

***borneensis* Schedl** 1964g: 245. Holotype, sex?; Borneo; Schedl Collection in NHMW, Wien.
Distribution: Indonesia (Borneo).
References: (**tx**) Schedl 1964g: 245, 1979c: 43.

***brasiliensis* (Schedl)** 1976a: 72 (*Mimips*). Holotype, sex?; Ter. Ampara, Rio Felicio; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1976a: 72.

***caelatus* (Schedl)** 1964f: 620 (*Mimips*). Holotype, sex?; Cameroun: N'Kongsamba; MNHN, Paris.
Distribution: Africa (Cameroon).
Hosts: *Canarium schweinfurthii*.
References: (**ds**) Menier 1973a; Schedl 1966c: 225, 1967e: 214. (**tx**) Schedl 1964f: 620, 1979c: 49.

***camerunus* (Eggers)** 1944b: 95 (*Mimips*). Holotype ♂; Kamerun, Misselle am Kamerunberg; Hamburg Museum, lost.
Distribution: Africa (Cameroon).
References: (**tx**) Eggers 1944b: 95; Schedl 1962j: 77.

***caudatulus* (Schedl)** 1962b: 192 (*Ips*). Holotype ♂; Indochina: Reg. de Hoa-Benh; MNHN, Paris.
Distribution: Asia (Vietnam).
References: (**ds**) Schedl 1962b: 192, 1974c: 262, 1979c: 54.

***caudatus* (Browne)** 1970: 559 (*Mimips*). Holotype ♂; Rhodesia: Matopo Hills, Maleme Dam; BMNH, London.
Distribution: Africa (Zimbabwe).
References: (**tx**) Browne 1970: 559.

***celtis* (Schedl)** 1955b: 295 (*Ips*). Holotype, sex?; Neu Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1955b: 280, 295, 1979c: 55.

***chiriquensis* (Blandford)** 1898b: 189 (*Xylocleptes*). Lectotype ♂; Volcan de Chiriqui, Panama; BMNH, London, designated by Wood 1966b: 24.
Distribution: North America (Panama).
Notes: (1) Wood 1982b: 667 (to *Acanthotomicus*).
References: (**ds**) Hagedorn 1910d: 62; Kleine 1913b: 132, 362; Wood, S. L. 1982b: 667. (**tx**) Blandford 1898b: 189; Hagedorn 1910a: 107; Wood, S. L. 1966b: 24, 1982b: 667.

***ciliatus* (Hagedorn)** 1909a: 743 (*Poecilips*). Holotype, sex?; Deutsch-Ostafrika, Amani; Hamburg Museum, lost.
Distribution: Africa (Tanzania).
Notes: (1) Eggers 1932c: 33 (to *Mimips*, = *Acanthotomicus*).
References: (**ds**) Hagedorn 1910d: 77; Kleine 1913b: 145, 1914b: 322. (**tx**) Eggers 1932c: 33; Hagedorn 1909a: 743–744, 1910a: 112; Schedl 1962j: 78.

***congonus* (Eggers)** 1932c: 33 (*Mimips*). Holotype ♀; Congostaat (Haut-Uele: Yebo-Tara); MRCB, Tervuren.
Distribution: Africa (Tanzania/ Zaire).
References: (**ec**) Vitzthum 1923: 181. (**ds**) Hagedorn 1910d: 77. (**tx**) Eggers 1932c: 33; Hagedorn 1910a: 112; Schedl 1948c: 664, 1962j: 78.

***congruens* (Schedl)** 1962k: 1089 (*Mimips*). Holotype ♀; Congo: Rutshuru-Falls; MRCB, Tervuren.
Distribution: Africa (Zaire).
Hosts: Liana.
References: (**tx**) Schedl 1962k: 1089, 1979c: 63.

***conjunctus* (Schedl)** 1962h: 70 (*Mimips*). Holotype, sex?; Ghana, Kumasi; BMNH, London.
Distribution: Africa (Ghana).
References: (**ds**) Schedl 1962h: 59. (**tx**) Schedl 1962h: 70, 1962j: 78–79, 1962k: 1090, 1979c: 63.

***craterigerus* (Nunberg)** 1961: 621 (*Orthotomicus*). Holotype ♂; New Ireland, Namatanai; BMNH, London.
Figures: Nunberg 1961b: 631.
Distribution: New Ireland Island.
Notes: (1) Browne 1970: 560 (to *Acanthotomicus*).
References: (**tx**) Browne 1970: 560; Nunberg 1961b: 621, 631; Schedl 1962n: 699.

***curvidens* (Schedl)** 1955f: 258, 262 (*Brachydendrulus*). Holotype, sex?; Ruanda: Terr. Astrida, Rutovu, gite d'etape dans la foret du Rugege, Foret de montagne ombrophile; MRCB, Tervuren.
Distribution: Africa (Ruanda/ Zaire).
Hosts: *Hagenia* sp., *Podocarpus* sp.
References: (**ds**) Schedl 1962j: 79. (**tx**) Schedl 1955f: 258, 262, 1962j: 79, 1979c: 72.

***dentatus* Schedl** 1954a: 149. Holotype ♀; apparently Java: Dapok; Schedl Collection in NHMW, Wien.
Distribution: Indonesia (Java).
References: (**tx**) Schedl 1954a: 144, 149, 1979c: 77.

***denticulus* (Eggers)** 1923: 163 (*Ips*). Lectotype, sex?; Neu Guinea; Eggers Collection, in NHMW, Wien, designated by Schedl 1979c: 78.
Distribution: New Guinea.
References: (**tx**) Eggers 1923: 163; Schedl 1979c: 78.

***duplicatus* (Schedl)** 1973d: 170 (*Mimips*). Holotype ♂; Brasilien: Mato Grosso, Utiariti, 325 m, Rio Papagaio; MZUSP, Sao Paulo.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1973d: 170, 1979c: 85.

***elongatus* (Schedl)** 1961m: 86 (*Mimips*). Holotype, sex?; Cote d'Ivoire, foret du Banco; MNHN, Paris.
Distribution: Africa (Ghana/ Ivory Coast).
Hosts: *Canarium schweinfurthii*.
References: (**ds**) Schedl 1964e: 68, 1972e: 282. (**tx**) Schedl 1961m: 86, 1962j: 79, 1979c: 89.

***emarginatus* Browne** 1985a: 191. Holotype ♂; Bonyosmiaf (Halmahera), Moluccas to Nagoya (Japan), imported; Schedl Collection in NHMW, Wien.
Distribution: Moluccas Islands.
Hosts: *Anisoptera* sp.
References: (**ds**) Ohno, Yoneyama, & Narazawa 1987: 93. (**tx**) Browne 1985a: 191.

***euphorbiae* (Schedl)** 1957d: 76 (*Mimips*). Holotype, sex?; Ruanda: Kisenyi; MRCB, Tervuren.
Distribution: Africa (Ruanda/ Uganda/ Zaire).
Hosts: *Cassia* sp., *Euphorbia tirucalli*.
References: (**ds**) Gardner 1957a; Schedl 1962h: 59, 1962j: 80, 1962k: 1090, 1967e: 215. (**tx**) Schedl 1955i: 212, 1957d: 76, 1962j: 80, 1970i: 223, 1979c: 92.

atratus Browne 1965: 197 (*Mimips*). Holotype ♂; Uganda: Zika; BMNH, London. Synonymy: Schedl 1970i: 223.
References: (**tx**) Browne 1965: 197; Schedl 1970i: 223.

***excavatus* (Schedl)** 1962k: 1090 (*Mimips*). Holotype ♂; Congo: Kivu; Schedl Collection in NHMW, Wien.
Distribution: Africa (Zaire).
References: (**tx**) Schedl 1962k: 1090, 1979c: 93.

***eximius* (Schedl)** 1955b: 296 (*Ips*). Holotype, sex?; Neu-Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1955b: 280, 296, 1979c: 94.

***fallaciosus* (Schedl)** 1962k: 1091 (*Mimips*). Holotype ♀; Cote d'Ivoire: Foret du Banco; MNHN, Paris.

Distribution: Africa (Ivory Coast).
References: (**ds**) Schedl 1962k: 1091, 1964c: 68. (**tx**) Schedl 1962k: 1091, 1979c: 95.

***fici* Browne** 1984: 154. Holotype, sex?; Amazon (Papua New Guinea) to Nagoya [Japan], imported; BMNH, London.
Distribution: New Guinea.
Hosts: *Ficus* sp.
References: (**ds**) Ohno et al. 1989: 60. (**tx**) Browne 1984: 154.

***fortis* (Wood)** 1971: 40 (*Mimips*). Holotype ♂; Finca Taboga, 15 km SW Canas, Guanacaste, Costa Rica; Wood Collection.
Figures: Wood 1971: 40.
Distribution: North America (Costa Rica/ Panama).
Hosts: *Spondias mombin*.
References: (**hb**) Wood, S. L. 1982b: 666. (**ds**) Wood, S. L. 1982b: 666. (**tx**) Wood, S. L. 1971: 40, 1982b: 666.

***gracilis* (Schedl)** 1966c: 236 (*Mimips*). Holotype, sex?; Republique du Congo; MNHN, Paris.
Distribution: Africa (Zaire).
References: (**tx**) Schedl 1966c: 236, 1979c: 108.

***grandis* Browne** 1986c: 664. Holotype ♂; New Guinea: Amazon to Nagoya (Japan), imported; BMNH, London.
Distribution: New Guinea.
Hosts: *Ficus* sp. log.
References: (**tx**) Browne 1986c: 664.

***granulatus* (Ferrari)** 1867a: 40 (*Xylocleptes*). Lectotype ♂; Venezuela, Moritz [presumably Colonia Tovar]; NHMW, Wien, designated by Wood 1974d: 277.
Figures: Wood 1971: 42.
Distribution: South America (Venezuela).
Hosts: Liana.
References: (**ds**) Gemminger & Harold 1872: 2693; Hagedorn 1910d: 62; Kleine 1913b: 132, 1914b: 339. (**tx**) Ferrari 1867a: 40; Hagedorn 1910a: 107; Wood, S. L. 1974d: 277.
uncinatus Wood 1971: 41 (*Mimips*). Holotype ♂; Colonia Tovar, Aragua, Venezuela; Wood Collection. Synonymy: Wood 1974d: 277.
References: (**tx**) Wood, S. L. 1971: 41–42, 1974d: 277.

***harongae* (Schedl)** 1954d: 882 (*Ips*). Syntypes ♂ ♀; Cote d'Ivoire, Adiopodoume; MNHN, Paris and Schedl Collection in NHMW, Wien.
Distribution: Africa (Ghana/ Ivory Coast).
Hosts: *Haronga paniculata*.
Notes: (1) Schedl 1962j: 80 (to *Mimips, =Acanthotomicus*).
References: (**ds**) Schedl 1962j: 80, 1966c: 226, 1967e: 215, 1972e: 282. (**tx**) Schedl 1954d: 871, 882, 1957b: 157, 1962j: 80, 1979c: 115.

***immunitis* (Browne)** 1965: 200 (*Mimips*). Holotype, sex?; Ivory Coast: Adiopodoume; BMNH, London.
Distribution: Africa (Ivory Coast).
References: (**tx**) Browne 1965: 200.

***inclinans* (Schedl)** 1972h: 51 (*Ips*). Holotype ♂; New Guinea (NW), Bodem, 100 m, 11 km SE Oerberfaren; BPBM, Honolulu.
Distribution: New Guinea.
References: (**tx**) Schedl 1972h: 51, 1979c: 123.

***insularis* (Eggers)** 1923: 164 (*Ips*). Lectotype ♂; Key Inseln; USNM, Washington, designated by Anderson & Anderson 1971: 15.
Distribution: Indonesia (Key Island).
References: (**tx**) Anderson, W. H. & Anderson 1971: 15; Eggers 1923: 164, 1927c: 78; Schedl 1979c: 125.

***ipsiformus* Wood** 1985: 270. Holotype ♂; Santa Rosa National Park, Guanacaste, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: *Spondias mombin*.
References: (**tx**) Wood, S. L. 1985: 270.

***katangensis* (Eggers)** 1932c: 34 (*Mimips*). Holotype ♀; Congostaat (Katanga: Lubombo); MRCB, Tervuren.
Distribution: Africa (Tanzania/ Uganda/ Zaire).
Hosts: Liana.
References: (**hb**) Schedl 1962j: 81. (**ds**) Nunberg 1961a: 332; Schedl 1962h: 59, 1962j: 81, 1962k: 1092. (**tx**) Eggers 1932c: 34; Schedl 1962j: 81, 1962k: 1092, 1979c: 131.

***kelantanensis* (Browne)** 1955: 345 (*Ips*). Holotype ♂; Malay Peninsula: Kelantan, Pulai Chondong; BMNH, London.
Distribution: Asia (Malaya).
References: (**ds**) Browne 1955: 345, 1961c: 82.

***kepongi* (Schedl)** 1942a: 181 (*Ips*). Holotype, sex?; Malaya, Selangor, Kepong; Schedl Collection in NHMW, Wien.
Distribution: Asia (Malaya/ Vietnam).
Hosts: *Artocarpus kunstleri*, *Ficus* sp.
References: (**ds**) Browne 1961c: 82; Schedl 1969a: 206. (**tx**) Schedl 1942a: 181, 1979c: 132.

***kivuensis* (Schedl)** 1957d: 74 (*Mimips*). Holotype ♂; Congo Belge: Kivu, Hembe-Bitale; MRCB, Tervuren.
Distribution: Africa (Zaire).
Hosts: *Haronga peniculata*.
References: (**ec**) Schedl 1962j: 82. (**hb**) Schedl 1962j: 82. (**ds**) Schedl 1962j: 82. (**tx**) Schedl 1957d: 74, 1962j: 82.

***lefevrei* (Browne)** 1973: 292 (*Mimips*). Holotype ♂; Zaire: Mweka; MRCB, Tervuren.
Distribution: Africa (Zaire).
References: (**tx**) Browne 1973: 292.

***lepidus* (Wichmann)** 1914c: 138 (*Pityogenes*). Holotype ♂; Dimbroko, Cote d'Ivoire; NHMW, Wien.
Distribution: Africa (Ivory Coast).
Notes: (1) Schedl 1954: 871 (to *Mimips*, =*Acanthotomicus*).
References: (**ds**) Kleine 1914b: 309. (**tx**) Schedl 1954d: 871, 1957d: 15, 1962j: 84; Wichmann 1914c: 138.

***major* (Schedl)** 1964f: 621 (*Mimips*). Holotype ♀; Cameroun, N'Kongsamba; MNHN, Paris.
Distribution: Africa (Cameroon).
References: (**tx**) Schedl 1964f: 621, 1979c: 146.

***medius* (Eggers)** 1943e: 75 (*Mimips*). Holotype ♂; Mozambique (Canxixe); MNHN, Paris.
Distribution: Africa (Kenya/ Mozambique/ South Africa/ Tanzania/ Zaire).
References: (**ds**) Browne 1975a: 758; Nunberg 1961a: 332; Schedl 1962j: 85, 1962k: 1092, 1965e: 353, 1977c: 394. (**tx**) Eggers 1943e: 75, 1944b: 93; Schedl 1948c: 664, 1950d: 8, 1962j: 85, 1962k: 1092, 1964j: 47, 1979c: 150.

***mimicus* (Schedl)** 1961i: 227 (*Mimips*). Holotype ♂; Costa Rica: Turrialba; Schedl Collection in NHMW, Wien.
Figures: Bright 1972d: 59, Wood 1971: 39.
Distribution: Antilles Islands (Dominican Republic in Hispanola/ Jamaica), North America (Costa Rica/ Veracruz in Mexico/ Panama), South America (Brazil/ Venezuela).
Hosts: *Spondias mombin*.
References: (**hb**) Wood, S. L. 1982b: 665. (**ds**) Bright 1972d: 69, 1981c: 152, 1985c: 173; Browne 1970: 541; Estrada & Atkinson 1988: 206; Schedl 1960d: 75; Wood, S. L. 1982b: 665. (**tx**) Bright 1972d: 59, 69, 1985c: 173; Browne 1970: 541; Schedl 1961i: 227; Wood, S. L. 1971: 39, 1979c: 153, 1982b: 665.

***octodentatus* Browne** 1984: 153. Holotype ♂; Niah (Sarawak) to Nagoya (Japan), imported; BMNH, London.
Distribution: Indonesia (Borneo).
Hosts: Medang log.
References: (**tx**) Browne 1984: 153.

***octospinosus* (Schedl)** 1957e: 877 (*Mimips*). Holotype ♂; Tanganyika: Gologolo; BMNH, London.
Distribution: Africa (Tanzania).
Hosts: *Cussonia* sp.
References: (**ds**) Schedl 1962j: 85. (**tx**) Schedl 1957e: 877, 1962j: 85, 1979c: 177.

***ocularis* (Wood)** 1971: 42 (*Mimips*). Holotype ♂; 8 km S Colonia (near Buenaventura), Valle de Cauca, Colombia; Wood Collection.
Figures: Wood 1971: 42.
Distribution: South America (Colombia).
Hosts: *Icica altisima*.
References: (**tx**) Wood, S. L. 1971: 42.

***onerosus* (Schedl)** 1942a: 180 (*Ips*). Lectotype ♀; Malaya, Selangor; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 178.
Distribution: Asia (Malaya).
Hosts: *Alatonia spathulata*.
References: (**hb**) Browne 1938a. (**ds**) Browne 1938a, 1949b. (**tx**) Browne 1949b; Schedl 1942a: 180, 1979c: 178.

***pachylobius* (Schedl)** 1965e: 371 (*Mimips*). Holotype, sex?; Congo ex belge; Schedl Collection in NHMW, Wien.
Distribution: Africa (Zaire).
Hosts: *Pachylobius pubescens* (=*Dacryodes buetneri*).
References: (**tx**) Schedl 1965e: 371, 1979c: 182.

***parcius* (Schedl)** 1977f: 502 (*Ips*). Holotype sex?; Malaya: Kepong; Schedl Collection in NHMW, Wien.
Distribution: Asia (Malaya).
References: (**tx**) Schedl 1977f: 502.

***peregrinus* (Schedl)** 1939e: 350 (*Ips*). Lectotype ♂; Malaya, Selangor: Sungei Bulch For. Res.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 189.
Distribution: Asia (Malaya/ Thailand).
Hosts: Burseraceae sp.
Notes: (3) Browne 1955: 346 (described male).
References: (**hb**) Browne 1938a. (**ds**) Browne 1938a, 1950g: 895, 1955: 345–346, 1961c: 82, 1986a: 89. (**tx**) Browne 1955: 345–346, 1961: 82–83, 1963: 54; Schedl 1939e: 350, 1979c: 189.

***perexiguus* (Blandford)** 1896b: 201 (*Tomicus*). Syntypes 2, ♂ ♀; Damma I.; BMNH, London.
Distribution: Asia (Malaya/ Thailand/ Vietnam), Indonesia (Damma Island, Java, Sumatra), New Guinea, Philippine Islands.
Hosts: *Ficus religiosa*, *F.* spp., *Ceiba pentandra*.
References: (**hb**) Kalshoven 1958b: 173. (**ds**) Beaver 1990a: 279; Beaver & Browne 1975: 287; Browne 1966: 245, 1980d: 491, 1984a: 151, 1984b: 286; Hagedorn 1910d: 56; Kalshoven 1968: 173; Kleine 1913b: 128, 1914b: 280; Ohno et al. 1989: 60; Schedl 1937f: 15, 1961c: 70, 1965a: 340, 1965g: 22, 1966b: 43, 1969a: 205. (**tx**) Blandford 1896b: 201; Eggers 1927c: 78; Hagedorn 1910a: 105; Schedl 1939e: 350, 1942a: 170, 1942d: 4, 1953b: 24, 1965g: 22.

philippinensis Eggers 1927c: 78 (*Ips*). Lectotype, sex?; Philippinen: Mindanao, Provinz Lanao, Momungan; USNM, Washington, designated by Anderson & Anderson 1971: 25. Synonymy: Schedl 1942d: 4.
References: (**tx**) Anderson, W. H. & Anderson 1971: 25; Eggers 1927c: 78; Schedl 1939e: 350, 1942d: 4, 1979c: 192.

***pilosellus* (Browne)** 1965: 197 (*Mimips*). Holotype ♂; Ivory Coast: Adiopodoume; RNH, Leiden.
Figures: Nunberg 1967b: 337–338.

Distribution: Africa (Ghana/ Ivory Coast/ Uganda).

References: (**ds**) Nunberg 1967b: 324. (**tx**) Browne 1965: 197; Nunberg 1967b: 337, 338.

***pilosus* (Eggers)** 1924: 106 (*Ips*). Syntypes 5, sex?; Elisabethville; 3 in MRCB, Tervuren, 2 in USNM, Washington, 1 in Schedl Collection in NHMW, Wien.

Distribution: Africa (Angola/ Mozambique/ South Africa/ Tanzania/ Zaire/ Zambia), Madagascar.

Notes: (1) Eggers 1932c: 33 (to *Mimips*, =*Acanthotomicus*).

References: (**ds**) Beaver & Loyttyniemi 1985a: 67; Ferreira 1965: 1118; Nunberg 1961a: 332; Schedl 1959p: 18, 1962j: 86, 1962k: 1093. (**tx**) Eggers 1924: 106, 1927a: 198, 1932c: 33, 1943e: 75; Schedl 1948c: 664, 1950c: 204, 1950d: 8, 1952g: 51, 1959p: 18, 1962j: 86, 1962k: 1093, 1964j: 47, 1979c: 194.

***quadridens* (Schedl)** 1962k: 1093 (*Mimips*). Holotype, sex?; Kamerun; Schedl Collection in NHMW, Wien.

Figures: Schedl 1961k: 678.

Distribution: Africa (Cameroon).

References: (**tx**) Schedl 1961k: 678, 1962k: 1093, 1979c: 208.

***quadrispinosus* (Eggers)** 1919: 243 (*Xylocleptes*). Syntypes 2 ♀; Kamerun, Soppo 800 m und Buea 1000 m; MNB, Berlin.

Figures: Schedl 1961k: 678 (antenna).

Distribution: Africa (Cameroon).

Notes: (1) Eggers 1944b: 96 (to *Acanthotomicus*).

References: (**tx**) Eggers 1919: 243, 1944b: 96; Schedl 1961k: 678, 1962j: 86, 1962r: 95, 1964f: 620, 1979c: 208–209.

***quadrituberculatus* (Schedl)** 1938a: 173 (*Isophthorus*). Holotype, sex?; Congo; Schedl Collection in NHMW, Wien.

Distribution: Africa (Angola/ Ghana/ Ivory Coast/ Mozambique/ Uganda/ Zaire).

References: (**ds**) Ferreira 1965: 1118; Schedl 1959p: 18, 1961m: 84, 1962h: 59, 1962j: 87, 1962k: 1094, 1972e: 282. (**tx**) Schedl 1938a: 173–174, 1962j: 87, 1962k: 1094, 1979c: 209.

fallax Eggers 1943e: 76 (*Mimips*). Holotype ♀; Mozambique (Canxixe); MNHN, Paris. Synonymy: Wood 1989: 169.

References: (**tx**) Browne 1963: 246; Eggers 1943e: 76; Schedl 1962j: 87; Wood, S. L. 1989: 169.

***robertsi* (Browne)** 1965: 198 (*Mimips*). Holotype, sex?; Nigeria: Oban; BMNH, London.

Distribution: Africa (Nigeria).

References: (**hb**) Roberts 1969: 126. (**tx**) Browne 1965: 198

***sexdentatus* (Eggers)** 1944b: 96 (*Mimips*). Holotype ♂; Belgisch-Congo; USNM, Washington.

Distribution: Africa (Angola/ Cameroon/ Equatorial Guinea/ Kenya/ Nigeria/ Zaire).

Hosts: *Albizzia coriaria*, *Amphimas ferrugineus*, *Cleistopholis patens*, *Klainedoxa gabonensis*.

References: (**cn**) Mayne & Donis 1951: 332. (**ec**) Mayne & Donis 1951: 332. (**ds**) Browne 1973a: 280; Ferreira 1965: 1119; Mayne & Donis 1959: 332, 1962: 309; Menier 1973a; Schedl 1959p: 8, 18, 1962j: 87, 1964f: 618, 1965e: 35, 1967e: 215. (**tx**) Anderson, W. H. & Anderson 1971: 29; Eggers 1944b: 96; Schedl 1950d: 12, 27, 1962j: 87–88, 1979c: 227.

***sexspinosus* (Schedl)** 1942a: 181 (*Ips*). Lectotype ♂; Malaya, Selangor, Buloh F. R.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 227.

Distribution: Asia (Malaya).

Hosts: Burceraceae sp.

References: (**ds**) Browne 1961c: 83. (**tx**) Schedl 1942a: 181, 1979c: 227.

***seydeli* (Schedl)** 1965e: 372 (*Mimips*). Holotype, sex?; Congo ex belge, Elisabethville; Schedl Collection in NHMW, Wien.

Distribution: Africa (Zaire).

References: (**tx**) Schedl 1965e: 372, 1979c: 227.

***simplex* (Schedl)** 1962k: 1094 (*Mimips*). Holotype, sex?; Kamerun; Schedl Collection in NHMW, Wien.

Distribution: Africa (Cameroon).

References: (**tx**) Schedl 1962k: 1094, 1979c: 230.

***sindorae* Browne** 1981c: 600. Holotype ♂; Bangkuruang (Borneo) to Yokahama (Japan), imported; BMNH, London.

Distribution: Indonesia (Borneo).

Hosts: Sepetir log.

References: (**tx**) Browne 1981c: 600.

***spinidens* (Schedl)** 1962k: 1095 (*Mimips*). Holotype, sex?; Kamerun; Schedl Collection in NHMW, Wien.

Distribution: Africa (Cameroon).

References: (**tx**) Schedl 1934f: 1645, 1962k: 1095, 1979c: 234.

***spinosus* Blandford** 1894d: 90. Syntypes 2 ♂; Japan: Oyayama and Nikko; BMNH, London.

Figures: Nakane et al. 1963:pl. 192, Nobuchi 1974:pls. 2–3.

Distribution: Asia (Japan).

Hosts: *Quercus myrsinsefolia*.

References: (**cn**) Anonymous 1980g. (**ds**) Anonymous 1980g; Blandford 1894c: 579; Browne 1981a: 125; Hagedorn 1910d: 62; Kleine 1913b: 132, 1914b: 258; Murayama 1936a: 129, 1954b: 201, 1955: 99; Nakane et al. 1963: 383; Nobuchi 1974: 54. (**tx**) Blandford 1894d: 90–91; Hagedorn 1910a: 107; Hopkins 1914: 116; Lucas 1920: 69; Murayama 1934c: 299, 1936a: 129, 1939: 140, 1954b: 201, 1955: 99; Nakane et al. 1963: 383, pl. 192; Nobuchi 1959b: 14, 1974: 54, pl. 2–3; Strohmeyer 1908b: 70. (**ms**) Lucas 1920: 69.

***subimmunitus* (Schedl)** 1964j: 47 (*Mimips*). Holotype, sex?; Ghana: Kumasi; BMNH, London.
Distribution: Africa (Ghana).
Hosts: *Terminalia ivorensis*.
References: (**ds**) Schedl 1962j: 88. (**tx**) Schedl 1962j: 88, 1964j: 47, 1979c: 242.

***sumatranus* Strohmeyer** 1908b: 69. Holotype ♂; Sumatra insula (Palembang); IPKE, Eberswalde.
Distribution: Indonesia (Java, Sumatra).
References: (**hb**) Kalshoven 1958b: 173. (**ds**) Hagedorn 1910d: 62; Kleine 1913b: 132, 1914b: 285. (**tx**) Hagedorn 1910a: 107; Kalshoven 1959b: 94, 1960d; Schedl 1942d: 25; Strohmeyer 1908b: 69–70.
latedeclivis Schedl 1942d: 25 (*Ips*). Syntypes, sex?; Java, Djember; Kalshoven Collection and Schedl Collection in NHMW, Wien. Synonymy: Kalshoven 1958: 173.
Notes: (1) Schedl 1979c: 136 (citation of holotype invalid).
References: (**tx**) Kalshoven 1958: 173; Schedl 1942d: 25, 1979c: 136.

***suspectus* (Schedl)** 1965e: 373 (*Mimips*). Holotype, sex?; Congo ex belge—Mulungu; Schedl Collection in NHMW, Wien.
Distribution: Africa (Zaire).
References: (**tx**) Schedl 1965e: 373, 1979c: 247.

***sutirifer* (Schedl)** 1965f: 11 (*Mimips*). Holotype, sex?; Uganda, Mpanga; BMNH, London.
Distribution: Africa (Uganda).
References: (**hb**) Roberts 1969: 126. (**tx**) Schedl 1962j: 88, 1965f: 11.

***tanganyikaensis* (Schedl)** 1957b: 157 (*Ips*). Syntypes, sex?; Tanganyika, Ngorongoro; BMNH, London, and Schedl Collection in NHMW, Wien.
Distribution: Africa (Angola/ Kenya/ Tanzania/ Zaire).
Hosts: *Bersama abyssinica, Ricinus communis*.
Notes: (3) Browne 1965a: 196 (described female).
References: (**ds**) Schedl 1959p: 18, 1962j: 89, 1962k: 1096. (**tx**) Browne 1965a: 196; Schedl 1957b: 152, 157–158, 1959p: 18, 1959q: 705, 1962j: 89, 1962k: 1096, 1979c: 249.

***tenuis* (Schedl)** 1966c: 237 (*Mimips*). Holotype ♂; Republique du Congo, Dimonika; MNHN, Paris.
Distribution: Africa (Congo).
References: (**tx**) Schedl 1966c: 237, 1979c: 251.

***tridens* (Schedl)** 1967e: 230 (*Mimips*). Holotype ♂; Bouenza cataract; NHMB, Budapest.
Distribution: Africa (Zaire).
References: (**tx**) Schedl 1967e: 230, 1979c: 255.

***tridentatus* (Schedl)** 1977d: 284 (*Mimips*). Holotype ♂; Brazzaville, Orstom Park; NHMB, Budapest.
Distribution: Africa (Congo).
References: (**tx**) Schedl 1977d: 284.

***tropicus* (Schedl)** 1936j: 25 (*Orthotomicus*). Lectotype ♂; Malay Peninsula, Pahang: Rotan Tunggal Forest Reserve; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 256.
Distribution: Asia (Malaya).
Hosts: *Shorea* spp.
Notes: (1) Browne 1963c: 54 (to *Acanthotomicus*).
References: (**ds**) Browne 1961c: 83, 1980a: 371; Schedl 1936j: 25. (**tx**) Browne 1963c: 54; Schedl 1936j: 25–26, 1939e: 350, 1979c: 256.

***tuberculatus* (Eggers)** 1927c: 79 (*Ips*). Lectotype ♂; Philippinen: Mindoro, Mangarin; USNM, Washington, designated by Anderson & Anderson 1971: 35.
Distribution: Philippine Islands.
References: (**ds**) Schedl 1966b: 42. (**tx**) Anderson, W. H. & Anderson 1971: 35; Eggers 1927c: 79, 1933g: 18; Schedl 1942d: 25, 1951i: 50, 1954e: 165, 1979c: 257.

***tuberculifer* Wood** 1988a: 31. Holotype ♂; Bouenza cataract; NHMB, Budapest, automatic.
Distribution: Africa (Zaire).
References: (**tx**) Wood, S. L. 1988a: 31.
tuberculatus Schedl 1967e: 230 (*Mimips*). Holotype ♂; Bouenza cataract; NHMB, Budapest, preoccupied by Eggers 1927.
References: (**tx**) Schedl 1942d: 25, 1951i: 50, 1967e: 230–231, 1979c: 257; Wood, S. L. 1988a: 31.

***uncus* (Schedl)** 1942a: 180 (*Ips*). Lectotype ♂; Malaya, Selangor; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 260.
Distribution: Asia (Malaya).
Hosts: *Dialium* sp.
References: (**ds**) Browne 1961c: 83. (**tx**) Schedl 1942a: 180, 1979c: 260.

***uniformis* (Schedl)** 1962k: 1096 (*Mimips*). Holotype ♀; Congo: Kivu; Schedl Collection in NHMW, Wien.
Distribution: Africa (Zaire).
References: (**tx**) Schedl 1962k: 1096, 1979c: 260.

***variabilis* (Browne)** 1963: 246 (*Mimips*). Holotype ♂; Nigeria: Iddah; BMNH, London.
Distribution: Africa (Nigeria).
References: (**hb**) Roberts 1969: 126. (**tx**) Browne 1963: 246.

Genus *Ips* DeGeer

Ips DeGeer 1775: 190. Type-species: *Dermestes typographus* Linnaeus, subsequent designation by Bergroth 1884: 230.
Cumatotomicus Ferrari 1867: 44. Type-species: *Bostrichus stenographus* Duftschmidt =*Dermestes sexdentatus* Boerner. Synonymy: Hagedorn 1910d: 47.
References: (**tx**) Ferrari 1867a: 44; Hagedorn 1910d: 47; Murayama 1937: 373; Reitter 1913a: 104.
Cyrtotomicus Ferrari 1867: 44. Type-species:

Bostrichus acuminatus Gyllenhal, subsequent designation by Hopkins 1914: 120. Synonymy: Eichhoff 1878b: 254.

References: (**tx**) Eichhoff 1878b: 254; Ferrari 1867a: 44; Hopkins 1914: 120; Reitter 1913a: 104.

Keys: Hopping 1963–1965, Wood 1982b: 669 for North America, Schedl 1950a: 69 for Europe and part of Asia, Yin, Huang, & Li 1984: 127 for China, Nobuchi 1974: 49 for Japan.

References: (**ay**) Nobuchi 1969a: 65. (**bv**) Anonymous 1972w. (**cn**) Anderson 1968: 2676; Andreeva & Gorjaceva 1960: 102–107; Annand 1948: 27, 1949: 8–9; Anonymous 1983j; Aulo 1926: 56–60; Balch 1941: 1–4; Beal 1939: 1–20; Bennett et al. 1958: 1–35; Berisford, Kulman, & Pienkowski 1970: 484–490; Briegleb 1958: 15–16; Brown 1943: 1–12; Buffam & Lucht 1968: 1465–1466; Collinge 1915: 789–791; Hagle et al. 1987: 41; Hetrick 1949: 149–151; Hetrick & Moses 1953: 160–161; Hornibrook 1936: 620–622; Hunter & Davis 1963: 287–293; Keen 1949: 427–432; Kowal 1949: 476–477, 1958: 159–171; Krantz 1965: 145–153; Lexen 1939: 259–262; Mason 1969: 390–398; Massey 1969: 1–4; Matson & Hain 1985; McCambridge et al. 1958: 5–8; McGraw & Farrier 1969: 162; Nagel 1959: 1–10; Nagel, McComb, & Knight 1957: 894–898; Neel 1959: 1–2, 8; Nelson 1934: 327–353; Nieland 1943: 8–9; Nisikado & Yamauti 1933: 501–538; Pechanec 1958: 45–47; Rumbold 1931: 847–873, 1936: 418–437; Schenk 1961: 3578; Schmutzenhofer 1988a, 1988b; Skelly et al. 1988; Smith 1962: 113–116; Stephenson 1958: 210; Stolina 1969: 610–627; Udine 1958: 11–12; Weidman & Robbins 1947: 428–433; Wickman 1965: 1–14; Wilkinson et al. 1967: 185–195; Yearian & Wilkinson 1965: 25–27; Zivojinovic 1948: 65–73; Zolk 1935: 258–294, 1937: 147–172. (**ec**) Johnson, M.A., & Croteau 1987; Kielczewski & Balazy 1966: 161–163; Lindquist & Bedard 1961: 982–999; Muesebeck 1938: 281–287; Nelson 1934: 327–353. (**hb**) Chapman 1957: 3–4; Chararas & Berton 1961: 235–243; Keen 1933: 297–298; Rice 1968: 53–56; Skelly et al. 1988; Vite & Renwick 1968: 61–64; Wood, S. L. 1986a: 70. (**ds**) Parkenson 1967: 9; Schedl 1966b: 42; Scheerpeltz & Winkler 1930: 258; Tragardh 1930: 468–480; Wood, S. L. 1986a: 70; Yin, Huang, & Li 1984: 126. (**tx**) Balachowsky 1949a: 262; Barr 1969: 636–672; Beal & Massey 1945: 61, 150; Bedel 1888b: 400–401; Bergoth 1884: 230; Blackman 1922b: 77, 111–112; Blandford 1895b: 185, 188; Bright 1978: 150; Bright & Stark 1973: 83; DeGeer 1775: 190; Dodge 1938: 19, 47–48; Ganglbauer 1902: 311; Giric 1969: 44–45; Goz 1886: 31; Hetrick 1942: 181–183, 1943: 30; Hicock 1942: 622–623; Hopping, G. 1961b: 1050–1053, 1963c: 508–516, 1963d: 1091–1096, 1963e: 1202–1210, 1964b: 970–978, 1965b: 533–541, 1965c: 193–198, 1965d: 159–172, 1965e: 422–434, 1965f: 803–809; Hopping, R. 1922: 128–134, 1924: 125–128; Karaman 1972: 151; King 1967: 4606; Kostin 1973: 266; Lanier 1968: 4167, 1970a: 1404–1423, 1970b: 1139–1163, 1977: 361–388; Lanier & Cameron 1969: 862–870; Little 143: 245–246; Marsham 1802: 51; Murayama 1929: 23, 1930: 18; Nobuchi 1974: 49; Nusslin 1912: 101–107; Pfeffer 1989a: 73; Reitter 1894: 80, 1913a: 102–111; Saalas 1914: 304–305; Schedl 1950a: 67–88, 1955g: 1–48, 1958k: 145; Schmutzenhofer 1988a, 1988b; Sokanovskii 1937: 50–51, 57; Spessivtsev 1922: 479, 1931: 90; Stresemann et al. 1989: 351; Swaine 1909: 119, 1913: 87–92, 1918a: 107–120; Thatcher, T. O. 1948: 1–150, 1957: 28; Trappen 1935: 143; Tredl 1907: 15; Weaver 1943: 8; Wood, S. L. 1986a: 70; Yin, Huang, & Li 1984: 126. (**ms**) Hopping, G. 1961b; Kubo et al. 1986; Skelly et al. 1988. [**As *Tomicus***]: Barbey 1901: 81; Bargmann 1900: 169; Bedel 1888b: 400–401; Beeson 1930: 83; Bergroth 1884: 230; Bruck 1936a: 41; Eichhoff 1878b: 220, 1881a: 48, 211; Judeich & Nitsche 1895: 448–451; Lacordaire 1869: 382; Latreille 1807: 276; LeConte 1868: 162–164, 1987: 346, 362; LeConte & Horn 1883: 518–519; Provancher 1877: 569; Stebbing 1903: 225, 1907: 39, 1909: 25, 29, 1914: 561; Swaine 1909: 119.

***acuminatus* (Gyllenhal)** 1827: 620 (*Bostrichus*). Syntypes, sex?; apparently Sweden; not located.

Figures: Bakke 1960: 303, Balachowsky 1949: 266, Barbey 1925: 234, Bevan 1987: 114, Grune 1979: 150, Nakane et al. 1963:pl. 192, Nobuchi 1974:pls. 1, 3, Tsai & Li 1959: 97.

Distribution: Asia (Heilongjiang, Hunan, Jilin, Neimeng, Shanxi, Sichuan, Yunnan in China/ Japan/ Korea/ Mongolia/ Syria/ Thailand/ Turkey/ Sakhalin Island, Siberia in E USSR), Europe (Austria/ Belgium/ Bulgaria/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Hungary/ Italy/ Luxemburg/ Netherlands/ Norway/ Poland/ Romania/ Scotland/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia).

Hosts: *Pinus* spp., rare in *Picea, Abies, Larix*.

Notes: (3) Sturm 1826: 102 (named *Bostrichus quadridentatus*, nomen nudum, no status), Dejean 1837: 332 (named *Bostrichus iconographus* and *B. porographus*, nomen nudums, no status), Ferrari 1868: 44 (cited this species in *Cyrtotomicus*).

References: (**ay**) Beal 1927b; Courtois, Chararas, & Debris 1964a, 1964b; Courtois et al. 1964a: 397, 1964b, 1964c, 1965; Escherich 1923b: 486, 539; Farris 1969: 529; Feytaud 1950a; Francke-Grosmann 1956b, 1966b; Fuchs 1911a; Gehrken 1985, 1989; Gehrken & Zachariassen 1977; Lanier & Kirkendall 1986: 87–96; Nunberg 1928a: 141, 1950a: 138; Nusslin 1911a: 150, 155; Saalas 1938a: 119; Scherb 1971; Termier 1970b; Wichmann 1912a. (**bv**) Annila 1971a: 12, 1971b: 10; Bakke 1967b: 49–53, 1973, 1978a; Butovitsch & Ringselle 1968:

24; Chararas 1976b, 1980a; Chararas, Desveaux, & Kogane-Charles 1960: 921; Francke et el. 1986; Gavelis & Jakaitis 1981; Grune 1979: 151; Inscoe 1982; Jacobson 1972; Kevdina 1897: 108; Klassen, Ridgway, & Inscoe 1982; Kohnle, Kopp, & Francke 1986: 316-319; Kohnle et al. 1988; Nunberg 1950a: 138; Nuorteva 1956c: 93; Perrot 1977; Prell 1930c: 643; Rozhkov 1970: 148; Rutledge, Chararas, & Ducauze 1988; Silverstein & Young 1976: 21; Tragardh 1930b: 103; Teurlay et al. 1977; Vite, Bakke, & Renwick 1972: 1971; Wichmann 1912a. (**cn**) Acatay 1943a: 67; Agafonov & Kaklin 1979; Andersson & Lekander 1966: 684; Anonymous 1948k: 3, 1978i, 1978w, 1980g; Ass & Funtikow 1941; Bakke 1956: 40–42, 1960: 303; Barbey 1925: 234; Belanovskii 1930: 797–799; Berdennikova 1954: 85; Bertolini 1929: 103–131; Blandford 1892a; Browne 1968: 363; Butovitsch & Ringselle 1968: 24; Butovitsch & Spaack 1941: 200–223; Carle, Vincq, & Bizet 1979; Chararas 1978; Chorbadzhievo 1929; Crooke 1955b, 1956; Dobrodeev 1924: 70–76; Donaubauer 1960; Dzhambazishvili 1961: 751–757, 1962; Eckstein 1926: 578, 1939: 33–42, 81–92; Egorov 1958: 1492; Eidmann 1965c, 1970a, 1973; Eidmann & Klingstrom 1976: 254; Escherich 1923b: 486, 539, 1932a; Esterberg 1959; Fang, Wang, & Chi 1985; Feytaud 1950a; Fice 1961: 173–204; Fisher 1937c; Francke-Grosmann 1952: 12; Franz 1947b; Frolich 1926: 115; Fystro & Bakke 1962; Gabler 1955; Georgescu et al. 1957: 357, 473; Geschwind 1919: 111–119; Gradojevic 1940; Gusev 1928: 144; Hanson, H. S. 1937; Heqvist 1965; Hess 1898: 354, 1907: 255; Hess & Beck 1914: 277, 1927: 333; Horegott 1960; Inouye 1949a: 13, 96, 1949b, 1949c; Ishikura 1966; Jablokoff 1953: 325; Jahn 1960b; Joly 1976; Judeich & Nitsche 1895: 496; Kailidis & Markalas 1988; Kamyshnyi 1925: 14–16; Kangas 1934: 1–68, 1937, 1958d: 164, 1966b; Kholodkovskii 1912: 314; Koch 1913: 103; Kontkanen 1932: 59; Koppen 1880: 257; Kozikowsky 1929: 254; Krol 1980b; Kurenzov 1935c: 189; Kurir 1948b: 143; Laidlaw 1947: 53; Lekander 1954b: 16, 1955a: 136; Lekander & Rennerfelt 1955: 10; Lekander, M. 1951: 107; Lieutier, Faures, & Garcia 1988; Lonshehakov & Lure 1960; Lozovoi 1949a: 246, 1950c: 305; MacDougall 1920: 1–42; Maksimovic & Milanovic 1964, 1966; Mamaev 1929: 134–142; Marcu 1926c: 67, 1928: 327–337; Mateeva 1955: 74; Matheisen 1951: 205, 1952: 274; Mathiesen-Kaarik 1953: 6; Megalov & Bazhenov 1927: 1–29; Mokrzecki 1933: 286; Muller 1912: 186; Mumford 1960: 29; Munro 1922: 136; Murayama 1954a: 7; Nechleba 1927: 117; Nestertschuk 1930: 163; Niemeyer & Thalenhorst 1974; Novak, V., Hrozinka, & Stary 1976: 58; Nuorteva 1955c: 1; Nusslin 1883: 152, 1913: 206; Oda, Kato, & Nobuchi 1964; Okstad 1979d; Pfeffer 1933: 43; Pierce, W. D. 1917: 74; Polozencev 1926: 1–5; Polozencev & Zolotov 1969: 3–6; Polubojarinoff 1929: 45–52; Popovic 1931: 57; Prozorov 1929: 17; Redfern, Gregory, & Low 1977; Rhumbler 1927: 324; Rodary 1959: 849; Romanyk 1977; Rousseau, G. 1975; Rudnev 1965b, 1966; Saalas 1949: 344, 395; Sauvard, Lieutier, & Levieux 1988; Schevyrew 1905b: 1104; Schimitschek 1932a: 23, 1935b: 149, 1937c: 58, 1938c: 2112, 1949c: 14, 1952c: 59, 1955a: 78–79, 1955b: 102, 1955c: 89; Schmidt 1881: 35; Schuster 1918: 102; Schwerdtfeger 1944a: 176, 1957a: 183; Shiraki 1952; Sierpinski 1966: 60, 1969a; Slander 1948: 10; Sokanovskii 1932a: 363; Stefanov 1946: 1; Titova 1966; Tragardh 1917: 11, 28, 1927c: 84; Tragardh & Butovitsch 1933a: 235, 1936: 358; Troshanin 1932: 552–556; Trovinen 1957: 1–4; Tullgren 1916: 104; Vorontzov 1968; Wachtl 1901: 381; Weber, H. 1926: 578; Wichmann 1927b: 353; Wohlmann 1936: 41; Wolff & Krausse 1922: 103; Yanovskii & Korotkov 1984; Zankow 1961b; Zasev 1952a: 109; Zhang et al. 1958: 28; Zwolfer 1960. (**ec**) Adlers & Butovitsch 1961: 1–27; Agafonov & Kiklin 1979; Apfelbeck 1916b; Ass & Funtikow 1941; Austara, Petersen, & Bakke 1977: 278; Bakke 1956a, 1957, 1960: 304, 1968b; Balachowsky & Chararas 1964; Balazy & Michalski 1960; Balazy, Michalski, & Ratajczak 1987; Barbey 1927; Batra 1959: 329–355; Batra & Michie 1963: 474; Belanowski 1930; Bogdanova 1987; Boucek 1957b, 1958; Brammanis 1938; Butovitsch & Ringselle 1968: 24; Bychanska 1985; Chararas 1964b; Chararas, Koutroumpas, & Courtois 1977; Choo, Woo, & Park 1983: 175; Christiansen 1970; Cooreman 1963: 45; Ditu 1974; Eidmann 1965c; Francke-Grosmann 1952a, 1956b, 1963a: 355–361, 1966c; Fuchs 1930; Gadek 1976; Galoux 1947b; Gauss 1954a: 423; Gehrken 1985; Gillanders 1906; Golovyanko 1926: 1–87; Graham 1969: 87; Gyorfi 1941b, 1952b; Heliovaara & Lilja 1989; Henningsson & Lundstrom 1974; Heqvist 1957a, 1957b: 42, 1959: 180, 1963: 154, 1965: 23; Herald & Mercadier 1984; Hirschmann & Zirngiebl-Nicol 1961; Hubault 1923a; Jamnicky 1957b: 13, 18, 20, 1957c; Kaarik 1973; Kakulita & Gurchiani 1968; Kangas 1937; Kaya 1984: 746; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1980a, 1983; Kirkendall 1989; Kleine 1908c: 214, 1944: 69; Knoche 1908b: 203; Kolubajiv & Kalandra 1954: 30; Kostenko 1929; Kostin 1964: 118; Krezal 1959: 611; Krivosheina 1974; Krol 1980b; Kurenzov 1934a: 50; Lekander 1966; Li & Zhou 1980: 69; Lieutier, Faures, & Garcia 1988; Lieutier & Vallet 1982; Lindquist 1969c; Livingston & Berryman 1972: 1793; Lozovoi 1948a: 69, 1949a: 246, 1961: 91–113, 1962; Lundberg 1984; Mathiesen 1951: 205, 1952: 274; Mathiesen-Kaarik 1953: 6, 1960c; Meyer 1934: 614; Michalski & Ratajczak 1989; Niemeyer & Thalenhorst 1974; Nikitiuk 1951: 59, 1952: 41; Nikitsky 1978; Nosek 1959b: 87; Nuorteva 1956a: 18, 1957b: 52,

1967a, 1971; Nusslin 1927: 324; Okolow 1963; Palmen 1944: 60, 1946: 195; Perris 1856a: 243; Pettersen 1976b; Pfeffer 1923a: 332, 1928b: 3, 1931b: 74, 1933: 43, 1943b: 179, 1960: 346; Poinar 1975: 160; Pomotskaya 1979; Rennerfelt 1951: 120–137; Rodary 1959: 849; Roubal 1934a: 87; Rousseau, G. 1975; Ruhm 1956b: 4, 1957: 351; Rummukainen 1954: 12; Rybinski 1897: 61; Saalas 1917a: 18, 1930: 119, 1949: 344, 395; Schimitschek 1930a: 281, 1941a: 305, 1955a: 78–79, 1967; Schuster 1918: 102; Schwerdtfeger 1944a: 176, 1957a: 183; Sedlaczek 1935a: 163; Sellnik 1931: 185; Slander 1958: 151; Sokanovskii 1936: 74; Stefanov 1949a: 105; Stora 1938: 20; Szczepanski 1960a: 409; Thompson, W. R. 1943: 57; Thompson, W. R. & Simmonds 1964: 29, 1965: 22; Titova 1966; Tolskii 1927: 581; Tsankov 1961; Tvermyr 1967: 496; Wichmann 1927b: 353, 1955a: 102; Yanovskii 1977b; Yanovskii & Korotkov 1984; Yasumatsu & Watanabe 1965: 68. (**hb**) Acatay 1943a: 67; Adelung 1905; Agafonov & Kuklin 1979; Alkan 1946: 113; Andersen & Nilssen 1983: 1459; Annila 1971: 12; Annila et al. 1972: 22; Anonymous 1948k: 3; Apfelbeck 1916b, 1917; Austara, Pettersen, & Bakke 1977: 278; Awerkiew 1941; Bakke 1968a: 443–602, 1968b: 640–648; Barbey 1901: 24, 88, 1925: 234; Bargmann 1906; Beaver & Browne 1975: 291; Binzer 1881a; Brandt 1948; Browne 1968: 363; Budge 1949; Budkov 1897; Bukowsky 1930; Byers 1984a; Cankov 1961: 75; Carle, Vincq, & Bizet 1979; Chararas 1962c: 214, 1980a; Charvat 1950; Chorbadzhievo 1929d; Dombrowsky 1887, 1892; Eckstein 1889, 1897, 1926: 578, 1939c; Eckstein, F. 1939; Eichhoff 1881a: 50, 231; Eidmann & Klingstrom 1976: 254; Escherich 1923b: 486, 539; Feytaud 1950a; Fuchs 1904a, 1905c: 340, 1911b; Gabler 1955; Gehrken 1984, 1985, l989; Gehrken & Zachariassen 1977; Gillanders 1906, 1908; Gornostaev 1916: 312; Gyorfi 1957; Hennings 1908b, 1908c: 226, 1908d; Henschel 1876a: 105, 238, 1880b: 257, 1894, 1895a: 179; Hess 1878: 105, 1898: 354, 1907: 255; Hess & Beck 1914: 277, 1927: 333; Hlawa 1870: 344; Joly 1976; Judeich & Nitsche 1895: 496; Juutinen 1978; Kangas 1951: 225; Karpinski & Strawinski 1948: 157; Kholodkovskii 1889: 277, 1912: 314; Kirkendall 1984a; Knotek 1894a: 558, 1897: 153, 1898b: 327, 333, 1899b: 11, 1901: 571; Kostin 1960: 134; Kurenzov 1935a: 40, 1948b: 107, 1950d: 211; Lekander 1954b: 16; Lengerken 1954: 93; Li, Dang, & Shi 1977: 189; Li & Zhou 1980: 69; Lieutier et al. 1984; Louzil 1961: 46; Lozovoi 1947: 185; Madon 1930: 99; Michalski 1959a: 291; Morstatt 1924: 46; Munro 1916b: 115, 1926: 69; Murayama 1949a: 13, 1949c: 102; Nordlinger 1856: 19; Nosek 1959b: 87; Novak, V., Hrozinka, & Stary 1976: 58; Nuorteva 1956c: 93, 1967a, 1971: 70; Nusslin 1898: 274, 281, 1906b: 16, 1913: 206, 1927: 324; Okstad 1979d; Perris 1856a: 243; Petrenko 1966; Pfeffer 1941b: 3, 1941c: 7, 1989a: 74; Postner 1974: 454; Prell 1930c: 643; Radovanovic 1959: 581; Ratzeburg 1837: 155, 1839: 189; Rhumbler 1927: 324; Riegel 1852: 29; Rimski-Korsakov et al. 1949: 288; Rodd 1897: 34; Romanyk 1977; Rozhkov 1970: 148; Rudnev 1926: 32–69; Saalas 1913a: 68, 90, 1949: 344, 395; Schedl 1981b: 90; Schevyrew 1905b: 1104; Schimitschek 1930a: 281, 1955a: 78–79; Schmidt 1881: 35; Schwerdtfeger 1944a: 176, 1957a: 183; Sedlaczek 1935a: 163; Slander 1958: 151; Sokanovskii 1932a: 363; Spessivtsev 1913a: 74, 1928a: 232; Stark 1926a: 337, 1952: 395; Stefanov 1949a: 105; Taschenberg 1874: 160, 1880: 220, 229; Termier 1970b; Tragardh 1914: 100, 1927c: 84, 1929a: 310, 1930b: 103, 1930c: 469, 1931: 55, 1939b: 143, 214; Tsankov 1961; Tschorbadjiev 1929: 175; Wachtl 1876a: 455, 1895: 27, 1901: 381; Wang 1982; Weber, H. 1926: 578; Wichmann 1927b: 353; Winogradoff 1911: 147; Wolff & Krausse 1922: 103; Yang 1989c. (**ds**) Acloque 1896; Ammann & Knabl 1923; Andersch 1851; Andersen & Nilssen 1983: 1459; Angus 1965b: 12; Anonymous 1978i, 1978w, 1980g; Atkinson 1921; Audras & Schaefer 1957; Bakke 1960: 303; Balachowsky 1952: 134; Balazy & Michalski 1960; Barthe 1896; Bau 1888; Beaver & Browne 1975: 291; Bejer-Petersen & Jorum 1977: 31; Benick 1921; Bistrom & Vaisanen 1988: 42; Blanchere & Robert 1889; Borchert 1951; Brakman 1966b: 207; Brancsik 1871, 1906; Browne 1968: 363, 1972b: 19, 1980c: 482; Brundin 1934; Budkov 1897; Bukowsky 1930; Buresh & Lazarov 1956; Butovitsch & Heqvist 1947; Calwer 1884, 1893; Chapuis & Candeze 1853; Charvat 1950; Cho 1957; Choo 1983: 92; Choo & Woo 1985: 165; Choo, Woo, & Nobuchi 1988a: 134; Chorbadzhievo 1924d, 1929; Chrystal 1937; Crotch 1863; Dejean 1837; Eggers 1904; Endrodi 1958a, 1958b; Ericson & Sandin 1893; Escalera 1919; Escherich 1923b: 486, 539, 1932b; Esterberg 1928, 1959; Everts 1925; Fauvel 1885; Favre 1890; Fedorov 1930; Forster 1849: 439; Fowler 1891; Fry 1937; Fuchs 1904a, 1905a, 1905c: 340, 1907: 33, 48; Gaubil 1849: 126; Gaunitz 1928: 92; Gemminger & Harold 1872: 2689; Gobbi 1989: 61; Gornostaev 1917: 308–315; Gozis 1875: 80; Grill 1895: 310; Grouzelle 1905; Grune 1979: 151; Gyllenhal 1827: 620; Gyorfi 1941b; Hagedorn 1910d: 47; Hansen, V. 1939, 1956, 1964: 464; Heidenreich 1934: 90; Heliovaara & Puukko 1986; Hellen 1947; Helliesen 1916: 84; Hennig 1954: 261, 263; Henschel 1895: 179; Heyden 1898: 77; Heyden, Reitter, & Weise 1883: 182, 1891: 672, 1906: 712; Heyrovsky 1927; Horegott 1960; Horion 1951; Hubault 1923b; Inouye 1949b; Ishikura 1966; Jablokoff 1953: 325; Jacentkovsky 1912: 291; Jamnicky 1960a; Joly 1976; Judeich & Nitsche 1895: 496; Kailidis 1985; Kailidis & Markalas 1988; Kaisila 1952: 18; Kaltenbach 1874: 685; Karpinski 1926: 83, 1948a: 173; Karpinski & Strawinski 1948: 157; Keler 1925b: 274; Kestercanek

1881a: 12; Kiefer et al. 1942: 529; Klefbeck & Sjoberg 1960: 232; Kleine 1912a: 217, 262, 268, 1913a: 35, 1913b: 127, 1914b: 248, 257, 1934a: 149; Kloft & Hinks 1945: 218; Knotek 1892a: 37, 1894a: 558, 1898b: 327, 333, 1899b: 11, 1901: 571; Ko 1969: 278; Kontav 1943: 67–68; Kontkanen 1932: 59; Koppen 1882: 236, 257; Koschitsky 1900: 83; Kostenko 1929; Kozikowsky & Kuntze 1925: 20; Kraatz 1869: 59; Krivolutskaya 1983; Krivolutskaya & Kupyanskaya 1970; Kurenzov 1934a: 50, 1935a: 40, 1935c: 189, 1936a: 111, 1936b: 350, 1938a: 59, 1965; Kurir 1947c: 7; Langhoffer 1915c: 158; Leclercq 1971; Lentz 1857: 139; Lindberg & Saris 1952: 59; Lindemann 1884b: 264; Lomnicki 1913b: 148; Lucht 1987: 279; Lundberg 1974: 92, 1979: 31; Lundblad 1950c: 116; Malazgirt 1966: 64; Mandl 1931: 25; Marcu 1926c: 67; Matthews & Fowler 1883: 42; Mirzoian 1950: 141; Mumford 1960: 29; Munro 1919: 1–35, 1921: 88, 1922: 136; Munster 1928: 290; Murayama 1929b: 2, 1929c: 23, 1930a: 5, 1930b: 16, 1936b: 116, 1937b: 374, 1939: 141, 1940a: 232, 1942a: 52, 1948: 2, 1950b: 1293, 1951c: 4, 1954a: 7, 1954b: 169, 1955: 104; Nakane et al. 1963: 383; Nobuchi 1966d: 34, 1974: 49; Nunberg 1928b: 88, 116, 1954: 85; Nuorteva 1955a: 31, 1955b: 195, 1971: 65; Nusslin 1898: 274, 281; Orest 1926c: 67; Palmen 1944: 60, 1946: 195; Perris 1876a: 254, 1877a: 414; Pfeffer 1928b: 3, 1931b: 74, 1947e: 4, 1950b: 73, 1960: 346, 1984: 277, 1989a: 74; Pfeil 1865: 230; Pierce, W. D. 1917: 74; Pittioni 1943: 176; Pjatnitskii 1930a: 165; Platonoff 1940: 11, 1943: 141; Plaza & Gil 1982: 248; Pomerantzev 1907b: 423, 493; Poppius 1900: 108; Postner 1974: 454; Prossen 1913: 83; Puukko 1981; Rapp 1934: 731; Ratzeburg 1837: 155, 1839: 189; Redtenbacher 1858: 836, 1874: 377; Reitter 1894a: 82, 1916: 304; Rimski-Korsakov et al. 1949: 288; Rodary 1959: 849; Roubal 1935b: 73, 1941: 272; Rozhkov 1970: 148; Rudnev 1965b; Ruskov 1928c: 62; Rye 1866b: 64; Saalas 1913a: 68, 90, 1917a: 18, 1919: 1–415, 1930: 119, 1931: 70, 1938: 119–120; Sahlberg 1900: 105; Sainte-Claire & Mequignon 1938: 448; Schaufuss 1915: 1248; Schaum 1859: 96, 1862: 101; Schedl 1959h: 100, 1971d: 429, 1977d: 281, 1980a: 27, 1981b: 90; Schilsky 1909: 188; Schneider & Leder 1977: 55; Schwerdtfeger 1981: 189; Seidlitz 1872: 395, 1891a: 565, 1891b: 611; Sharp & Fowler 1893: 34; Shiraki 1952; Siebke 1875: 284; Sierpinski 1966: 60; Sokanovskii 1936: 74, 1960; Sparre-Schneider 1889: 61; Stark 1926a: 337, 1926g: 154, 1926j: 127, 1927b: 90, 1928: 377–378, 1931a: 27, 1931d: 549, 1952: 395; Stein 1868: 114; Stein & Weise 1877: 164; Stenius 1936: 318; Stierlin 1898: 443; Stierlin & Gautard 1871: 294, 1906: 205; Strand 1946: 603; Strand & Hansen 1935: 70; Sturm 1843: 230; Thomson 1865: 363, 1868: 222; Tragardh 1914: 100, 1917: 1–28, 1919: 67–114, 1936: 47–49, 1939b: 143, 214; Tredl 1907: 15; Tschorbadjiev 1929: 175; Wachtl 1876a: 455; Wegelius 1960: 107; Welch, R. C. 1968: 64, 1968b: 121; Westhoff 1882: 239; Wichmann 1927a: 78, 1955a: 102; Winter, T. G. 1983: 51; Wiren 1945: 43; Yanovskii 1977a, 1984, 1989: 64; Yanovskii & Dmitrienko 1983; Yanovskii & Tegshzhargal 1985: 412; Yin, Huang, & Li 1984: 128; Zinovjev 1955: 187. (**tx**) Acloque 1896; Alkan 1946: 113; Bach 1854; Bakke 1960: 303; Balachowsky 1949a: 262; Barbey 1901: 24, 88; Bertolini 1872; Bevan 1987: 114; Brancsik 1871; Browne 1972: 19; Chapuis & Candeze 1853; Charvat 1950; Choo 1983: 92; Chorbadzhievo 1924d; Doebner 1862: 175; Dombrowsky 1887, 1892; Duffy 1953; Eggers 1910e, 1921: 39–43, 1923: 138; Eichhoff 1864b: 42, 1878b: 253–254, 1881a: 50, 231, 1883a: 112, 137, 1884: 299; Endrodi 1957b; Escherich 1923b: 486, 539; Escherich & Escherich 1897; Fauvel 1885: 326–329; Ferrant 1911; Ferrari 1867: 43, 83; Fleischer 1927; Formanek 1907: 42; Fuchs 1911a; Gabler 1955; Gillanders 1908; Grune 1979: 150–151; Gyllenhal 1827: 620; Hagedorn 1910a: 103; Hansen, V. 1956, 1964: 464; Henschel 1876a: 105, 238, 1895a: 179; Hopkins 1914: 120; Iablokoff-Khnzorian 1961: 105; Joly 1976; Judeich & Nitsche 1895: 496; Kalina 1970: 130; Karpinski & Strawinski 1948: 157; Knotek 1892a: 37; Koch 1913: 103, 1932: 137; Kuhnt 1913: 1057; Kurenzov 1941a: 201, 1948b: 107; Kurenzov & Kononov 1966: 31; Leunis 1886: 180; Li & Zhou 1980: 189; Lieutier et al. 1984: 31; Lovendal 1898: 150; Lucht 1987: 279; Munro 1916b: 115, 1926: 1–77; Murayama 1929: 29–30, 1930: 20, 31, 1937b: 374, 1939: 141, 1940a: 232, 1950b: 1293, 1955: 104; Nakane et al. 1963: 383, pl. 192; Niisima 1909: 149, 1910a: 11; Nobuchi 1966b: 34, 1974: 49, pl. 1, 3; Nordlinger 1848: 236, 1956: 19; Novak, V., Hrozinka, & Stary 1976: 58; Nunberg 1928a: 141, 1954: 85; Nusslin 1911a: 150, 155; Perris 1877a: 414; Pfeffer 1932b: 26, 1933: 3–54, 1941b: 3, 1941c: 7, 1947e: 4, 1955a: 252, 1989a:pl. 10; Plaza & Gil 1982: 248; Portevin 1935: 337; Postner 1974: 454; Prell 1929: 90; Quaschik 1953: 35; Ratzeburg 1837: 155, 1839: 189; Redtenbacher 1849a: 790, 1849b: 26, 1858: 836, 1874: 377; Reitter 1894a: 82, 1913a: 108, 1916: 304; Rhumbler 1927: 324; Saalas 1913a: 68, 90, 1914: 304–305, 1949: 344, 395; Sahlberg 1836: 145; Schedl 1934f: 1644, 1941a: 42, 1950a: 73, 1952b: 87, 1953e: 22, 1980a: 27, 1981b: 90; Scherb 1971; Schimitschek 1937c: 8, 58, 1955c: 89; Seidlitz 1872: 395, 1891a: 565, 1891b: 611; Sokanovskii 1929: 521–526, 1936: 73–74, 1960: 677; Spessivtsev 1913a: 74, 1922a: 481, 490, 1925a: 188, 1925b: 19, 1931: 70–71; Stark 1952: 395; Stierlin 1898: 443; Taschenberg 1880: 220, 229; Thomson 1865: 363, 1868: 222; Tsai & Li 1959: 97; Wachtl 1883a: 10, 1895: 8; Weber, L. 1912: 30; Yin, Huang, & Li 1984: 126. (**ms**) Byers 1984a; Chararas 1971a: 853; DeGryse 1934: 481; Escherich 1932b; Fuchs 1911b; Hartig 1834: 108; Henschel 1880b: 257, 1880c: 60; Kozi-

kowsky 1929: 254; Lieurier 1984a; Michalski 1959a: 291; Schimitschek 1955b: 102; Schwappach 1924: 58; Sedlaczek 1913: 455; Vorontoz 1968; Weber 1912: 30; Winogradoff 1911: 147.

geminatus Zetterstedt 1828: 345 (*Bostrichus*). Syntypes, sex?; Laponia; not located. Synonymy: Hagaedorn 1910d: 48.
References: (**hb**) Henschel 1877b. (**ds**) Calwer 1893; Hagedorn 1910d: 48; Schaum 1859: 96, 1862: 101; Schilsky 1909: 188; Stein & Weise 1877: 164; Sturm 1843: 230; Zetterstedt 1828: 345, 1840: 193. (**tx**) Balachowsky 1949a: 262; Ferrari 1867a: 46; Sahlberg 1836: 146; Schedl 1950a: 73; Zetterstedt 1828: 345, 1840: 193.

heydeni Eichhoff 1884: 298 (*Tomicus*). Syntypes, sex?; Chabarofka (Amur); Hamburg Museum, lost. Synonymy: Hagedorn 1910d: 48.
References: (**hb**) Budkov 1897. (**ds**) Budkov 1897; Heyden 1881: 177, 1893: 177, 1898: 77; Reitter 1894a: 82. (**tx**) Eggers 1910e: 38–39, 1923b: 138, 1929: 138; Eichhoff 1884: 298; Heyden 1893: 177; Reitter 1894a: 82; Schedl 1934f: 1644, 1950a: 73.

***amitinus* (Eichhoff)** 1872d: 138 (*Tomicus*). Syntypes, sex?; Deutschland; Hamburg Museum, lost.
Figures: Balachowsky 1949a: 264, 274.
Distribution: Asia (Turkey), Europe (Austria/ Belgium/ Bulgaria/ Czechoslovakia/ Denmark/ Finland/ France/ Germany/ Greece/ Hungary/ Italy/ Netherlands/ Poland/ Romania/ Switzerland/ W USSR/ Yugoslavia).
Hosts: *Abies pectinata, Picea excelsa, Pinus* spp.
References: (**ay**) Biermann & Thalenhorst 1977; Escherich 1923b: 449, 485, 538, 593; Feytaud 1950a; Fuchs 1911a; Negru 1968b: 802; Nunberg 1950a: 138; Nusslin 1911a: 82; Schimitschek 1926: 65; Schonherr 1970b; Zumr & Soldan 1981. (**bv**) Annila & Petaisto 1978; Balazy 1968; Birgersson et al. 1984: 1049; Chararas 1976b, 1977b; Francke et al. 1980; Grune 1979: 149; Hellrigl 1985; Jahn 1981, 1982; Klassen, Ridgway, & Inscoe 1982; Klimetzek & Francke 1980; Martinek 1957b: 282; Nunberg 1950a: 138; Nuorteva 1956c: 93; Prell 1925b: 166, 1931: 366; Schneider-Orelli 1947c: 91; Schonherr 1970b; Simionescu 1967a, 1967b, 1968, 1978; Vasechko 1971a, 1971b; Vite 1980; Zumr & Landa 1985. (**cn**) Alexandrov 1958; Anonymous 1948k: 3, 1975m; Balazy 1968; Barbey 1924a, 1925: 67, 340; Bernhard 1928: 413, 1929; Borcea 1924: 221–260; Chararas 1957e, 1961b: 81; Charvat 1951; Chorbadzhievo 1929; Demme 1948; Eckstein 1915, 1926: 578; Escherich 1917: 97–115, 1923b: 449, 485, 538, 593, 1932a; Feytaud 1950; Franz 1949b; Gabler 1955; Galoux 1948c, 1948e; Georgescu et al. 1957: 357, 459; Geschwind 1918: 387–395; Guiese et al. 1958; Hanson, H. S. 1940a; Hess 1898: 344, 1907: 246; Hess & Beck 1914: 274, 1927: 331; Jahn 1952a: 98, 1952b: 149; Joly 1976; Judeich 1886: 68; Judeich & Nitsche 1895: 506; Juutinen 1960: 27; Kalandra 1944, 1948a, 1948c: 33–38, 1953a; Keller 1903b: 48, 55; Kellner 1880: 422, 1881: 368; Kholodkovskii 1912: 312; Klauser 1954: 295; Kleiber 1930: 183; Klopfer 1897: 31; Koch 1913: 103; Komarek et al. 1931: 1–256; Koning 1939: 2015; Kovacevic 1957: 67; Kozikowsky 1929: 253; Marcu 1926c: 67, 1930: 321–336; Martinek 1953a: 372, 1964; Mathiesen 1952: 282; Mokrzecki 1925c: 43, 1928: 273; Mrkva 1960; Muller 1912: 186; Nosek 1951: 106, 1952b: 96; Novak, V. 1959b: 64, 1967; Novak, V., Hrozinka, & Stary 1976: 36; Nusslin 1913: 268; Ohnesorge 1955: 279; Oppermann 1985; Pfeffer 1940c: 273, 1948a: 799, 1949b: 147, 1950c: 1; Quaschik 1953: 10; Pierce, W. D. 1917: 69; Rhumbler 1922: 310, 1927: 324; Ronfeld 1922: 249; Rosenfeld 1919: 29–37, 1926: 38; Rudnev 1965b; Schimitschek 1933b: 93, 1935a: 196, 1937c: 57, 1938a: 301, 1938b: 115, 120, 1939b: 573, 1947g: 191, 1949b: 165, 1950: 14, 1952a: 208, 1955a: 62, 64, 85, 1955b: 102, 1955c: 89, 1956: 340, 1961a: 154; Schindler 1948a: 247; Schmidt 1881: 36; Schuster 1918: 102; Schwerdtfeger 1944a: 180, 1948c: 57, 1950b: 61, 1957a: 185; Sedlaczek 1921: 338, 1933: 307, 1936: 200; Severin 1902a: 81; Simionescu 1967a, 1970; Sitowski 1933: 383–388; Slander 1948: 10; Thalenhorst 1948: 293; Vasechko 1964; Vite 1955: 1333–1336, 1956: 59; Wachtl 1901: 379, 381; Weber, H. 1926: 574; Wilke 1931: 623; Wolff & Krausse 1922: 103; Zieger 1948a: 378; Zolk 1935: 258–294, 614–640, 1937: 147–172; Zumr & Landa 1985. (**ec**) Alexandrov 1958; Annila & Petaisto 1978; Balazy 1962, 1965b: 301–331, 1968; Balazy & Michalski 1960, 1964a, 1964b; Barbey 1927; Brammanis 1938; Chararas 1957d, 1959a; Escherich 1942: 650, 656; Francke-Grosmann 1931; Frickhinger 1921; Gabler 1947c, 1953a; Gadek 1976; Galoux 1947c, 1947d, 1948a; Gauss 1954a: 423; Geschwind 1918; Graham 1969: 874; Grosmann 1931a; Gyorfi 1941b, 1952b; Hellrigl 1985; Jahn & Sinreich 1960b; Jamnicky 1957c, 1960: 820–831; Karpinski 1932a: 109; Kholodkovskii 1897: 118; Kielczewski 1966, 1976; Kielczewski & Balazy 1967: 161–163; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1983; Klauser 1954: 295; Kleine 1908c: 214, 1944: 70; Kolubajiv & Kalandra 1954: 30; Kuhn 1949a: 265; Lindquist 1969c; Lindquist & Bedard 1961; Mathiesen 1952: 282; Meyer 1918: 178; Nosek 1951: 106, 1952b: 96; Nunberg 1930: 201; Nuorteva 1956a: 18, 1957b: 52, 1959d: 201, 1967a, 1968a, 1970; Nusslin 1927: 324; Okolow 1963; Peklo 1949: 336; Pfeffer 1923a: 332, 1932a: 16, 1943b: 179, 1949b: 147, 1950c: 1, 1952a: 159, 1957a: 199, 1959: 2; Poinar 1975: 160; Prell 1925a: 138–141, 1925b: 166; Quaschik 1953: 10; Pfeffer 1960: 346; Rosenfeld 1919: 30; Roubal 1934a: 87; Ruhm 1956b: 4; Rybinski 1903: 28; Schaarschmidt 1959: 813; Schimitschek 1930a: 256, 1931b: 462, 1935a: 196, 1936a: 559, 1950: 14, 1952a: 208,

1953b: 43, 534, 1955a: 62, 64, 85; Schuster 1918: 102; Schwerdtfeger 1944a: 180, 1948: 57–61, 1950b: 61, 1957a: 185; Sedlaczek 1904: 359, 1908: 57, 1933: 307, 1935a: 154; Seitner 1913a: 27, 1924: 22; Simionescu 1967a; Sitowski 1930: 2; Stolina 1959: 216; Tenkacova & Mituch 1987; Thalenhorst 1958: 34; Thompson, W. R. 1943: 57; Thompson, W. R. & Simmonds 1964: 29, 1965: 22; Tsankov & Rosnev 1978; Vasechko 1971b; Vietinghoft 1924: 330; Wiackowski 1957a: 85; Wilke 1931: 623; Wisniewski 1979b; Zinovjev 1957: 343; Zumr 1982c, 1985b. (**hb**) Altum 1881c: 297; Annila & Nuorteva 1977; Annila & Petaisto 1978; Anonymous 1948k: 3; Balazy 1968; Barbey 1901: 24, 84, 1924a, 1925: 67, 340, 1942; Beffa 1961; Biermann & Thalenhorst 1977; Borcea 1924; Braun 1941c; Butovitsch 1930b; Chararas 1957e, 1961b: 81, 1962c: 202, 1977b; Charvat 1950, 1951; Chorbadzhievo 1929; Dombrowsky 1887, 1892; Eckstein 1889, 1897, 1915, 1926: 578; Eichhoff 1881a: 49, 217, 1882a: 241, 1883e: 50; Escherich 1923b: 449, 485, 538, 593; Feytaud 1950a; Flohrer 1948; Fuchs 1904a, 1905c: 340, 1906b; Furst 1888: 112; Gabler 1948b, 1955; Galoux 1948a; Gyorfi 1957; Henschel 1876a: 119, 238, 1877b, 1878b, 1885b, 1895a: 180; Hess 1898: 344, 1907: 246; Hess & Beck 1914: 274, 1927: 331; Joly 1976; Judeich 1886: 68; Judeich & Nitsche 1895: 506, 509; Karpinski 1933b: 38; Karpinski & Strawinksi 1948: 157; Keller 1910: 5; Kellner 1875a: 641, 1876a: 40, 1876b: 191, 1880: 422, 1881: 368; Kholodkovskii 1889: 263, 1912: 312; Knotek 1894a: 558, 1897: 152, 1898b: 327, 333; Kraemer 1953: 483; Lengerken 1939: 36, 1954: 92; Loos 1913: 409; Louzil 1961: 45; Lunardoni & Leonardi 1889: 469; Martinek 1957b: 282; Novak, V., Hrozinka, & Stary 1976: 36; Nunberg 1946b: 3; Nuorteva 1956c: 93, 1967a, 1968a, 1970; Nusslin 1898: 281, 1913: 268, 1927: 324; Ohnesorge 1955: 279; Orest 1927: 59; Pauly 1894: 376; Pfeffer 1941c: 5, 1952a: 159, 1989a: 76; Postner 1974: 458; Prell 1931: 366; Quaschik 1953: 10; Rhumbler 1922: 310, 1927: 324; Schedl 1981b: 91; Schimitschek 1930a: 256, 1938a: 301, 1955a: 62, 64, 85; Schmidt 1881: 36; Schnaider & Sierpinski 1955: 60; Schneider-Orelli 1947b: 157, 1947c: 91; Schwerdtfeger 1944a: 180, 1957a: 185, 1981: 192; Sedlaczek 1921: 338, 1935a: 154; Severin 1902a: 81; Simionescu 1967b, 1968, 1978; Spessivtsev 1913a: 75, 1921b: 222, 1923: 209; Stark 1952: 402; Taschenberg 1880: 220; Thalenhorst 1958: 34; Tschorbadjiev 1929: 174; Vasechko 1971a, 1971b; Wachtl 1876a: 355, 1901: 379, 381; Weber, H. 1926: 574; Wolff & Krausse 1922: 103; Xambeu 1901: 54; Zinovjev 1957: 343; Zumr 1982c, 1982d; Zumr & Soldan 1981. (**ds**) Ammann & Knabl 1913, 1923; Anonymous 1928c: 202, 1975m; Austara et al. 1983; Balazy & Michalski 1960; Balogun 1970: 226; Barthe 1896; Bau 1888; Bielz 1887; Borcea 1924; Brakman 1966b: 207; Brancsik 1906; Bucking 1932; Buresh & Lazarov 1956; Cecconi 1897; Chararas 1961c: 95, 1977b, 1981; Chararas & Koutroumpas 1977; Charvat 1950; Chorbadzhievo 1924d, 1929; Crooke & Bevan 1957; Debatisse 1945; Eder 1934; Endrodi 1958b; Ermisch 1953; Escherich 1923b: 449, 485, 538, 593, 1932b; Favre 1890; Fricken 1889: 344; Fuchs 1904a, 1905a, 1905c: 340, 1906b, 1913; Gabler 1949b; Gemminger & Harold 1872: 2689; Geschwind 1918; Grouzelle 1905; Grune 1979: 149; Gyorfi 1941b; Hagedorn 1910d: 48; Harde & Kostlin 1965: 267; Heinemann 1908a; Hellen 1947; Hendel 1928: 37–39; Hennig 1954: 263; Henschel 1895a: 180; Heyden, Reitter, & Weise 1883: 182, 1891: 672, 1906: 712; Horion 1951; Jacentkovsky 1912: 291; Jamnicky 1960a; Joly 1976; Judeich & Nitsche 1895: 506; Karpinski 1926: 83, 1931: 35, 1932a: 109, 1933b: 38, 1948b: 231; Karpinski & Strawinski 1948: 157; Keller 1910: 5; Kellner 1876b: 191; Kiefer et al. 1942: 529; Klefbeck & Sjoberg 1960: 232; Kleine 1912a: 128, 262, 264, 268, 1913a: 35, 1913b: 127, 1934a: 150; Knotek 1892a: 37, 1894a: 558, 1898b: 327, 333; Koponen 1975, 1980; Kovacevic 1957: 67; Kurir 1947c: 7; Langhoffer 1915c: 158; Leclercq 1971; Liegel 1886: 43; Lomnicki 1913b: 148; Loos 1913: 409, 1919: 283–288; Lucht 1987: 279; Lunardoni & Leonardi 1889: 469; Marchant & Borden 1976; Marcu 1926c: 67; Michalski 1957: 167; Mokrzecki 1928: 273; Negru 1966b: 404; Nunberg 1927a: 213, 1928b: 88, 117, 1930: 200–208, 1947: 99–108, 1954: 86; Nuorteva 1955a: 30, 1956b: 168; Nusslin 1898: 281; Orest 1926c: 67; Pfeffer 1924b: 472, 1930b: 120, 1931b: 75, 1936: 90, 1942c: 448, 1947e: 2, 1949: 145–159, 1950b: 75, 1960: 346, 1989a: 76; Pierce, W. D. 1917: 69; Postner 1974: 458; Prossen 1913: 83; Rapp 1934: 730; Reitter 1894a: 81, 1916: 303; Roubal 1936b: 193, 1941: 272; Rudnev 1965b; Sainte-Claire & Mequignon 1938: 448; Schaufuss 1915: 1249; Schedl 1980a: 27, 1981b: 91; Schilsky 1909: 188; Schimitschek 1938a: 301, 1938b: 115, 120; Schreiner 1897: 369; Schwerdtfeger 1981: 192; Seidlitz 1891a: 565, 1891b: 611; Simionescu 1967a: 466, 1967b: 255–259, 1968: 22. 1970: 126–133; Stark 1952: 402; Stein & Weise 1877: 164; Stierlin 1898: 444; Tahvanainen 1967; Tredl 1907: 15; Tschorbadjiev 1929: 174; Wachtl 1876a: 355; Wichmann 1924: 16–18, 1927a: 77; Wilke 1931: 623; Winter, T. G. 1983: 50; Zivojinovic 1960: 25. (**tx**) Balachowsky 1949a: 267; Balogun 1970: 230; Barbey 1901: 24, 84; Beffa 1961; Charvat 1950; Chorbadzhievo 1924d; Doebner 1876; Dombrowsky 1887, 1892; Eggers 1929e, 1844c: 141; Eichhoff 1872d: 138, 1877b: 118–119, 1877c: 387, 1878b: 236, 1881a: 49, 217, 1883a: 111, 137; Endrodi 1957b; Escherich 1923b: 449, 485, 538, 593; Escherich & Escherich 1897; Fauvel 1889; Ferrari 1878; Fleischer 1927; Flohrer 1948; Formanek 1907: 42; Fricken 1889: 344; Fuchs 1911a, 1913; Gabler 1949b, 1955; Gebien 1907:

197; Grune 1979: 148–149; Hagedorn 1910a: 103; Hellrigl 1985; Henschel 1876a: 119, 238, 1878a, 1882a: 97–98, 1895a: 180; Hess 1875; Hevden 1875: 391; Joly 1976; Judeich & Nitsche 1895: 506; Kalina 1970: 130; Karpinski & Strawinski 1948: 157; Kellner 1875: 641, 1876: 192; Knotek 1892a: 37; Koch 1913: 103, 1928: 88, 1932: 137; Kraatz 1876d: 24; Kuhnt 1913: 1057; Letzner 1891: 376; Leunis 1886: 180; Louzil 1961: 108; Lovendal 1898: 150; Lucht 1987: 279; Lunardoni & Leonardi 1889: 469; Negru 1966b: 404; Novak, V., Hrozinka, & Stary 1976: 36; Nunberg 1954: 86; Nusslin 1911a: 82; Pfeffer 1932b: 26, 1941c: 5, 1947e: 2, 1955a: 250; Portevin 1935: 337; Postner 1974: 458; Quaschik 1953: 35; Redtenbacher 1874: 378; Reitter 1894a: 81, 1913a: 105–106, 1916: 303; Rhumbler 1922: 310, 1927: 324; Schedl 1934f: 1644, 1950a: 82, 1980a: 27, 1981b: 91; Schimitschek 1927: 65–75, 1930: 243–244, 1931: 460–491, 1937c: 57, 1955c: 89; Sedlaczek 1912: 306; Seidlitz 1891a: 565, 1891b: 611; Spessivtsev 1913a: 75, 1921: 219–223, 1923: 200–214, 1931: 73; Stark 1952: 402; Stierlin 1898: 44; Taschenberg 1880: 220; Wachtl 1882: 34–35, 1883a: 12, 1895: 8; Weber, L. 1912: 31. (**ms**) Eggers 1911b; Escherich 1932b; Heinemann 1908a; Kozikowsky 1929: 253; Schimitschek 1930b: 407, 1933b: 93, 1955b: 102; Schwappach 1924: 57; Sedlaczek 1904: 359, 1913: 455, 1936: 200; Seitner 1913a: 27; Weber, L. 1912: 31.

amitinus montanus Fuchs 1913: 80. Syntypes not indicated; Engadin, Deutschland; not located, preoccupied by Eichhoff 1881a: 219. Synonymy: Reitter 1913a: 105 (validity questioned), Schedl 1950a: 82.

References: (**ec**) Schimitschek 1930a: 256. (**hb**) Schimitschek 1930a: 256. (**ds**) Zivojinovic 1960. (**tx**) Eggers 1929e: 50; Fuchs 1913: 80; Reitter 1913a: 105; Schedl 1934f: 1644, 1950a: 52.

***apache* Lanier** 1991: 1118. Holotype, sex?; 7 miles west of Portal, Cochise Co., Arizona [USA]; USNM, Washington.

Figures: Lanier, Teale, & Pajares 1991 (adult parts).

Distribution: North America (Guatemala/ Honduras/ Chiapas, Hidalgo, Mexico, Michoacan, Nuevo Leon, Sinaloa in Mexico/ Arizona in USA).

Hosts: *Pinus ponderosa, P. engelmannii, P. leiophylla, P. teocote, P. oocarpa*?, *P. caribaea*?, *P. tecuhumani*?

Notes: This species was not seen or reviewed by us.

References: (**ay**) Lanier, Teale, & Pajares 1991. (**ds**) Lanier, Teale, & Pajares 1991. (**tx**) Lanier, Teale, & Pajares 1991.

***avulsus* (Eichhoff)** 1868a: 402 (*Tomicus*). Syntypes, sex?; Amerique borealis [USA]; Hamburg Museum, lost.

Figures: Blackman 1922b:pl. 11, fig. 57, Goyer et al. 1980: 20, Hopping 1964b: 973.

Distribution: Antilles Islands (Bahama Islands), North America (Alabama, Arkansas, District of Columbia, Florida, Georgia, Louisiana, Mississippi, New Jersey, North Carolina, Pennsylvania, South Carolina, Texas, Virginia, West Virginia, Wisconsin in USA).

Hosts: *Pinus* spp.

References: (**ay**) Hughes 1974; Kukon & Berisford 1981; Miller, M. C. 1979a, 1979b, 1981; Payne et al. 1973; Smith, M. T. et al. 1988; Thomas, J. B. 1967; Wilkinson 1962: 43–44, 1963. (**bv**) Anderson, N. H. & Anderson 1968: 23; Anonymous 1972v, 1979a; Atkinson, Foltz, & Connor 1988; Barr, B. A. 1969: 641; Bennett & Ostmark 1972; Berisford & Franklin 1971; Billings 1984b; Birch 1978b; Birch & Svihra 1979b; Birch et al. 1980; Borden et al. 1981: 561; Cameron, R. S. 1987; Dixon 1983; Dixon & Payne 1979b; Gara & Coster 1968: 77–86; Gouger, Yearian, & Wilkinson 1975; Hedden, Vite, & Mori 1976; Hetrick 1960; Hughes 1974; Inscoe 1982; Jacobson 1965, 1972; Klassen, Ridgway, & Inscoe 1982; Lanier & Burkholder 1974; Mason, R. R. 1965a, 1967, 1970: 1036–1041; Payne & Wood 1981: 492; Rudinsky 1974a: 409; Silverstein & Young 1976: 21; Smith, M. T. et al. 1988; Speers 1971; Svihra 1982; Svihra, Paine, & Birch 1980; Thatcher & Connor 1985; Turnbow & Franklin 1980; Vite, Bakke, & Renwick 1972: 1971; Vite, Gara, & von Scheller 1964: 461–470; Vite, Ohloff, & Billings 1978; Vite & Pitman 1967: 683–701; Wagner, Flamm, & Coulson 1985; Wilkinson 1962, 1963: 19–22, 1964; Yearian 1967b. (**cn**) Anderson, R. F. 1966; Anonymous 1952h: 7, 1960i, 1960j: 23, 1960q, 1961f, 1961h, 1961s, 1962h, 1963j, 1964h, 1965b, 1966f, 1967f, 1968g, 1970j: 6, 1971h: 6, 1979a, 1981u, 1985k: 46; Baker, W. L. 1972: 260; Beal & Massey 1945: 140–142; Bennett, W. H. 1954, 1955, 1956a: 2, 7–9, 1956b, 1957; Bennett & Ostmark 1972; Berisford 1969a, 1969b: 691–692; Birch & Svihra 1979b; Blackman 1950; Bongberg 1957, 1962; Cameron, R. S. 1987; Chamberlin 1939: 425; Cibulsky & Hyche 1974, 1977; Coulson & Witter 1984: 536; Craighead 1927: 1–12, 1935: 136; Currie 1905: 100; Doane et al. 1936; Downing, Ward, & Ciesla 1970: 29; Drooz 1985: 359; Ebel, Merkel, & Kowal 1964, 1968, 1971, 1975, 1977; Eikenbary, Arnold, & Pinkston 1974; Elliot & Mobley 1938; Fatzinger 1985b; Felt 1906: 752; Gentry, G. R. et al. 1979: 779; Hamel 1980: 774; Hammerle 1952: 8; Harrison 1956; Herrick 1935: 374; Hetrick 1942, 1943, 1960; Hetrick & Moses 1953; Hodges & Pickard 1971: 49; Hofacker et al. 1989; Hopkins 1899c: 422, 445, 1904a: 41, 44; Johnston & Coyne 1954; Jones & Ford 1954: 1–6; Koch, P. 1972; Kowal 1953: 106, 1955b: 1, 1955d: 4, 1956a: 4, 1957b: 20, 1957d: 175, 1957e: 12, 1958a: 402, 1959a: 39, 1959b: 161; Kowal & Ebel 1971, 1977; Lee 1954a: 5; Lewis 1973; Lexon 1939: 259, 269; Mason, G. N. 1969: 5; Mason, R. R. 1965a; Merkel & Kowal

1956: 3; Merkel & Kulman 1955: 5; Middleton 1928b: 423; Miller, M. L. 1979a, 1979b; Nagel 1959: 4; Neal 1979: 799; O'Byrne 1946: 3–6; Ollieu & Mason 1967: 7, 1968: 8; Orr & Kowal 1956: 654; Payne & Wood 1981: 492; Plumb 1958: 10; Price 1957: 99, 1987; Robinson & Whitfield 1968: 1–8; Robinson, J. V. 1981; Ross & Mattoon 1939: 48; Rudinsky 1979: 409; Snyder 1935: 115, 1936: 19; Speers 1971; St. George 1924: 38, 1925: 48–50, 1928: 15, 1929b: 14, 1932b: 2; St. George & Beal 1925: 433, 1929: 8–13; Swaine 1918a: 109, 115; Thatcher, R. C. 1960; Ward, J. G. D., Kucera, & Downing 1971: 30; Wilkinson 1964; Wilkinson & Fotz 1982; Williams, I. L. 1980; Wootten 1963: 23; Wyman 1932: 46; Younan 1979. (**ec**) Anderson, R. F. 1966; Anonymous 1960i, 1960j: 23, 1960q, 1961f, 1961h, 1961s, 1962h, 1963j, 1964h, 1965b, 1966f, 1967f, 1968g, 1970j: 6, 1971h: 6, 1979a, 1981u, 1985k: 46; Baker, W. L. 1972: 260; Bennett, W. H. 1955; Bennett, W. H. & Ostmark 1972; Berisford 1969a, 1969b; Birch & Svihra 1979b; Bongberg 1962; Caird 1935: 709–733; Cameron, R. S. 1987; Chamberlin 1939: 425; Cibulsky & Hyche 1974, 1977; Coulson & Witter 1984: 536; Craighead et al. 1927; Downing, Ward, & Ciesla 1970: 29; Ebel, Merkel, & Kowal 1964, 1968, 1971, 1975, 1977; Eikenbary, Arnold, & Pinkston 1974; Fatzinger 1985b; Felt 1906: 752; Gentry, G. R. et al 1979: 779; Haliburton 1943; Hamel 1980: 774; Hammerle 1952: 8; Hetrick 1949c; Hodges & Pickard 1971: 49; Hofacker et al. 1989; Holst 1936; Jones 1954; King 1967b: 4606; Koch, P. 1972; Kowal & Ebel 1971, 1977; Kulhavy et al. 1989; Lewis 1973; Lindquist, E. E. 1969c; Lindquist, E. E. & Hunter 1965; Mason, G. N. 1969: 5; Mason, R. R. 1965a, 1967: 2215; Massey 1958: 28–30; Miller, M. L. 1979a, 1979b; Muesebeck 1938: 285; Neal 1979: 799; Nelson 1934: 329; Ollieu & Mason 1967: 7, 1968: 8; Payne & Wood 1981: 492; Price 1987; Robinson, J. V. 1981; Rudinsky 1979: 409; Rumbold 1931c: 864, 1936: 419; Speers 1971; St. George 1928: 15; Thatcher, R. C. 1960; Wagner, Flamm, & Coulson 1985; Ward, J. G. D., Kucera, & Downing 1971: 30; Wilkinson 1964; Wilkinson & Fotz 1982; Williams, I. L. 1980; Wootten 1963: 23; Younan 1979. (**hb**) Anderson, N. H. & Anderson 1968; Anonymous 1970j, 1979a, 1985k: 46; Atkinson, Foltz, & Connor 1988; Baker, W. L. 1972: 260; Beal & Massey 1945: 140–142; Bennett, W. H. 1955; Bennett, W. H. & Ostmark 1972; Berisford & Franklin 1971; Blackman 1922b, 1950; Bongberg 1959a; Chamberlin 1939: 425; Chittenden 1899a; Cook, S. P. et al. 1983; Coulson & Witter 1984: 536; Deyrup & Atkinson 1987a: 65; Doane et al. 1936; Drooz 1985: 359; Eikenbary, Arnold, & Pinkston 1974; Felt 1906: 752; Flamm & Coulson 1988; Flamm et al. 1987; Goldman & Parker 1978b; Gouger 1972; Gouger, Yearian, & Wilkinson 1975; Herrick 1935: 374; Hoffard & Coster 1976; Hoffmann & St.George 1949: 73; Hopkins 1899c: 422, 445, 1904a: 41, 44; Hopping, G. 1964: 971; Koch, P. 1972; Kowal & Ebel 1971; Lewis 1973; Mason, R. R. 1967, 1970; Mohr 1955: 7; Ostmark 1968; Pierce, W. D. 1907: 292; Plumb 1958: 10; Richerson & Payne 1979: 362; Speers 1971; St. George 1929b: 14; Stock & Borden 1983: 546; Swaine 1918a: 109, 115; Thatcher, R. C. 1960: 1–25; Thatcher, R. C. & Connor 1985; Thatcher, R. C., Coster, & Payne 1978; Wagner, Flamm, & Coulson 1985; Wilkinson 1963; Wilkinson & Foltz 1982; Williams, I. F. 1980; Wood, S. L. 1982b: 689; Yearian 1967b: 3356; Yearian, Gouger, & Wilkinson 1972; Yearian & Wilkinson 1965, 1967: 43–45; Younan 1979. (**ds**) Anonymous 1960af: 3, 1963j, 1964h, 1965b, 1966f, 1967f, 1968g; Beal & Massey 1945: 140–142; Bennett 1954; Berisford et al. 1971: 236; Berisford, Kulman, & Pienkowski 1970: 484; Blackman 1922b: 112, 1950; Blatchley & Leng 1916: 640; Bongberg 1957; Bongberg & Bennett 1960: 1; Bright 1982b: 164, 1985c: 173; Chamberlin 1925, 1939: 425; Chittenden 1899a; Currie 1905: 100; Deyrup & Atkinson 1987a: 65; Drooz 1985: 359; Frost & Dietrich 1929; Gemminger & Harold 1872: 2689; Glick 1939: 37; Hagedorn 1910d: 48; Henshaw 1885: 148; Hoffmann & St. George 1949: 73; Hopkins 1893a: 139, 1893b: 212; Hopping 1964b: 970–971; Howden & Vogt 1951; Kirk 1969, 1970; Kleine 1913b: 127, 1914b: 393; Kudon & Berisford 1981; Leng 1920: 341; Mason, R. R. 1970; Merkel & Kowal 1956: 3; Nagel 1959: 3; Ostmark 1968; Schwarz 1878d: 469; Swaine 1909: 119; Turnbow & Franklin 1980; Upton 1945: 101; Wilkinson 1962; Wood, S. L. 1982b: 689. (**tx**) Anonymous 1970j: 7; Beal & Massey 1945: 140–142; Blackman 1922b: 112; Blatchley & Leng 1916: 640; Bright 1985c: 173; Chamberlin 1939: 425; Eichhoff 1868a: 402, 1878b: 255; Eikenbary, Arnold, & Pinkston 1974; Goyer et al. 1980: 20; Hagedorn 1910a: 104; Hopping, G. 1963c: 512, 1964b: 971, 973; LeConte 1868: 163–164, 1876: 363, 366, 1878a: 455, 469; Swaine 1909: 119, 1918a: 109, 115; Thomas, J. B. 1967; Zimmermann 1868: 147. (**ms**) Anderson, R. F. 1966; Anderson, R. F. et al. 1980; Anonymous 1985k: 46; Bongberg 1959a; Chararas 1971a: 853; Eckstein 1900c; Foltz, Merkel, & Wilkinson 1984; Jones, G. D. & Ford 1954; Kowal 1957b: 20; Lee 1954a: 5; Lewis 1973; Plumb 1958: 10; Robinson, J. V. 1981; Wilkinson & Foltz 1980; Yearian & Wilkinson 1965, 1967.

***bonanseai* (Hopkins)** 1905b: 76 (*Tomicus*). Lectotype ♂; Tacubaya, Mexico; USNM, Washington, designated by Wood 1982b: 691.

Figures: Hopping 1964b: 973 (adult).

Distribution: North America (El Salvador/ Chiapas, Distrito Federal, Durango, Hidalgo, Jalisco, Mexico, Michoacan, Puebla, Temescaltepec,

Veracruz in Mexico/ Guatemala/ Honduras/ S Arizona in USA).

Hosts: *Pinus montezumae*, *P. ponderosa*, *P. pseudostrobus*, *P.* spp.

References: (**ay**) Mankins, J. V. 1980; Thomas, J. B. 1967. (**bv**) Barr, B. A. 1969: 641; Silverstein & Young 1976: 21; Vite, Bakke, & Renwick 1972: 1971; Vite & Pitman 1967: 683–701. (**cn**) Mankins, J. V. 1980; Perry 1951: 159; Rodriguez 1968, 1970; Rose-Chaffin 1967b: 4181–4182; Schwerdtfeger 1956b: 51; Villarreal Martinez 1957: 11. (**ec**) Becker 1955; Furniss, R. L. & Carolin 1977: 390; Gispert Galvan 1983; Lindquist, E. E. 1969c, 1971; Rose-Chaffin 1967b: 4181–4182. (**hb**) Atkinson et al. 1986: 31; Becker 1955; Burgos & Saucedo 1983: 93; Furniss, R. L. & Carolin 1977: 390; Hopping, G. 1964b: 973; Mankins, J. V. 1980; Rodriguez 1970; Schwerdtfeger 1956b: 51, 54; Wood, S. L. 1982b: 691. (**ds**) Atkinson & Equihua 1985a: 85, 1985b: 235, 1988: 92; Atkinson et al. 1986: 31; Blackwelder 1947: 782; Burgos & Saucedo 1983: 93; DeLeon 1938; Ferrer 1942; Furniss, R. L. & Carolin 1977: 390; Hagedorn 1910d: 50; Hopping, G. 1964b: 973; Kleine 1913b: 121, 1914b: 350; Perry 1951: 159; Schedl 1963c: 158, 1977e: 43; Thomas, J. B. 1966a; Wood, S. L. 1957c: 397, 1982b: 691. (**tx**) DeLeon 1938; Hagedorn 1910a: 104; Hopkins 1905b: 76; Hopping 1963c: 512, 1964b: 970–973; Mankins, J. V. 1980; Schedl 1940a: 349, 1955g: 45; Thomas, J. B. 1967; Wood, S. L. 1957c: 394–397, 1982b: 691.

***borealis* Swaine** 1911a: 213. Lectotype ♀; St. Anthony, Newfoundland [Canada]; CNCI, Ottawa, designated by Bright 1967b: 675.

Notes: Wood 1982b: 681 (subspecies established).

References: (**ay**) Lanier & Kirkendall 1986: 87; Thomas, J. B. 1957: 4, 1967. (**bv**) Furniss, Baker, & Hostetler 1976: 1300. (**cn**) Baranyay & Stevenson 1966: 85; Beckwith 1972; Chamberlin 1924; Craighead 1924: 28–91; Doane et al. 1936; Hoffmann 1952b: 400, 1955: 90; Holsten, Werner, & Laurent 1980; Lindquist, O. H. & Syme 1981: 61; Massey 1956a: 20; Massey & Wygant 1954: 21; Mumford 1960: 29; Rodary 1959: 852; Ruppel 1967: 54; Sippell, Dance, & Rose 1966: 57; Smith, G. J. & Melvin 1974a, 1974b; Swaine 1924d: 9, 11, 1929: 145–146; Swaine et al. 1924: 18, pl. 21; Syme & Nystrom 1988: 58; Tripp & Blauel 1969: 104. (**ec**) Craighead et al. 1927: 1–12; Furniss, R. L. & Carolin 1977: 390; Gobeil 1936b; Kaya 1984; Lindquist, E. E. 1969c; Massey & Wygant 1954: 21; Poinar 1975: 160; Rodary 1959: 852; Swaine 1924d: 9; Thomas 1958: 394; Wichmann 1955a: 102. (**hb**) Baker, W. L. 1972: 262; Chamberlin 1939: 428, 1958: 173–174; Doane et al. 1936; Furniss, R. L. & Carolin 1977: 390; Gara & Holsten 1975; Gobeil 1936c; Holsten, Werner, & Laurent 1980; Hopping, G. 1961b, 1965c: 194; Ives & Wong 1988: 81; Massey & Wygant 1954: 21; Sampson 1929b: 146; Swaine 1918a: 110, 117, 1924d: 9, 1929: 145; Swaine et al. 1924:pl. 21. (**ds**) Anonymous 1926c: 519; Austara et al. 1983; Baranyay & Stevenson 1966: 85; Beaulne 1956; Beckwith 1972a; Bright 1971a: 126, 1976d: 162; Chamberlin 1925, 1939: 428, 1958: 173–174; Dodge 1938: 48–51; Drooz 1985: 361; Furniss, R. L. & Carolin 1977: 390; Gara & Holsten 1975; Gautreau 1974: 5; Hatch 1939: 50; Hoffmann 1952b: 400, 1956: 90; Hopping, G. 1965c: 194; Hopping, R. 1922; Keen 1929a: 39; Kleine 1913b: 127, 1934a: 150; Kusch 1967; Leng 1920: 341; Leonard 1928: 519; Lindquist, O. H. & Syme 1981: 61; Morgan, A. V. & Morgan 1980: 1110; Mumford 1960: 29; Ruppel 1967: 54; Smith, G. J. & Melvin 1974a, 1974b; Still, Tidsbury, & Melvin 1974a, 1974b; Syme & Nystrom 1988: 58; Werner & Holsten 1984; Wichmann 1955a: 102; Wood, S. L. 1972a: 420, 1982b: 681. (**tx**) Beckwith 1972a, 1972b; Benoit 1985: 137; Bright 1967b: 673, 675, 1976d: 154, 162; Chamberlin 1939: 428, 1958: 173–174; Dodge 1938: 48, 51; Hoebeke 1978; Hopping, G. 1963c: 512, 1965c: 193–195; Ives & Wong 1988: 80; Keen 1929a: 39; Kusch 1967: 9; Lindquist, O. H. & Syme 1981: 61; Pardy 1974, 1977, 1983; de Ruette 1970: 102; Swaine 1911a: 213, 1915: 359, 1918a: 110, 117–118; Syme & Nystrom 1988: 58; Thomas, J. B. 1957: 4, 1967; Titus, Meikle, & Harrison 1985: 77; Wood, S. L. 1972a: 420, 1982b: 681. (**ms**) Hopping, G. 1961b.

borealis borealis:

Figures: Hopping 1964b: 973, 1965c: 193, Ives & Wong 1988: 80, Kusch 1967: 9.

Distribution: North America (Alaska/ Alberta, N British Columbia, Manitoba, New Brunswick, Newfoundland, Northwest Territories, Ontario, Quebec, Saskatchewan in Canada/ Maine, Minnesota, Montana in USA).

Hosts: *Picea glauca*.

References: (**ds**) Gast et al. 1989: 385. (**tx**) Wood, S. L. 1982b: 683.

borealis swainei Hopping, R. 1939: 169. Holotype ♀; Creighton Valley, Lumby, British Columbia [Canada]; CNCI, Ottawa.

Figures: Hopping 1965c: 195.

Distribution: North America (S British Columbia in Canada).

Hosts: *Picea engelmannii*.

Notes: (1) Wood 1982b: 683 (reduced to subspecies).

References: (**ec**) Lindquist, E. E. 1969c. (**hb**) Chamberlin 1958: 175. (**ds**) Blackwelder & Blackwelder 1948; Chamberlin 1958: 175; Hopping, G. 1965b: 198; Wood, S. L. 1982b: 683. (**tx**) Chamberlin 1958: 175; Hopping, G. 1963c: 510, 1965c: 193, 198; Hopping, R. 1939: 169; de Ruette 1970: 103; Wood, S. L. 1982b: 683.

borealis thomasi Hopping, G. 1965c: 193. Holotype ♀; Ingonish, Nova Scotia [Canada]; CNCI, Ottawa.

Figures: Hopping 1965c: 195.
Distribution: North America (Nova Scotia in Canada).
Hosts: *Picea glauca*.
Notes: (1) Wood 1982b: 683 (reduced to subspecies).
References: (**cn**) Lindgren 1980a: 66. (**hb**) Lindgren 1980a: 66. (**ds**) Wood, S. L. 1982b: 683. (**tx**) Hopping, G. 1965c: 193, 195; de Ruette 1970: 103; Wood, S. L. 1982b: 683.

borealis lanieri Wood 1974: 27. Holotype ♀; 2 km S Brownsville, Lawrence Co., South Dakota [USA]; Wood Collection.
Distribution: North America (Colorado, South Dakota, E Wyoming in USA).
Hosts: *Picea engelmannii, P. glauca*.
References: (**ds**) Wood, S. L. 1982b: 683. (**tx**) McNamara 1984: 753; Wood, S. L. 1974: 27, 1982b: 683.

***calligraphus* (Germar)** 1824: 461 (*Tomicus*). Syntypes, sex?; Kentucky [USA]; MNB, Berlin.
Figures: Baker 1972: 261, Blackman 1922b:pl. 11, fig. 56, Bright 1972d: 59, 1976d: 154, Hopping 1965f: 804.
Distribution: Antilles Islands (Bahama Islands/ Cuba/ Dominican Republic in Hispanola/ Jamaica), Australia (introduced), North America (Belize/ Ontario, Quebec in Canada/ El Salvador/ Guatemala/ Honduras/ all states in Mexico/ Nicaragua/ Alabama, Arizona, Arkansas, California, Colorado, Delaware, District of Columbia, Florida, Georgia, Indiana, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, West Virginia, Wisconsin, Wyoming in USA).
Hosts: *Pinus* spp.
Notes: (3) Dejean 1837: 332 (*chloroticus*, nomen nudum, *conformis*, nomen nudum, no status, synonymy in Eichhoff 1878b: 224). Lanier, Teale, & Pajares 1991 (recognize subspecies *calligraphus, ponderosae,* and *interstitialis* [but the characters they cite are unusable and inconsistent and do not distinguish geographical races, SLW]).
References: (**ay**) Anderson, N. H. & Anderson 1968: 23; Hopkins 1894g; Hopping, G. R. 1965d: 805; Hughes 1974; Kudon & Berisford 1981; Lanier, Teale, & Pajares 1991; Mankins, J. V. 1980; Miller, M. C. 1979a, 1979b; Nijholt & Sahota 1974: 931; Nunberg 1950a: 138; Payne et al. 1973; Richeson 1969; Richeson, Nation, & Wilkinson 1971; Richeson, Wilkinson, & Nation 1970; Schonherr 1970b; Slansky & Haack 1986; Smith, M. T. et al. 1988; Thomas, J. B. 1957: 4, 1967; Wilkinson 1962, 1963; Wilkinson et al. 1967; Wood, D. L. & Stark 1968. (**bv**) Anderson, N. H. & Anderson 1968: 23; Annila 1971a: 13; Anonymous 1972u, 1972v, 1979a; Bakke 1973; Barr, B. A. 1969: 641; Bennett, W. H. & Ostmark 1972; Billings 1984b; Birch 1978b; Birch & Svihra 1979b; Birch et al. 1980; Borden et al. 1981: 561; Cameron, R. S. 1987; Clemens 1916: 297; Dewey, Ciesla, & Meyer 1974; Dixon 1983; Dixon & Payne 1979b, 1980; Haack et al. 1984, 1987, 1989; Hackstein & Vite 1978; Hertel, Hain, & Anderson 1969: 1086; Hetrick 1960; Hughes 1974; Inscoe 1982; Inscoe & Beroza 1976: 147; Jacobson 1965, 1972; Kinn 1986b; Klassen, Ridgway, & Inscoe 1982; Krawielitzki et al. 1983; Lanier & Burkholder 1974; Lapis 1986; Lapis & San Valentin 1979; Nunberg 1950a: 138; Payne & Wood 1981: 492; Phillips 1988: 430; Pitman 1966b; Renwick & Vite 1972; Schmitz 1972: 1727; Schonherr 1970b; Silverstein & Young 1976: 21; Slansky & Haack 1986; Smith, M. T. et al. 1988; Svihra 1982; Svihra, Paine, & Birch 1980; Thatcher, R. C. & Connor 1985; Vite, Bakke, & Renwick 1972: 1971; Vite, Gara, & von Scheller 1964: 461–470; Vite, Ohloff, & Billings 1978; Vite et al. 1976; Wagner, Flamm, & Coulson 1985; Wilkinson 1962: 43–44; Wilkinson et al. 1967: 188; Wood, D. L. & Stark 1968: 145–151; Yearian 1967b: 25–27. (**cn**) Anderson, R. F. 1966: 230; Anonymous 1940b: 209, 1952h: 7, 1960i, 1960j: 23, 1960q, 1961h, 1962h, 1963j, 1964h, 1965b, 1966f, 1967f, 1968g, 1970j: 6, 1971h: 6, 1972f, 1973b, 1974e, 1978e, 1979a, 1981u, 1985k: 46; Ascencio 1979; Baker, W. L. 1972: 260; Basilis 1977; Beal & Massey 1945: 144–145; Becker, W. B. 1959b, 1962, 1964a, 1964c; Becker, W. B., Abbott, & Rick 1956: 664; Becker, W. 1962, 1964c; Bennett, W. H. 1954, 1955, 1956a: 2, 1956b, 1957; Bennett, W. H. & Ostmark 1972; Berisford 1969a, 1969b: 691–692; Bess 1944: 14–16; Birch & Svihra 1979b; Blackman 1950; Bongberg 1957; Britton & Zappe 1922: 194–202; Browne 1968: 363; Cameron, R. S. 1987; Chamberlin 1924, 1939: 416; Ciesla 1973; Ciesla, Dewey, & Tunnock 1971: 19; Clemens 1916: 297; Cook & Hain 1988; Coulson & Witter 1984;536; Craighead 1927: 1–12, 1935: 136; Dewey, Ciesla, & Meyer 1974; Doane et al. 1936; Downing, Ward, & Ciesla 1970: 29; Drooz 1985: 358; Ebel, Merkel, & Kowal 1964, 1968, 1971, 1975, 1977; Eikenbary, Arnold, & Pinkston 1974; Elliot & Mobley 1938; Etheridge 1968, 1971; Fatzinger 1985b; Felt 1901: 482, 485, 1902b: 64, 1906: 334–358, 1924: 264, 1926: 264, 1930a: 249, 264, 1935: 233; Felt & Bromley 1942: 170, 1943: 326–327; Felt & Rankin 1932: 406; Fitch 1858: 721; Friend 1940: 222; Gara & Coster 1968: 77–86; Garman 1893: 50–52, 1894: 127; Gentry, G. R. et al. 1979: 779; Gillette 1903: 116–117; Graham 1939b; Halperin 1976a; Hamel 1980: 774; Harrington 1881: 32; Harrison 1956; Herrick 1935: 249; Hetrick 1940a: 209, 1941, 1942: 181–183, 1943, 1960; Hetrick & Moses 1953; Hodges & Pickard 1971: 49; Hofacker et al. 1989; Hoffard & Oak 1980; Hopkins

1892b, 1894c, 1894d, 1894g: 279, 1899c: 340, 422, 445, 1902: 11; James & Linnane 1980: 14; Johnson 1897: 109–110; Johnston & Coyne 1954; Jones & Ford 1954: 1–6; Koch, P. 1972; Kowal 1953: 106, 1955b: 1, 1955d: 4, 1956a: 4, 1957b: 20, 1957d: 175, 1957e: 12, 1958a: 402, 1959a: 39, 1959b: 161; Kowal & Ebel 1971, 1977; Lee 1954a: 5; Lewis 1973; Lexon 1939: 269; Lindquist, O. H. & Syme 1981: 61; Mankins, J. V. 1980; Mask 1982; Mason, G. N. & Jones 1969: 5; Mattson & Haack 1987; McCowan 1961; Merkel & Kowal 1956: 3; Merkel & Kulman 1955: 5; Middleton 1928b: 423; Miller, M. C. 1979a, 1979b; Moore, G. E. 1977a, 1978b, 1982; Mumford 1960: 29, 1964: 30; Nagel 1959: 4; Neal 1979: 799; Neel 1959: 1; O'Byrne 1946: 3–6; Ollieu & Mason 1967: 7, 1968: 8; Orr & Kowal 1956: 654; Packard 1881: 166–170, 1890: 711–712; Parr 1943: 419; Payne & Wood 1981: 492; Plumb 1958: 10; Polivka 1938: 130, 1940: 229; Price 1987; Ragenovich & Coster 1974; Raimo & Sharon 1981; Rice 1969: 382–386; Richeson et al. 1970: 1797–1799; Robertson & Whitfield 1968: 1–8; Robinson, J. V. 1981; Rose, W. F., Billings, & Vite 1981; Ross & Mattoon 1939: 48; Rumbold 1931: 847–873; Smith, A. 1981; Smith, J. B. 1900: 363, 1901b: 92; Snyder 1935: 15, 1936: 19; St. George 1924: 38, 1925: 50, 1928: 15, 1929b: 12, 1930: 825–828; Stevens, Brewer, & Leatherman 1980: 25; Stubbs, J. 1978; Swaine 1913: 90, 1918a: 107, 112, 1933: 30; Syme & Nystrom 1988: 58; Thatcher, R. C. 1960; Tsankov 1977; Walsh 1867a: 103; Ward, J. G. D., Kucera, & Downing 1971: 30; Wilkinson 1963: 19–22, 1964: 62; Wilkinson & Foltz 1982; Williams, I. F. 1980; Wood, D. L. & Stark 1968; Wootten 1963: 23; Wyman 1932: 46; Yamaguchi 1979; Yates, H. O. 1972a; Younan 1979. (**ec**) Berisford 1969a, 1969b, 1974b; Berisford, Kulman, & Pienkowski 1970: 484; Berisford et al. 1971: 236; Birch 1978b; Birch & Svihra 1979b; Borden et al. 1981: 561; Bridges 1978; Brower 1974, 1977; Burks 1979: 824; Bushing 1965: 460; Callaham & Shifrine 1960: 146; Chamberlin 1939: 416; Cibulsky & Hyche 1974, 1977; Clark 1965: 1–3; Clark & Osgood 1964b: 3, 1964c: 4; Craighead et al. 1927; Cross & Moser 1971; Dale 1967; Dixon & Payne 1979a: 180, 1979b, 1980; Dozier 1920; Felt 1906: 345; Flamm et al. 1987; Furniss, R. L. & Carolin 1977: 397; Goyer 1986; Graham 1939b; Grissell 1979: 764; Haack 1985; Haack, Foltz, & Wilkinson 1985; Haack et al. 1989; Haliburton 1943; Hammerle 1952: 8; Heqvist 1959: 181; Hetrick 1949c, 1960; Hirschmann & Wisniewski 1982, 1983; Hodges & Pickard 1971: 47; Hoffard & Coster 1976; Holst 1936, 1937: 676; Houser 1931: 657; Hunter 1964; Hunter & Davies 1963; Hunter, Rosario, & Moser 1989; Hurlbutt 1967; Jones 1954; Jouvenaz & Wilkinson 1970: 295–296; Kinn 1971, 1984a; Kobayashi, de Guzman, & Quintos 1977; Kudon & Berisford 1980, 1981; Kulhavy et al. 1989; Liebhold 1983; Lindquist 1969c, 1971, 1975a: 25; Lindquist & Hunter 1965; Lorio 1973; Marsh 1979: 169; Massey 1962: 67–75; Mattson & Haack 1987; Mignot & Anderson 1969; Miller, M. C. 1983, 1984a, 1984b, 1985, 1986a, 1986b; Mizell, Frazier, & Nebeker 1984; Nelson 1934: 329; Nelson & Beal 1929: 1102; Overgaard & Nachod 1971; Paine, Birch, & Svihra 1981; Poinar 1975: 161; Reid 1957b: 7; Rice 1968, 1969: 386; Richerson, J. V. & Borden 1972a; Riley & Goyer 1988; Rohlfs & Hyche 1981, 1984; Rose, W. F., Billing, & Vite 1981; Rumbold 1931c: 847, 1936: 419; Savely 1939: 334; Singh 1977: 98; Slaby 1947: 379; St. Goerge 1928: 15; Thatcher 1960: 1–25; Thomas, G. M. & Poinar 1973: 275; Thompson, W. R. & Simmonds 1964, 1965: 73; Vite, Gara, & Von Scheller 1964; Wagner, Flamm, & Coulson 1985, 1986; Wagner et al. 1987; Webb 1945: 70; Wilkinson 1964; Wilkinson et al. 1978; Wood, D. L. & Stark 1968; Woodring 1966c; Woodring & Moser 1970, 1975; Yearian 1967b; Yearian, Gouger, & Wilkinson 1972; Yearian & Wilkinson 1963, 1965, 1967; Younan 1979. (**hb**) Anderson, N. H. & Anderson 1968: 23; Anonymous 1970j: 6, 1979a, 1985k: 46; Ascencio 1979; Atkinson, Foltz, & Connor 1988; Baker, W. L. 1972: 260; Beal & Massey 1945: 144–145; Bennett, W. H. 1955, 1956: 7–9; Bennett, W. H. & Ostmark 1972; Blackman 1922b, 1950; Bongberg 1959a; Bright 1976d: 165; Brower 1974; Browne 1968: 363; Burgos & Saucedo 1983: 94; Chamberlin 1939: 416; Chittenden 1890, 1899a; Ciesla 1973; Clark & Osgood 1964c; Clemens 1916; Cook, S. P. et al. 1983; Coulson & Witter 1984: 536; Deyrup & Atkinson 1987a: 65; Dillon & Dillon 1961: 812; Doane et al. 1936; Drooz 1985: 358; Eikenbary, Arnold, & Pinkston 1974; Felt 1906: 345, 1926: 264, 1930a: 249, 264; Felt & Rankin 1932: 406; Fitch 1858; Flamm & Coulson 1988; Flamm et al. 1987; Furniss, R. L. & Carolin 1977: 397; Garraway 1986; Goldman & Parker 1978b; Graham 1939b; Haack 1985; Haack, Foltz, & Wilkinson 1984; Haack, Wilson, & Foltz 1987; Haack et al. 1987, 1989; Herrick 1935: 249; Hoffard & Coster 1976; Hoffmann & St. George 1949: 73; Hopkins 1893a: 138, 1893b: 212, 1894g, 1899c: 340, 422, 445; Hopping, G. 1965f: 803; Kinn 1986b; Kinn & Roton 1989; Koch, P. 1972; Kowal & Ebel 1971; Lapis 1985, 1986; Lewis 1973; Mankins, J. V. 1980; Miller, M. C. 1984a, 1984b; Mohr 1955: 7; Moore, G. E. 1982; Ostmark 1968; Packard 1890: 711; Pierce, W. D. 1907: 292; Plumb 1958: 10; Popp et al. 1989; Schwarz 1888a: 80; St. George 1929b: 12; Stevens, Brewer, & Leatherman 1980: 25, 1982: 25; Swaine 1918a: 107, 112; Thatcher, R. C. 1960; Thatcher, R. C. & Connor 1985; Thatcher, R. C., Coster, & Payne 1978; Wagner, Flamm, & Coulson 1985; Wagner et al. 1987; Wallace 1940: 305; Wilkinson 1963, 1979; Wilkinson & Foltz 1982; Williams, I. L. 1980; Wolcott & Montgomery

1933: 166; Wood, D. L. & Stark 1968: 548; Wood, S. L. 1982b: 697; Yamaguchi 1979; Yates, H. O. 1972b; Yearian 1967b: 3356; Yearian, Gouger, & Wilkinson 1972; Yearian & Wilkinson 1963: 518, 1965, 1967: 43–45; Younan 1979. (**ds**) Anderson, W. W. et al. 1983; Anonymous 1926c: 519, 1960: 3, 1963j, 1964h, 1965b, 1966f, 1967f, 1968g, 1973b, 1974e, 1978e; Atkinson & Equihua 1985b: 235, 1988: 92; Beal & Massey 1945: 144–145; Beaulne 1956; Bennett 1954; Berisford, Kulman, & Pienkowski 1970: 484; Berisford et al. 1971: 236; Blackman 1922b: 112–114, 1950; Blatchley & Leng 1916: 638; Bongberg 1957; Bongberg & Bennett 1960: 1; Bright 1972d: 70, 1976d: 165, 1985c: 173; Browne 1968: 363; Burgos & Saucedo 1983: 94; Chadwick & Nikitin 1968; Chamberlin 1925, 1939: 416; Chittenden 1890, 1899a; Ciesla 1973; Cockerell et al. 1907; Dejean 1837: 232; Dewey, Ciesla, & Meyer 1974; Deyrup 1981b: 6; Deyrup & Atkinson 1987a: 65; Dodge 1938: 47–48; Dozier 1918: 374; Drooz 1985: 358; Duftschmidt 1825; Etheridge 1971; Felt 1926: 264, 1930a: 249, 264; Felt & Rankin 1932: 406; Furniss, R. L. & Carolin 1977: 397; Garraway 1986; Gast et al. 1989: 385; Gemminger & Harold 1872: 2690; Hagedorn 1910d: 50; Halperin 1976a; Henshaw 1885: 148; Hoffmann & St. George 1949: 73; Hopkins 1893a: 138, 1893b: 212; Hopping, G. 1965f: 803; Howden & Vogt 1951; Kirk 1969, 1970; Kleine 1913b: 127, 387, 1934a: 150; Kudon & Berisford 1981; Lanier, Teale, & Pajares 1991; Leng 1920: 341; Leonard 1928: 519; Lindquist, E. E. 1970: 981; Lindquist, O. H. & Syme 1981: 61; Melsheimer 1853: 87; Merkel & Kowal 1956: 3; Mumford 1960: 29, 1964: 30; Nagel 1959: 4; Ohno et al. 1987: 87; Ostmark 1968; Provancher 1877: 570; Schedl 1971f: 147, 1977e: 43, 1978e: 38; Schwarz 1878d: 469, 643, 1888a: 80; Smith, J. B. 1900: 363, 1910: 403; Swaine 1909: 120, 1913: 90; Syme & Nystrom 1988: 58; Townsend 1889: 235; Wallace 1940: 305; Wilkinson 1962; Wolcott & Montgomery 1933: 166; Wood, D. L. & Stark 1968; Wood, S. L. 1982b: 697. (**tx**) Anonymous 1970j: 7; Baker, W. L. 1972: 261; Beal & Massey 1945: 144–145; Benoit 1985: 137; Blackman 1922b: 112, 114, 1919: 85–96; Blatchley & Leng 1916: 638; Bright 1972d: 59, 70, 1976d: 154, 165, 1985c: 173; Chamberlin 1939: 416; Clemens 1916; Dillon & Dillon 1961: 801, 812–813; Dodge 1938: 47–48; Duftschmidt 1825; Eichhoff 1876a: 378, 1878b: 224; Eikenbary, Arnold, & Pinkston 1974; Fitch 1858: 721; Germar 1824: 461; Goyer et al. 1980: 20; Hagedorn 1910a: 104; Hopping, G. 1963c: 509, 1965f: 803–804, Jacques 1951: 353; Lanier, Teale, & Pajarer 1991; LeConte 1868: 162, 1876: 363, 1878a: 469; Lindquist, O. H. & Syme 1981: 61; Makins, J. V. 1980; Provancher 1877: 570; Schedl 1955g: 36, 38; Swaine 1909: 120–121, 1918a: 107, 112–113, 1925: 197; Syme & Nystrom 1988: 58; Thomas, J. B. 1957: 4, 1967; Titus, Meikle, & Harrison 1985: 77; Wood, D. L. & Stark 1968; Wood, S. L. 1982b: 697; Yates, H. O. 1972b, 1977: 103. (**ms**) Anderson, R. F. 1966; Anderson, R. F. & Doggett 1980; Anonymous 1985k: 46; Bongberg 1959a; Chararas 1971a: 853; Clark & Osgood 1964a, 1964c; Eckstein 1900c; Foltz, Merkel, & Wilkinson 1984; Holst 1937; Jones 1954; Kinn & Roton 1989; Kowal 1957b: 20; Lee 1954a: 5; Lewis 1973; Mask 1982; Miller, M. C. 1983; Plumb 1958: 10; Robinson, J. V. 1981; Rose, W. F., Billings, & Vite 1981; Wilkinson 1967; Wilkinson & Foltz 1980; Yearian & Wilkinson 1963, 1965.

exesus Say 1826: 255 (*Bostrichus*). Syntypes, sex?; presumably Pennsylvania [USA]; Say Collection, lost. Synonymy: LeConte 1876: 363.

References: (**cn**) Harris 1841: 74, 1842: 74, 1852a: 77, 1862: 87, 1890: 87. (**hb**) Harris 1841: 74, 1862: 87. (**ds**) Chapuis & Candeze 1852; Leng 1920: 341; Melsheimer 1806: 8; Perris 1876a: 254, 1877a: 414; Swaine 1909: 121. (**tx**) Chapuis & Candeze 1853; Eichhoff 1878b: 224; Ferrari 1867a: 47; LeConte 1868: 162, 1876: 363; Perris 1877a: 414; Say 1826: 255, 317; Swaine 1909: 121; Zimmermann 1868: 147.

praemorsus Eichhoff 1868a: 401 (*Tomicus*). Syntypes, sex?; Amerique boreali [USA]; Hamburg Museum, lost. Synonymy: LeConte 1868: 162, Eichhoff 1876a: 378.

References: (**ds**) Gemminger & Harold 1872: 2691; Leng 1920: 341; Swaine 1909: 121. (**tx**) Eichhoff 1868a: 401, 1876a: 378, 1878b: 224; LeConte 1868: 162, 1876: 363; Swaine 1909: 121, 1918a: 112.

interstitialis Eichhoff 1869a: 273 (*Tomicus*). Holotype ♂; Jamaica; IRSNB, Brussels. Synonymy: Hopping 1965f: 803.

Notes: (3) Lanier, Teale, & Pajares 1991 (cited as a subspecies [confirmation needed]).

References: (**cn**) Berrios, Menendez, & Rodriguez 1987; Browne 1968b: 365; Caleda & Veracion 1959, 1960; Perez 1975: 29; Schwerdtfeger 1956b: 38, 1960b: 258; Tzankov et al. 1974: 12. (**ec**) Furniss, R. L. & Carolin 1977: 398; Lindquist, E. E. 1969c. (**hb**) Browne 1968b: 365; Furniss, R. L. & Carolin 1977: 398; Perez 1975: 29; Schwerdtfeger 1956b: 38. (**ds**) Berrios, Menendez, & Rodriguez 1987; Blackwelder 1947; Blandford 1898b: 187; Browne 1962c: 201, 1968b: 365, 1979: 86; Caleda & Veracion 1950: 1–2, 1959: 1–3, 1960: 1–6, 1963: 18; DeLeon 1938, 1942a; Ferrer 1942; Furniss, R. L. & Carolin 1977: 398; Gemminger & Harold 1872: 2691; Gowdey 1926: 27; Hagedorn 1910d: 55; Kleine 1913b: 128, 1914b: 362, 379; Schedl 1963c: 159, 1966b: 42, 1966f: 78, 1969a: 204, 1972g: 40; Schwerdtfeger 1960b: 258. (**tx**) Blandford 1898b: 187; DeLeon 1938; Eichhoff 1869a: 273, 1878b: 228; Hagedorn 1910a: 105; Hopping, G. 1963c: 514, 1965f:

803; Lanier 1987a: 108; Lanier, Teale, & Pajares 1991; Perez 1975: 33–34; Schedl 1940a: 349, 1955g: 36.

ponderosae Swaine 1925b: 197. Holotype ♂; Coconino N. F., Arizona [USA]; CNCI, Ottawa. Synonymy: Hopping 1965f: 803.
Notes: (3) Lanier, Teale, & Pajares 1991 (cited as a subspecies [confirmation needed]).
References: (**ay**) Schonherr 1970b. (**bv**) Jacobson 1965, 1972; Kliefoth, Vite, & Pitman 1964: 283–290; McMullen & Atkins 1962b: 1321; Schonherr 1970b; Vite & Gara 1962: 251–273; Wood, D. L. 1961b: 187–188. (**cn**) Anonymous 1939: 644, 1958a: 6, 1960i, 1960j: 18, 1963j; Bongberg 1962; Doane et al. 1936; Hopkins 1902c: 11; Hornibrook 1936: 620–622; Keen 1938: 112, 1952c: 146; Ostmark 1956: 8; Patterson 1930: 3; Price 1958: 61; Schuder 1969: 80; Tunnock 1963: 10. (**ec**) Hirschmann & Wisniewski 1982, 1983; Hunter & Davis 1963; Hurlbutt 1967; Keen 1938: 112; Lindquist, E. E. 1969c; Massey 1961: 357, 1962: 67–75, 1966a, 1966c: 424; Mathre 1964: 342–362, 1966; Patterson 1930: 3; Poinar 1975: 163. (**hb**) Bongberg 1959a; Chamberlin 1939: 417; Doane et al. 1936; Hopkins 1902c: 11; Keen 1938: 112, 1952c: 146. (**ds**) Anonymous 1958a: 6, 1963j; Bongberg & Bennett 1960: 1; Chamberlin 1939: 417; Keen 1929a: 37, 1938: 112, 1952c: 146; Kleine 1934a: 151; Leng & Mutchler 1933: 53; Schuder 1969: 80. (**tx**) Bright 1967b: 676; Chamberlin 1939: 417; Hopping, G. 1963c: 514, 1965f: 803; Keen 1929a: 37; Lanier 1972: 379, 1977: 379; Lanier, Teale, & Pajares 1991; de Ruette 1970: 103; Schedl 1955g: 36; Swaine 1925b: 197; Wood, D. L. 1961b: 188. (**ms**) Bongberg 1959a; Kliefoth, Vite, & Pitman 1964.

***cembrae* (Heer)** 1836: 28 (*Bostrichus*). Syntypes, sex?; presumably Europe; not located.
Figures: Balachowsky 1949b: 264, 274, Barbey 1925:pl. 5, fig. 1, Bevan 1987: 114, Hasek 1961: 5, Nakane et al. 1963:pl. 192, Nobuchi 1974:pls. 2–3, Pfeffer 1989a:pl. 12, Stanek 1969: 258, Yin, Huang, & Li 1984: 134.
Distribution: Asia (Heilongjiang, Jilin in China/ Japan/ Korea/ Kuril Islands/ Taiwan/ Sakhalin Island, Siberia in E USSR), Europe (Austria/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Hungary/ Italy/ Netherlands/ Norway/ Poland/ Scotland/ Sweden/ Switzerland/ W USSR).
Hosts: *Larix* spp., rare in *Abies*, *Pinus*.
Notes: Fuchs 1913: 82 (described form *engadinensis*, no status; synonymy in Schedl 1950a: 83).
References: (**ay**) Balogun 1969b: 1267–1270, 1969d: 158–161; Escherich 1923b; Feytaud 1950a; Fuchs 1911a; Nunberg 1950a: 138; Schimitschek 1926: 65; Schonherr 1970b; Wichmann 1912a: 10. (**bv**) Birgersson et al. 1984: 1049; Grune 1979: 149; Inscoe 1982; Klassen, Ridgway, & Inscoe 1982; Kohnle et al. 1988; Koizumi, Yamaguchi, & Akita 1971; Luitjes 1976; Nunberg 1950a: 138; Nuorteva 1956c: 88; Prell 1926: 62, 1930c: 626; Rebenstorff & Franke 1982; Renwick & Dickens 1979; Schonherr 1970b; Schwerdtfeger 1981: 194; Stoakley et al. 1978; Wichmann 1912a: 10. (**cn**) Anonymous 1948k: 3, 1977r, 1978i, 1979p, 1980g; Balogun 1970: 226–239; Barbey 1825: 355; Bevan 1964b, 1966, 1987: 123; Blatchford 1983: 30; Boocock 1959b; Browne 1968: 363; Butovitsch 1930: 15–17; Crooke 1955: 30; Crooke & Bevan 1956: 70, 1957: 21; Crooke, Bevan, & Davies 1961; Crooke & Kirkland 1956, 1960; Eckstein 1926: 378, 1930b; Escherich 1923b: 485, 614, 1932a; Feytaud 1950a; Gabler 1955; Grandi 1951; Gyorfi 1946: 195; Hasek 1955, 1961: 5; Hess & Beck 1914: 276, 1927: 332; Hopkins 1894c, 1894d, 1899c: 316; Inouye 1949a: 13, 100, 1949b, 1955; Jacentkovsky 1933: 271; Jahn 1952a: 98, 1959: 220; Joly 1976; Judeich & Nitsche 1895: 507; Kamp 1950; Keller 1903b: 41; Kholodkovskii 1912: 313; Koch 1913: 111; Koizumi, Yamaguchi, & Akita 1971; Komarek et al. 1931: 1–256; Konopka 1871: 35; Koppen 1882: 234; Luitjes 1974; Marie 1924: 328–330; Morschel 1972: 129; Nechleba 1923: 365; Nishiguchi 1957: 69–73; Nosek 1951: 106, 1952b: 96; Novak, V., Hrozinka, & Stary 1976: 77; Nusslin 1913: 268; Ohnesorge 1955: 279; Okuda & Suzuki 1985; Pfeffer 1948a: 799; Phillips, D. H. & Bevan 1967: 6; Pierce, W. D. 1917: 69; Rebenstorff & Franke 1982; Rhumbler 1922: 310, 1927: 324; Schimitschek 1930d: 136, 1935b: 149, 1936b: 76, 1937c: 58, 1939b: 573, 1947g: 191, 1949c: 16, 1955a: 33, 91, 1955c: 89, 1956: 340, 1961a: 154; Schindler 1948a: 247–248; Schneeberg 1925: 498; Schwerdtfeger 1944a: 183, 1957a: 188; Shiraki 1952; Sinreich 1962; Skrzypczynska & Krol 1974; Stoakley 1973, 1974, 1975a, 1975b, 1975c, 1976a, 1976b, 1977; Terasaki et al. 1987; Thalenhorst 1950: 90; Torka 1933: 120–121; Wachtl 1901: 379, 381; Wardle 1929: 323; Weber, H. 1926: 578; Weber, T. 1965; Wilke 1931: 665; Yamane 1981: 471; Zwolfer 1949: 400. (**ec**) Balogun 1969a, 1969c, 1970; Brauns 1950a; Chararas 1957d, 1959a, 1959c; Cooreman 1963: 45; Crooke & Kirkland 1956; DeLeon 1935a, 1935c; Fuchs 1937; Galoux 1947b; Gauss 1954a: 423; Gyorfi 1941b, 1943: 84, 1952b; Haeselbarth 1967; Hirschmann & Wisniewski 1982, 1983; Inouye 1950: 112; Inouye et al. 1955: 66; Kamijo 1981; Karpinski 1932a: 95; Kholodkovskii 1897: 118; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1980a, 1980b, 1983; Kleine 1908c: 214, 1944: 77; Kolubajiv 1954: 22; Komarek 1925b: 863; Koyama 1963; Krivosheina 1974; Kudon 1979b; Kuhn 1949a: 265; Lindquist, E. E. 1969c; Luitjes 1976; Mahunka 1968; Merker &

Adlung 1958: 325; Nechleba 1923: 365, 1929a: 26; Nishiguchi 1959: 271, 1960c; Nosek 1951: 106, 1952b: 96; Nuorteva 1957b: 52, 1959d: 193; Nusslin 1927: 324; Perris 1856a: 243; Pfeffer 1923a: 332, 1943b: 179, 1952a: 159; Poinar 1975: 161; Redfern 1989; Redfern et al. 1987; Reisch 1972; Ruhm 1956b: 4; Scheucher 1959: 263; Schimitschek 1930a: 253–344, 1930e: 119, 1936a: 559, 1948c: 129, 1955a: 33, 91, 1964e; Schremmer 1956: 217; Schvester 1957b: 138; Schwerdtfeger 1944a: 183, 1957a: 188; Sedlaczek 1904: 359, 1935a: 163; Seitner 1913a: 27, 1924: 22; Singh 1977: 100; Thompson, W. R. 1943: 58; Thompson, W. R. & Simmonds 1964: 23, 1965: 29; Wichmann 1955a: 94; Wilke 1931: 665; Wisniewski 1979b; Woodring & Moser 1970; Yanovskii 1986; Yasumatsu & Watanabe 1965: 69. (**hb**) Altum 1881c: 322; Anonymous 1948k: 3; Balogun 1969c: 141–148, 1970: 226–239; Barbey 1901: 10, 24, 82, 1925: 355, 1942; Beffa 1949; Bevan 1987: 123; Bischoff-Ehinger 1873: 160–162, 1874; Brandt 1948; Browne 1968: 363; Budkov 1897; Butovitsch 1930b; Cecconi 1924; Chararas 1962c: 206; Charvat 1950; Dombrowsky 1887, 1892; Eckstein 1897, 1926: 578; Eichhoff 1881a: 49, 214–215, 1881d: 434, 1882e: 325; Escherich 1923b: 485, 614; Fankhauser 1884: 5; Feytaud 1950a; Fuchs 1904a, 1905c: 340, 1906c, 1907: 48; Gabler 1955; Grandi 1951; Gyorfi 1957; Henschel 1882b, 1885b, 1889: 485, 1895a: 181; Hess & Beck 1914a: 276, 1927: 332; Hopkins 1899c: 316; Hufnagl & Puzyr 1951: 108, 119; Inouye et al. 1955: 66; Joly 1976; Judeich & Nitsche 1895: 507; Karpinski & Strawinski 1948: 157; Keller 1885: 289, 1890: 267, 1903a: 337, 1907a: 180, 1910: 5; Kholodkovskii 1912: 313; Koizumi, Yamaguchi, & Akita 1971; Komarek 1925a: 102; Koppen 1880: 254; Lengerken 1939: 72, 1954: 93; Louzil 1961: 45; Luitjes 1974, 1976; Lunardoni & Leonardi 1889: 468; Merker & Adlung 1958: 325; Morschel 1972: 129; Niisima 1908b: 18; Nordlinger 1870a: 186; Novak, V., Hrozinka, & Stary 1976: 77; Nunberg 1929: 115; Nuorteva 1956c: 88; Nusslin 1913: 268, 1927: 324; Ohnesorge 1955: 279; Perris 1856a: 243; Pfeffer 1941b: 18, 1941c: 5, 1952a: 159, 1989a: 76; Postner 1974: 458; Prell 1926: 62, 1930c: 626; Rhumbler 1922: 310, 1927: 324; Rupertsberger 1879: 231, 1880: 230; Schedl 1981b: 92; Schimitschek 1930a: 253–344, 1948c: 129, 1955a: 33, 91; Schneider-Orelli 1947b: 157; Schvester 1957b: 138; Schwerdtfeger 1944a: 183, 1957a: 188, 1981: 194; Sedlaczek 1935a: 163; Seiff 1927: 34; Spessivtsev 1913a: 76, 1923: 209; Stanek 1969: 258; Stark 1952: 405; Stebbing 1909b: 24; Stoakley 1975c, 1976b, 1977; Wachtl 1876a: 453, 1901: 379, 381; Weber, H. 1926: 578. (**ds**) Acloque 1896; Ammann & Knabl 1913; Angus 1964: 179; Anonymous 1977r, 1978i, 1979p, 1980g; Arru, Covassi, & de Bellis 1966: 32; Balogun 1969d; Barthe 1896; Bau 1888; Beffa 1949, 1961; Blanchere & Robert 1889; Blandford 1894c; Brakman 1966b: 206; Browne 1968: 363; Budkov 1897; Calwer 1884, 1893; Chapuis & Candeze 1853; Charvat 1950; Cho 1957; Choo 1983: 94; Choo & Woo 1985: 165; Crooke 1955c, 1962; Crooke & Bevan 1957; Crooke & Kirkland 1960; Dietrich 1877; Endrodi 1958b; Escherich 1923b: 485, 614; Fauvel 1885; Favre 1890; Fleischer 1921b; Fuchs 1904a, 1905a, 1905c: 340, 1906c, 1907: 48, 1913; Gaubil 1849: 126; Gemminger & Harold 1872: 2690; Gozis 1875: 80; Gredler 1866: 374, 1868, 1869: 73; Grouzelle 1905; Grune 1979: 149; Gyorfi 1941b; Hagedorn 1910d: 51; Heller 1881: 173; Hennig 1954: 257; Henschel 1895a: 181; Heyden 1881: 177, 1893: 177; Heyden, Reitter, & Weise 1883: 182, 1885: 300, 1891: 672, 1906: 712; Hiksch 1930; Horion 1951; Inouye 1949b; Jacentkovsky 1933: 271, 1939: 77; Jamnicky 1960a; Joly 1976; Judeich & Nitsche 1895: 507; Karpinski 1932a: 95; Karpinski & Strawinski 1948: 157; Kaszab 1977: 67; Keller 1910: 5, 1920: 13; Kiefer & Moosbrugger 1942: 529; Klefbeck & Sjoberg 1960: 232; Kleine 1912a: 128, 264, 268, 1913a: 35, 1913b: 127, 1914b: 250, 257, 1934a: 150; Ko 1969: 279; Kolubajiv 1934: 64; Komarek 1925b: 863; Koppen 1882: 234; Kraatz 1869: 59; Ku, K. 1964; Kurir 1947c: 10; Lindberg 1959: 31; Lomnicki 1913b: 148; Lucht 1987: 279; Lunardoni & Leonardi 1889: 468; Lundberg 1988; Massee & Gardener 1962; Murayama 1929b: 2, 1929c: 23–24, 1930a: 1, 5, 1930b: 16, 1936a: 129, 1936b: 115, 1937b: 374, 1939: 141–142, 1940a: 232, 1942a: 56, 1948: 2, 1949a: 13, 1951c: 4, 1954b: 170, 1955: 104; Nakane et al. 1966: 383; Negru 1966b: 404, 1968a: 457; Niisima 1908b: 18; Nobuchi 1966d: 35, 1967: 24, 1974: 50; Nunberg 1928b: 88, 116, 1954: 86; Penecke 1927: 235; Perris 1876a: 254, 1877a: 414; Pfeffer 1930b: 120, 1931b: 76, 1932a: 19, 1942c: 448, 1947e: 2, 1950b: 75, 1989a: 76; Pierce, W. D. 1917: 69; Pittioni 1943: 175; Postner 1974: 458; Reitter 1894a: 80, 1916: 304; Rossem, Burger, & Van de Bund 1975; Roubal 1941: 272; Sainte-Claire & Mequignon 1938: 448; Sawamoto 1940a: 95, 105; Schaufuss 1915: 1248; Schaum 1859: 96, 1862: 101; Schedl 1971f: 147, 1980a: 28, 1981b: 92; Schilsky 1909: 188; Schremmer 1955: 217; Schwerdtfeger 1981: 194; Shiraki 1952; Skrzypczynska & Krol 1974; Stark 1936e: 142, 1952: 405; Stein 1868: 114; Stein & Weise 1877: 164; Stierlin 1898: 444; Stierlin & Gautard 1871: 293; Tahvanainen 1967; Torka 1933: 120; Tredl 1907: 15; Wachtl 1876a: 453; Wichmann 1927a: 77–78, 1955a: 94; Wilke 1931: 665; Winter, T. G. 1983: 41. (**tx**) Acloque 1896; Balachowsky 1949a: 267; Balogun 1970: 231, 235; Barbey 1901: 10, 24, 82; Beffa 1949, 1961; Bertolini 1872; Bevan 1987: 114; Blandford 1894d; Chapuis & Candeze 1853; Charvat 1950; Choo 1983: 94; Doebner 1862: 174, 1876; Dombrowsky 1887, 1892; Eggers 1915: 96–97, 1922: 205,

1944c: 140–141; Eichhoff 1864: 42, 1868d: 419, 1872d: 138, 1877b: 118, 1878b: 234, 1881a: 49, 214, 1883a: 112, 137; Endrodi 1957a: 304, 1957b; Escherich 1923b: 485, 614; Fauvel 1885, 1889; Ferrari 1867a: 42, 46, 1867b: 114; Fleischer 1927; Formanek 1907: 41; Fuchs 1911a, 1913; Gabler 1955; Gebien 1907: 197; Grune 1979: 149; Hagedorn 1904d, 1910a: 104; Hasek 1961: 5; Heer 1836: 28; Henschel 1882a: 97–98, 1895a: 181; Heyden 1893: 177; Hopping, G. 1963b: 63; Houlbert 1922a: 12; Joly 1976; Judeich & Nitsche 1895: 507; Kalina 1969; Karpinski & Strawinski 1948: 157; Koch 1913: 11, 1928: 89, 1932: 139; Kuhnt 1913: 1057; Lucht 1987: 279; Lunardoni & Leonardi 1889: 468; Motschulsky 1860a: 155; Murayama 1929: 23–24, 29, 1936a: 129, 1937b: 374, 1939: 141, 1940a: 232, 1954b: 170, 1955: 104; Nakane et al. 1963: 383, pl. 192; Negru 1966b: 404; Niisima 1910a: 11; Nobuchi 1966d: 35, pl. 5, 1974: 50, pl. 2–3; Nordlinger 1870a: 186; Novak. V., Hrozinka, & Stary 1976: 77; Nunberg 1930, 1947: 99–108, 1954: 86; Perris 1877a: 414; Pfeffer 1932b: 26, 1941b: 18, 1941c: 5, 1942: 447–462; 1947e: 2, 1955a: 248, 1989a:pl. 12; Portevin 1935: 337; Postner 1974: 458; Quaschik 1953: 35; Ratzeburg 1837: 188; Redtenbacher 1874: 378; Reitter 1894a: 80, 1913a: 104, 106, 1916: 304; Rhumbler 1922: 310, 1927: 324; Rupertsberger 1879: 231, 1880: 230; Sawamoto 1940a: 95, 105; Schedl 1934f: 1644–1645, 1941a: 42, 1950a: 83–85, 1953e: 22, 1980a: 28, 1981b: 92; Schimitschek 1926: 65–75, 1930: 253–344, 1937c: 58, 1955c: 89; Spessivtsev 1913a: 76; Stanek 1969: 258; Stark 1952: 405; Stebbing 1909b: 24; Stierlin 1898: 444; Teplouchow 1890: 254; Wachtl 1882: 34–35, 1895: 8; Weber, L. 1912: 31. (**ms**) Balogun 1969a; Bevan 1964b; Boocock 1959b; Crooke & Bevan 1960; Crooke, Bevan, & Davies 1961; Eggers 1911b; Eichhoff 1868d: 419; Kalandra 1971: 106; Schimitschek 1930f: 406; Sedlaczek 1904: 359, 1913: 455; Seitner 1913a: 27; Sinreich 1962; Weber, L. 1912: 31; Yamane 1981: 471.

subelongatus Motschulsky 1860a: 155 (*Tomicus*). Syntypes, sex?; Daourie meridionale to Sea of Japan; not located. Synonymy: Schedl 1950a: 83. References: (**ay**) Gusteleva 1979; He, Li, & Fu 1988. (**bv**) Fu et al. 1988; Greckin 1960, 1962a; Mamaev 1986; Qiu et al. 1988; Rozhkov 1970: 152; Vitzthum 1926: 407–503; Yanovskii & Kiselev 1981; Yu & Zhang 1988. (**cn**) Esterberg 1959; Greckin 1962a; Gusteleva 1960b, 1982; Isaev & Khlebopros 1973; Kontkanen 1932: 62; Koppen 1882: 237; Kurenzov 1935c: 188, 1956a: 87; Liu et al. 1989; McFadden et al. 1982; Nestertschuk 1930: 173; Vitzthrum 1926: 407–503; Yanovskii 1981; Yanovskii & Kiselev 1981; Yanovskii & Korotkov 1984; Yu, Guo, & Cheng 1984; Zhang et al. 1958: 28. (**ec**) Cooreman 1963: 46; Greckin 1960, 1962a; Gusteleva 1976, 1979a, 1979b, 1980a: 78–80, 1980b, 1982, 1984a, 1984b; Hughs & Jackson 1958: 70; Korenchenko 1980a, 1980b, 1987a; Kostin 1964: 124; Pleshanov 1966: 124–126; Poinar 1975: 164; Shirskaya 1961; Wisniewski 1984; Woodring 1966c: 133; Woodring & Moser 1970; Yanovskii 1966, 1977b; Yanovskii & Korotkov 1984. (**hb**) Budkov 1897; Greckin 1962a: 552; Gusteleva 1976, 1979a, 1979b; Isaev & Khlebopros 1973; Kostin 1960: 135; Kozlov 1966; Krivolutskaya 1956: 835, 1960, 1973: 142; Kurenzov 1935a: 19, 43, 1948b: 103, 1950d: 216; Petrenko 1966; Rozhkov 1970: 152; Rudnev 1958: 370; Spessivtsev 1923: 209; Stark 1952: 405; Yanovskii & Kiselev 1981; Yu, Guo, & Cheng 1984. (**ds**) Arnoldi et al. 1955: 722; Belousov 1916, 1917: 335; Budkov 1897; Esterberg 1959; Florov 1949: 110; Gemminger & Harold 1872: 2691; Greckin 1962a; Hagedorn 1910d: 59; Hansen 1939; Hellen 1947; Heyden 1898: 77; Isaev 1961: 33–47, 1962, 1967: 64–68; Keler 1922: 269–276, 1925b: 274; Klefbeck & Sjoberg 1960: 232; Kleine 1913b: 128, 1914b: 248, 1934a: 151; Kontkanen 1932: 62; Koppen 1882: 237; Krivolutskaya 1956: 835, 1960, 1965a: 240, 1973: 142, 1983; Kurenzov 1935a: 19, 43, 1935c: 188, 1936a: 113, 1938a: 65, 1950: 215, 1957b: 19, 1965, 1967; Lacordaire 1866: 383; Mandl 1931: 25; Nestertschuk 1930: 159–182; Nuorteva 1955a: 32, 1971: 71; Pittioni 1943: 176; Reitter 1894a: 81; Rozhkov 1970: 152; Sokanovskii 1960; Stark 1926b: 105, 1926g: 154, 1931d: 550, 1952: 405; Strand 1946: 604; Yanovskii 1974, 1977a, 1989: 64; Yanovskii & Dmitrienko 1983; Yanovskii & Tegshzhargal 1985: 412; Yin, Huang, & Li 1984: 133; Zinovjev 1955: 191. (**tx**) Eggers 1915a: 96–97; Ferrari 1867a: 47; Hagedorn 1910a: 106; Krivolutskaya 1956: 835, 1958: 178; Kurenzov 1941a: 204, 1948b: 103; Lacordaire 1866: 383; Motschulsky 1860a: 155; Reitter 1894a: 81, 1913a: 106; Schedl 1950a: 83; Sokanovskii 1960: 677; Spessivtsev 1931: 74; Stark 1952: 405; Yin, Huang, & Li 1984: 133. (**ms**) Gusteleva 1971, 1979a, 1979b; McFadden et al. 1982; Stark 1958: 234.

fallax Eggers 1915: 96. Lectotype ♂; Gouvernement Irkutsk; USNM, Washington, designated by Anderson & Anderson 1971: 13. Synonymy: Schedl 1950a: 83.
References: (**cn**) Kurenzov 1956a: 91. (**ec**) Kurenzov 1934a: 50. (**ds**) Florov 1949: 113; Kurenzov 1934a: 50, 1936a: 113, 1936b: 351, 1938a: 65, 1951b: 19; Mandl 1931: 25; Stark 1931d: 551. (**tx**) Anderson, W. H. & Anderson 1971: 13; Eggers 1915: 96, 1922c, 1931: 41; Schedl 1934f: 1645, 1950a: 83; Spessivtsev 1931: 74; Stark 1952: 394.

shinanoensis Yono 1924: 2. Syntypes, sex?; Japan; not located. Synonymy: Sawamoto 1940: 105.

References: (**ds**) Sawamoto 1940a: 95, 105. (**tx**) Sawamoto 1940a: 95; Yono 1924: 2.

***chinensis* Kurenzov & Kononov** 1966: 31. Holotype ♂; Yunan Province; ISBN, Novosibirsk, USSR.

Distribution: Asia (Yunnan in China).

Hosts: *Pinus yunnanensis*.

References: (**tx**) Kurenzov & Kononov 1966: 31.

***concinnus* (Mannerheim)** 1852: 358 (*Bostrichus*). Lectotype, sex?; Sitka Island [Alaska]; MZU, Helsinki.

Figures: Hopping 1963d: 1093.

Distribution: North America (Alaska/ British Columbia in Canada/ California, Oregon, Washington in USA).

Hosts: *Picea sitchensis*.

References: (**ay**) Oester & Rudinsky 1975, 1979; Payne et al. 1973; Thomas, J. B. 1967; Ting 1936: 96. (**bv**) Barr, B. A. 1969: 641; Daterman, Rudinsky, & Nagel 1965; Oester & Rudinsky 1975, 1979. (**cn**) Browne 1968b: 363; Chamberlin 1924; Compere 1915: 574; Currie 1905: 73; Doane et al. 1936; Essig 1926: 520, 1958: 513; Hatch 1938: 194; Hopkins 1904a: 17, 1915: 54; Keen 1929: 44, 1938: 128, 1952c: 165; Ruppel 1967: 54; Schuder 1969: 78; Schwerdtfeger 1956b: 34; Swaine 1918a: 107, 111. (**ec**) Chamberlin 1918a; Deyrup & Gara 1978: 275; Furniss, R. L. & Carolin 1977: 387; Keen 1938: 128; Kinn 1971; Lindquist 1969c; Schedl 1958d: 187. (**hb**) Bright 1976d: 155; Bright & Stark 1973: 85; Browne 1968b: 363; Chamberlin 1939: 415, 1958: 165; Daterman, Rudinsky, & Nagel 1965; Doane et al. 1936; Essig 1926: 520, 1958: 513; Furniss, R. L. & Carolin 1977: 387; Holsten, Werner, & Laurent 1980; Hopkins 1904a: 17; Keen 1929c: 44, 1938: 128, 1952c: 165; Pierce, W. D. 1907: 292; Richmond & Kinghorn 1951: 31; Schwerdtfeger 1956: 34; Swaine 1918a: 107, 111; Trimble 1924: 388; Wood, S. L. 1982b: 673. (**ds**) Blackwelder 1947:782; Blandford 1898b: 186, 188; Bright 1976d: 155; Bright & Stark 1973: 85; Browne 1968b: 363; Chamberlin 1917, 1918a: 15, 1925, 1939: 415, 1958: 165; Choo & Woo 1983; Currie 1905; Essig 1926: 520, 1958: 513; Evans, D. 1983: 33; Ferrer 1942; Furniss, R. L. & Carolin 1977: 387; Gemminger & Harold 1872: 2690; Hagedorn 1910d: 52; Hamilton 1894a: 35; Henshaw 1885: 148; Hopping, G. 1963d: 1094; Hopping, R. 1922; Keen 1929: 44, 1929a: 37, 1938: 128, 1952c: 165; Kleine 1912a: 218, 1913b: 127, 1914b: 390, 1934a: 150; Leng 1920: 341; Murayama 1957a: 37; Patterson & Hatch 1945: 153; Ruppel 1967: 54; Schedl 1963c: 159, 1969a: 203, 1977e: 43; Schuder 1969: 78; Schwarz 1886: 92; Swaine 1909: 121; Wood, S. L. 1957c: 397, 1972a: 419, 1982b: 673. (**tx**) Blandford 1898b: 186, 188, 1898c: 6; Bright 1976d: 155; Chamberlin 1939: 415, 1958: 165; Eichhoff 1878b: 232; Evans, D. 1983: 33; Hagedorn 1910a: 104; Hatch 1927: 302; Hopkins 1905b: 75, 1915e: 54; Hopping, G. 1963b: 62, 1963c: 510, 1963d: 1092–1096; Keen 1929a: 37; LeConte 1857: 22, 1868: 164, 1876: 363, 367, 1878: 625; Mannerheim 1852: 358, 1853: 234; Schedl 1940a: 349, 1955g: 33, 1960g: 6–7; Schwarz 1886: 42; Swaine 1909: 121, 1918a: 107, 111, 1925: 196–197; Thomas, J. B. 1967; Wood, S. L. 1957c: 397, 1972a: 419, 1982b: 673. (**ms**) Essig 1931: 699; Hatch 1938: 194.

hirsutus Eichhoff 1868a: 402 (*Tomicus*). Syntypes, sex?; Sitka [Alaska]; Hamburg Museum, lost. Synonymy: Eichhoff 1878b: 233.

References: (**ds**) Gemminger & Harold 1872: 2690; Henshaw 1885: 148; Leng 1920: 341; Swaine 1909: 122. (**tx**) Blandford 1898b: 188; Eichhoff 1868a: 402, 1878b: 233; Schedl 1955g: 34; Swaine 1909: 122, 1918a: 111.

chamberlini Swaine 1925: 196. Holotype ♀?; Astoria, Oregon [USA]; CNCI, Ottawa. Synonymy: Wood 1957c: 397.

References: (**cn**) Doane et al. 1936; Hatch 1938: 194. (**hb**) Chamberlin 1939: 415; Doane et al. 1936. (**ds**) Chamberlin 1925, 1939: 415; Keen 1929a: 37; Kleine 1934a: 150; Leng & Mutchler 1933: 53. (**tx**) Bright 1967b: 675; Chamberlin 1939: 415; Keen 1929a: 37; de Ruette 1970: 102; Schedl 1955g: 34; Swaine 1925b: 196–197; Wood, S. L. 1957c: 297. (**ms**) Hatch 1938: 194.

***confusus* (LeConte)** 1876: 364 (*Tomicus*). Lectotype ♀; southern California [USA]; MCZ, Cambridge, lectotype designated by Wood 1982b: 703.

Figures: Borden & Wood 1966: 257, 259, White 1983: 331–332.

Distribution: North America (Baja California Norte, Chihuahua in Mexico/ Arizona, S California, Colorado, Nevada, New Mexico, W Texas, Utah, Wyoming in USA).

Hosts: *Pinus edulis, P. monophylla*, rarely other *P.* spp.

Notes: (3) Most California citations of this name prior to 1970 actually refer to *paraconfusus*; records published as *paraconfusus* that actually pertain to *confusus* are listed here under *confusus*.

References: (**ay**) Atkins 1966b: 983; Barr, B. A. 1969: 641; Bhakthan, Borden, & Nair 1970, Bhakthan, Nair, & Borden 1969, 1971; Borden 1966b: 219, 1967: 1165, 1968; Borden & Slater 1968: 366–368, 1969a: 29–32; Borden & Wood 1966; Lyon 1955: 482; Payne et al. 1973; Pitman & Vite 1963; Renwick, Pitman, & Vite 1966; Schonherr 1970b; Thomas, J. B. 1967; Vite & Pitman 1968: 169–170; Wood, D. L. 1961: 187; Wood, D. L. & Stark 1966. (**bv**) Annila 1971a: 13; Ashraf & Berryman 1969: 6; Barlow 1966; Barr, B. A. 1969: 641; Bedard, W. L., Jr. 1964b, 1965: 77–81; Bhakthan, Borden, & Nair 1970; Birch 1978b; Birch et al. 1977; Birgersson et al. 1984: 1049; Borden 1966b, 1967, 1968: 10–13; Borden,

Brownlee, & Silverstein 1968: 635; Borden, Nair, & Slater 1969: 1626–1627; Borden, Silverstein, & Brownlee 1968: 600; Borden & Wood 1966: 253–261; Cameron & Borden 1967: 236–244; Chararas 1980a; Dyer & Taylor 1968: 775; Franklin 1968; Gara 1963: 51, 1965b: 4891–4892; Gara & Vite 1962: 275–287; Goeden & Norris 1965b: 774; Hertel, Hain, & Anderson 1969: 1086; Inscoe 1982; Inscoe & Beroza 1976: 147; Jacobson 1965, 1972; Katzenellenbogen & Lenox 1973: 331; Kikuchi & Ogura 1976; Klassen, Ridgway, & Inscoe 1982; Kliefoth, Vite, & Pitman 1964: 283–290; Kozlowski 1969: 121; McMullen & Atkins 1962b: 1321; McNew 1970; Miller & Keen 1960: 105; Payne & Wood 1981: 492; Pitman 1965c: 598, 1966a: 147–157; Pitman, Kliefoth, & Vite 1966: 13–17; Pitman, Renwick, & Vite 1966: 243–250; Pitman & Vite 1963: 221–226; Pitman, Vite, & Renwick 1966: 46–47; Reece et al. 1968: 4249–4256; Renwick, Pitman, & Vite 1966: 83–84; Rice 1969a: 382–386, 1969b: 189–194; Schmitz 1972: 1725; Schneider & Rudinsky 1969: 1182; Schonherr 1970b; Shorey & Gaston 1967; Silverstein 1969, 1970a, 1970b; Silverstein & Rodin 1965; Silverstein, Rodin, & Wood 1966, 1967: 944–949; Silverstein & Young 1976: 21; Silverstein et al. 1966: 509–510, 1929–1936; Stark, R. W. 1968b: 689–697; Struble 1966; Thomas, H. A. et al. 1972; Vite 1962, 1967, 1969; Vite & Crozier 1968: 87–94; Vite & Gara 1961: 175–182, 1962: 252–273; Vite, Gara, & Kliefoth 1963: 39; Vite & Pitman 1967: 683–701; Wilson, S. R. & Phillips 1975; Wood, D. L. 1961b: 330–331, 1962a: 473–477, 1962b: 141–145, 1963: 241–282, 1965, 1966, 1967a, 1967b, 1968; Wood, D. L. & Bushing 1963: 1066; Wood, D. L., Silverstein, & Rodin 1967a, 1967b; Wood, D. L. & Stark 1966: 1–10; Wood, D. L. & Vite 1961: 79–95; Wood, D. L. et al. 1966: 523–536, 1967: 206, 1968: 1373–1374, 1970b; Young, J. C., Silverstein, & Birch 1973. (**cn**) Amman & Rasmussen 1969: 631; Annand 1947: a21–22, 31, 1948, 1949; Anonymous 1955g: 30, 1958a: 8, 1959j: 2, 1960i, 1960j: 10, 1960k, 1960q, 1961e, 1961h, 1963j, 1963y, 1965b, 1966f, 1967f, 1967k, 1968g, 1972f, 1973b, 1983d; Barlow 1966; Bedard & Browne 1969: 1202–1203; Bongberg 1962; Browne 1968b: 364; Burke 1932: 366, 1933: 49–59, 1937: 28; Bushing & Wood 1964: 510; Calnaido 1965: 249–262; Celaya 1981; Chamberlin 1924; Currie 1905: 73; Doane 1927: 284–286; Doane et al. 1936; Essig 1913: 705, 1926: 520, 1958: 520; Flake & Germain 1970: 25; Frye 1971: 25; Hall 1946: 54, 62, 1958a: 341–347; Hawthorne 1964, 1965b; Hopkins 1904a: 18, 1905: 77; Hopping, R. 1915: 183; Hoyt 1950: 15; Hutson et al. 1933: 291–304; Keen 1929: 45, 1938: 112–113, 1952c: 146–147; Lucht 1966: 31; Lucht & Moore 1963: 19; Lyon 1959a: 1, 1959b: 323, 1965: 1–59, 1969, 1971; Lyon & Shea 1967: 1–5; Lyon & Swain 1968: 1–4; Lyon & Wickman 1960: 1–7; Massey 1959: 132; McArdle 1957: 16; Miller 1929: 994; Miller & Keen 1960: 105; Moore 1955: 478, 1957: 448–450; Osborne 1962: 1–6; Packard 1890: 713; Patterson 1923, 1927c: 1–9; Payne & Wood 1981: 492; Pearson 1950: 154–155; Ragenovich 1979, 1980b: 22; Rice 1969b; Rosecrans 1947: 8; Rudinsky & Terriere 1959: 485; Ruhm 1964; Salman 1933a: 131–137, 1938a: 613, 1938b: 119–123; Schuder 1969: 78; Schwerdtfeger 1956b: 42; Smith, A. 1981; Stark, R. W. & Borden 1965a; Struble 1955: 104, 1966; Struble & Hall 1955: 1–21; Swaine 1918a: 108, 113; Thatcher, T. O. 1961; Thomas, J. B. 1970a: 5; Villarreal Martinez 1857: 11; Vite 1961, 1962, 1969; Vite & Rudinsky 1962; Vite & Wood 1961: 72; Wickman & Lyon 1962: 395. (**ec**) Anonymous 1964x; Ashraf & Berryman 1969: 13, 1970: 206; Ball 1971; Bedard, W. L., Jr. 1965, 1966a: 931–938; Berryman & Stark 1962a: 456–466, 1962b: 722–726; Birch 1978b; Borden 1967; Bovey 1970; Burks 1979: 824; Bushing 1965: 460; Bushing & Bright 1965: 203; Cameron & Borden 1967; Chansler 1964, 1966: 622–624; Cobb et al. 1968; Coster & Gara 1968: 69–76; Craighead et al. 1927; Doane 1927; Furniss, M. M. 1966; Furniss, R. L. & Carolin 1977: 385; Gahan 1938; Gerhold et al. 1966; Hanover 1975; Heqvist 1959: 181; Hirschmann & Wisniewski 1982, 1983; Hopping, R. 1915: 183; Hunter, Rosario, & Moser 1989; Hurlbutt 1967; Kaya 1984; Keen 1938: 112–113; Kimmins 1970: 919–923; Kinn 1967a, 1967b: 862–865, 1970b, 1970c, 1971, 1983a; Kinn & Witcosky 1978: 249; Lanier 1967b: 1134, 1970: 1139–1163; Laumond & Ritter 1971; Lindquist 1964, 1969c, 1970b; Lindquist & Bedard 1961; Marsh 1979: 148; Mason, W. R. M. 1978; Massey 1960b, 1960c: 14–22, 1962a: 95–103, 1965b, 1966a; Mathre 1964: 353–362, 1966; Miller 1929: 994; Miller & Keen 1960: 105; Moore 1955: 478; Nickle 1963: 386–389; Nishiguchi 1970; Otvos 1965: 1192; Otvos & Stark 1985; Patterson 1927c: 3; Pitman 1965a, 1965b; Poinar 1972, 1975: 161; Rice 1968, 1969a, 1969b, 1971; Rudinsky 1962b, 1962c: 7; Ruhm 1964; Salman 1938a: 613; Shifrine & Phaff 1956: 41–55; Singh 1977: 101; Smiley & Knutson 1983; Stark & Borden 1965: 994–996; Stevens & Hawksworth 1970; Struble 1942d: 843 Vite 1961: 37; Welch, H. E. 1963; Wood, D. L. 1961a; Wood, D. L. & Bushing 1963; Wood, D. L. & Stark 1968: 148; Wood, D. L. & Vite 1961: 49; Zethner-Moller 1967: 575–582. (**hb**) Annila 1969: 204, 1971: 9; Anonymous 1960k; Bhakthan, Borden, & Nair 1970; Bhakthan, Nair, & Borden 1971; Bongberg 1959a; Borden 1967; Borden, Brownlee, & Silverstein 1968: 633; Browne, F. G. 1968b: 364; Browne, L. E. 1972; Burke 1932; Cameron & Borden 1967; Chamberlin 1939: 419, 1958: 167; Chansler 1964, 1966; Chararas 1980a; Doane et al. 1936; Essig 1926: 520, 1958: 520; Fox, Wood, & Cane 1988: 429; Furniss, M. M. & Johnson

1987: 376; Furniss, R. L. & Carolin 1977: 394; Gara 1963, 1965b; Gara & Vite 1962; Hertel, Hain, & Anderson 1969: 1088; Hopkins 1904a: 18; Hopping, G. 1965e: 426; Keen 1929: 45, 1938: 112–113, 1933b: 297–298, 1952c: 146–147; Kozlowski 1969: 121; Miller & Keen 1960: 105; Nishiguchi 1970; Pierce, W. D. 1907: 292; Schwerdtfeger 1956b: 42; Stark, R. W. 1968a; Struble 1955: 1–4, 1966; Struble & Hall 1955: 1–21; Swaine 1918a: 108, 113; Thatcher, T. O. 1961; Trimble 1924: 383; Vite 1962; White, R. E. 1983; Wood, D. L. & Bushing 1963: 1072; Wood, D. L. & Stark 1966; Wood, S. L. 1982b: 703. (**ds**) Anonymous 1958a: 8, 1963j, 1963y, 1965b, 1966f, 1966k, 1967f, 1968g, 1973b, 1983d; Atkinson & Equihua 1985b: 236; Berryman & Stark 1962a; Bongberg & Bennett 1960: 1; Browne 1968: 364; Chamberlin 1917: 328, 1925, 1939: 419, 1958: 167; Chansler 1964: 1–4; Currie 1905: 73; Essig 1926: 520, 1958: 520; Fall 1906: 202; Furniss, M. M. & Johnson 1987: 376; Furniss, R. L. & Carolin 1977: 394; Hagedorn 1910d: 52; Hall & Eaton 1960; Henshaw 1882: 269, 1885: 148; Hopping, G. 1965c: 426; Hopping, R. 1922; Keen 1928: 45–49,1929a: 37, 1929c: 45, 1938: 112–113, 1952c: 146–147; Kleine 1913b: 127, 1914b: 388, 1934a: 150; Leng 1920: 341; Little 1943: 245; Patterson & Hatch 1945: 153; Rosecrans 1947: 8; Salman 1933a: 134; Schuder 1969: 78; Schwarz 1886: 42; Struble 1955: 1–4, 1966: 4; Swaine 1909: 122; Thatcher, T. O. 1961; Thomas, J. B. 1966; Vite 1961; Wickham 1898: 312; Wood, D. L. 1961a; Wood, D. L. & Bushing 1963; Wood, D. L. & Vite 1961; Wood, S. L. 1957c: 397, 1972a: 421, 1982b: 703. (**tx**) Borden & Wood 1966: 257, 259; Chamberlin 1939: 419, 1958: 167; Chansler 1964; Hagedorn 1910a: 104; Hopkins 1905b: 77; Hopping, G. 1963c: 509, 1965e: 423, 425–427; Keen 1929a: 37; LeConte 1876: 362, 364; Reitter 1913a: 105; Schedl 1955g: 40, 1960g: 7; Schwarz 1886: 42; Swaine 1909: 122, 1916b: 188, 1918a: 107, 112–113, 1924c: 69, 71; Thomas, J. B. 1967; White, R. E. 1983: 331–332; Wood, D. L. & Stark 1968: 149; Wood, S. L. 1957c: 397, 1972a: 421, 1982b: 703. (**ms**) Amman & Rasmussen 1969; Anonymous 1959j: 2; Bedard, W. L., Jr. & Browne 1969; Berryman & Stark 1962a; Bongberg 1959a; Borden, Nair, & Slater 1969; Browne, L. E. 1972; Chararas 1971a: 853; Katzenellenbogen & Lenox 1973; Kliefoth, Vite, & Pitman 1974; McNew 1970; Reece et al. 1968; Silverstein 1970b; Silverstein & Rodin 1965, 1967; Silverstein, Rodin, & Wood 1967; Stark, R. W. 1968a; Vite & Gara 1961; Wilson, S. R. & Phillips 1975.

***duplicatus* (Sahlberg)** 1836: 144 (*Bostrichus*). Syntypes, sex?; Finland; not located.

Figures: Balachowsky 1949a: 266, Grune 1979: 146, Nobuchi 1974:pl. 2–3, Pfeffer 1989a:pl. 10, Tsai & Li 1959: 99.

Distribution: Asia (Heilongjiang in China/ Japan/ Sakhalin Island, Siberia in E USSR), Europe (Austria/ Czechoslovakia/ Finland/ France/ Germany/ Hungary/ Norway/ Poland/ Sweden/ W USSR).

Hosts: *Picea excelsa, P. jezoensis, P. koraiensis, P. obovata,* rare in *Pinus densiflora, P. sylvestris.*

References: (**ay**) Escherich 1923b: 465; Fuchs 1911a; Negru 1968b: 802; Nunberg 1950a: 138; Schonherr 1970b. (**bv**) Annila & Petaisto 1978; Bakke 1975, 1979c; Balazy 1968; Ellefsen 1980e; Gavyalis & Kajaitis 1981; Grune 1979: 147; Inscoe 1982; Kinelski 1958: 74; Klassen, Ridgway, & Inscoe 1982; Mozolevskaya, Lebedeva, & Galaseva 1979; Nunberg 1950a: 168; Nuorteva 1956c: 23; Rozhkov 1970: 150; Schonherr 1970b; Selander & Nuorteva 1980; Silverstein & Young 1976: 21; Zotova 1987. (**cn**) Anonymous 1948k: 4; Ass & Funtikow 1941; Balazy 1968; Berdennikova 1954; Chrystal 1922, 1949b: 3–11; Ehnstrom et al. 1974; Elfving 1904; Escherich 1917: 97–115, 1923b: 465; Esterberg 1959; Fleischer 1875c, 1877a; Goryacheva & Andre-Eva 1961: 162–164; Grandi 1951; Hanson, H. S. 1940a; Herlein 1878; Ishikura 1966; Judeich & Nitsche 1895: 498, 1327; Juutinen 1960: 27; Kalandra 1953a; Kangas 1939, 1947: 1–192, 1958d: 164, 1966b; Kozikowsky 1929: 253; Kurenzov 1935c: 188; Lekander 1954b: 16; Lekander, M. 1951: 105; Lozovoi 1950c: 308; Mathiesen 1952: 299; Mathiesen-Kaarik 1953: 11; McFadden et al. 1982; Nestertschuk 1930: 176; Nuorteva 1955c: 1; Nusslin 1913: 273; Pfeffer 1949b: 147; Pierce, W. D. 1917: 69; Rhumbler 1927: 325; Rudnev 1966; Saalas 1949: 344, 392; Selander & Nuorteva 1980; Sierpinski 1958: 69; Titova 1966; Troitskii 1968: 40–43; Wichmann 1927b: 374. (**ec**) Annila & Petaisto 1978; Ass & Funtikow 1941; Balazy 1968; Balazy & Michalski 1960; Brammanis 1938, 1940; Chararas 1959a; Fleischer 1875c, 1877a; Galoux 1947b; Graham 1969: 867; Heqvist 1963: 155; Kangas 1939, 1946b: 21, 1954a: 48; Karpinski 1932a: 95, 99; Kleine 1908c: 214, 1944: 70; Kostin 1964: 120; Kurenzov 1964: 20; Lindquist, E. E. 1969c; Mathiesen 1952: 299; Mathiesen-Kaarik 1953: 11; Melnikova 1960: 19–45; Michalski & Ratajczak 1989; Mozolevskaya, Lebedev, & Galaseva 1979; Nuorteva 1956a: 17, 1957b: 52, 1959d: 201, 1967a, 1968a, 1970; Nusslin 1927: 630; Palmen 1944: 60, 1946: 195; Pettersen 1976b; Pfeffer 1949b: 147; Poinar 1975: 161; Redikortzev 1947: 249; Saalas 1917a: 18, 1928: 649, 1930: 118, 1949: 344, 392, 1951: 14; Slankis 1972; Szczepanski 1960a: 410; Teplouchow 1890: 263; Thompson, W. R. 1943: 59; Titova 1966; Wachtl 1879: 51, 1886: 53; Wiackowski 1957a: 80, 1957b: 312; Zinovjev 1957: 348, 1958: 391; Zolk 1935: 614–640, 1937: 147–172. (**hb**) Annila & Petaisto 1978; Anonymous 1948k: 4; Balazy 1968; Borodajewsky 1928, 1929b, 1930a: 157–159, 1930c: 805–811; Chararas 1962c: 217; Charvat 1950; Dombrowsky 1892; Elfving 1904; Escherich

1923b: 465; Fleischer 1875c, 1877a: Fuchs 1904a; Gornostaev 1916: 311; Grandi 1951; Gyorfi 1957; Henschel 1877b, 1878b, 1889: 485, 1895a: 183; Karpinski 1933b: 38; Karpinski & Strawinski 1948: 157; Kellner 1876b: 191; Kostin 1960: 135; Krivolutskaya 1956: 835, 1960; Kurenzov 1935a: 41, 1948b: 111, 1950d: 217; Lekander 1954b: 16; Lengerken 1939: 72, 1954: 93; Melnikova 1960; Michalski 1959a: 290; Mozolevskaya, Lebedeva, & Galaseva 1979; Nunberg 1946b: 3; Nuorteva 1956c: 23, 1967a, 1968a, 1970; Nusslin 1913: 273, 1927: 630; Opanasenko & Kononenko 1966; Pfeffer 1941c: 7; Postner 1974: 445; Rhumbler 1927: 325; Rimski-Korsakov et al. 1949: 291; Rozhkov 1970: 150; Saalas 1913a: 69, 89, 1949: 344, 392, 1951: 14; Schedl 1981b: 90; Schnaider 1954: 173; Schnaider & Sierpinski 1955: 60; Shishov 1928a: 673; Spessivtsev 1913a: 75, 1921a, 1921b: 221–223, 1923: 204; Stark 1926a: 337, 1952: 399; Wachtl 1876a: 455; Wichmann 1927b: 378; Zinovjev 1957: 348, 1958: 391. (**ds**) Balazy & Michalski 1960; Calwer 1884, 1893; Charvat 1950; Endrodi 1958b; Escherich 1923b: 465; Esterberg 1928, 1959; Fauvel 1885; Florov 1949: 264; Fuchs 1904a; Gemminger & Harold 1872: 2690; Gornostaev 1917: 308–315; Grill 1895: 310; Grune 1979: 147; Hagedorn 1910d: 52; Hansen, V. 1939; Hellen 1947; Henschel 1895a: 183; Heyden, Reitter, & Weise 1883: 182, 1891: 673, 1906: 712; Hlawa 1870; Horion 1951; Ishikura 1966; Jacentkovsky 1912: 291; Jamnicky 1960a; Karpinski 1925: 217, 1926: 83, 1931: 18, 36, 1932a: 95, 99, 1933b: 38, 1935: 1–86; Karpinski & Strawinski 1948: 157; Keler 1925b: 274; Kellner 1876b: 191; Kinelski 1958: 74; Klefbeck & Sjoberg 1960: 232; Kleine 1912a: 268, 1913b: 127, 1934a: 150; Krivolutskaya 1956: 835, 1960, 1983; Kurenzov 1934a: 50, 1935a: 41, 1935c: 188, 1936a: 111, 1938a: 59, 1950: 217, 1951b: 19, 1964: 20; Lazorko 1963; Lomnicki 1904: 370, 1913b: 148; Lucht 1987: 279; Mandl 1931: 25; Munster 1922b: 134; Nobuchi 1974: 52; Nunberg 1928b: 88, 1954: 85; Nuorteva 1955a: 31, 1956b: 168, 1971: 71; Palm 1946: 122; Palmen 1944: 60, 1946: 195; Pfeffer 1931b: 76, 1947e: 4, 1950b: 73, 1989a: 75; Pierce, W. D. 1917: 69; Pittioni 1943: 176; Pomerantzev 1907b: 248, 493; Poppius 1900: 108; Postner 1974: 455; Rakhov 1961: 207–213, 1962; Redtenbacher 1874: 377; Reitter 1894a: 81, 1916: 304; Rimski-Korsakov et al. 1949: 291; Roubal 1941: 272; Rozhkov 1970: 150; Saalas 1913a: 69, 89, 1916: 91–95, 110–116, 1917a: 18, 1930: 118, 1931: 68; Sahlberg 1900: 105; Schaufuss 1915: 1249; Schaum 1862: 101; Schedl 1980a: 28, 1981b: 90; Schilsky 1909: 188; Seidlitz 1872: 395, 1891a: 566; Sokanovskii 1960; Stark 1926a: 337, 1926j: 127, 1931a: 27, 1931d: 350, 1952: 399; Stein 1868: 114; Stein & Weise 1877: 164; Tredl 1907: 15; Wachtl 1876a: 455; Yanovskii & Dmitrienko 1983; Yanovskii & Tegshzhargal 1985: 412; Yin, Huang, & Li 1984: 129; Zinovjev 1955: 187. (**tx**) Balachowsky 1949a: 264–265; Charvat 1950; Dombrowsky 1892; E. B. 1880; Eggers 1914, 1922c, 1923b: 138; Eichhoff 1864b: 42, 1877b: 118; Endrodi 1957a: 307, 1957b; Escherich 1923b: 465; Fauvel 1885; Ferrari 1867a: 47, 1867b: 108, 1868: 251, 1878a; Fleischer 1927; Fuchs 1911a; Grune 1979: 146–147; Hagedorn 1910a: 104; Henschel 1878a, 1895a: 183; Hopping, G. 1963c: 512; Karpinski & Strawinski 1948: 157; Koch 1928: 90; Kraatz 1876d: 24; Krivolutskaya 1956: 835, 1958: 178; Kuhnt 1913: 1058; Kurenzov 1941a: 203, 1948b: 111; Lazorko 1963; Lucht 1987: 279; Nobuchi 1974: 52, pl. 2–3; Nunberg 1954: 85; Pfeffer 1932b: 26, 1941c: 7, 1947e: 4, 1955a: 251, 1989a:pl. 10; Postner 1974: 455; Quaschik 1953: 35; Redtenbacher 1874: 377; Reitter 1894a: 81, 1913a: 107, 1916: 304; Rhumbler 1927: 325; Saalas 1913a: 69, 89, 1949: 344, 392; Sahlberg 1836: 144; Schedl 1934f: 1644, 1950a: 76, 1980a: 28, 1981b: 90; Seidlitz 1872: 395, 1891a: 566; Sokanovskii 1928c: 667–668, 1960: 677; Spessivtsev 1913a: 74–75, 1922a: 483, 1925a: 188, 1925b: 19; Stark 1952: 399; Strohmeyer 1908b: 69; Teplouchow 1890: 261; Tsai & Li 1959: 99; Wachtl 1883a: 5, 1895: 8; Weber, L. 1912: 30; Yin, Huang, & Li 1984: 129. (**ms**) Kozikowsky 1929: 253; McFadden et al. 1982; Michalski 1959a: 290; Sedlaczek 1913: 455; Weber, L. 1912: 30.

judeichi Kirsch 1870: 388 (*Bostrichus*). Syntypes, sex?; Ural (Ochansk, Teplouchoff); not located. Synonymy: Eggers 1923: 138.
References: (**cn**) Koppen 1882: 237. (**hb**) Dombrowsky 1892; Eichhoff 1881a: 50, 230. (**ds**) Fauvel 1885; Gemminger & Harold 1872: 2691; Heyden, Reitter, & Weise 1883: 182, 1891: 672; Koppen 1882: 237; Stein & Weise 1877: 164. (**tx**) Dombrowsky 1892; Eggers 1923: 138; Eichhoff 1878b: 245, 1881a: 50, 230, 1883a: 112, 138; Fauvel 1885; Kirsch 1870: 388, 1890: 252; Schedl 1934f: 1644, 1950a: 76; Teplouchow 1890: 252, 1925: 14–16; Wachtl 1883a: 11.

infucatus Eichhoff 1878b: 247 (*Tomicus*). Holotype, sex?; Europa (Styria); Hamburg Museum, lost. Synonymy: Eggers 1923: 138.
References: (**hb**) Dombrowsky 1892; Eichhoff 1881a: 49, 230; Fuchs 1904a. (**ds**) Fauvel 1885; Fuchs 1904a; Heyden, Reitter, & Weise 1883: 182, 1891: 672; Schilsky 1909: 188; Stein & Weise 1877: 164. (**tx**) Dombrowsky 1892; Eggers 1923: 138; Eichhoff 1877c: 392, 1878b: 247, 1881a: 49, 230, 1883a: 112, 138; Fauvel 1885; Schedl 1934f: 1644; Teplouchow 1890: 261; Wachtl 1883a: 12, 1895: 8.

***emarginatus* (LeConte)** 1876: 364 (*Tomicus*). Lectotype ♀; Oregon [USA]; MCZ, Cambridge, designated by Wood 1982b: 694.
Figures: Bright 1976d: 153, Hopping 1963e: 1204.

Distribution: North America (S British Columbia in Canada/ Baja California Norte in Mexico/ California, Idaho, W Montana, Oregon, Washington in USA).

Hosts: *Pinus jeffreyi, P. monticola, P. ponderosa,* uncommon in *P. contorta* and other *P.* spp.

References: (**ay**) Schonherr 1970b; Thomas, J. B. 1967; Ting 1936: 96. (**bv**) Miller & Keen 1960: 110; Orr 1935: 1022; Schonherr 1970b; Wood, D. L. 1961b: 187–188. (**cn**) Anonymous 1960q, 1961h, 1961s, 1966f, 1968h; Browne 1968b: 364; Chamberlin 1924, 1939: 420; Doane et al. 1936; Eaton 1956: 6; Essig 1926: 520, 1958: 520; Felt 1926: 249, 1930a: 249, 267; Graham 1952; Hatch 1938: 194; Hutson 1933: 291–304; Johnson, P. C. 1940: 773–776, 1967: 1–7; Keen 1929c: 45, 1938: 114; Leach 1940b: 223; Lindgren 1980a: 64; Mathiesen 1952: 275; Miller & Keen 1960: 110; Patterson 1923: 38, 1927c: 3; Pronin 1952: 186; Ryker & Rudinsky 1979: 209; Schuder 1969: 78; Silver & Ross 1960: 99, 1961: 99; Swaine 1914: 23, 1918a: 108, 113; Wenz 1985. (**ec**) Bushing 1965: 460; Callaham & Shifrine 1960: 146; Chamberlin 1939: 420, 1958: 168–169; Craighead et al. 1927; DeLeon 1934b: 297–317; Furniss, R. L. & Carolin 1977: 388; Graham 1952; Holst 1936; Hunter & Davis 1963; Keen 1938: 114; Kinn 1971; Leach 1940b: 223; Lindquist 1970b, 1971; Marsh 1979: 169; Mathiesen 1952: 275; Mathre 1964: 353–362, 1966; Miller & Keen 1960: 110; Otvos & Stark 1985; Patterson 1927c: 3; Rice 1968; Richerson, J. V. & Borden 1972a; Rumbold 1936: 419; Shifrine & Phaff 1956: 45; Struble 1930b: 114; Thompson, W. R. 1943: 59; Thompson, W. R. & Simmonds 1964: 23, 1965: 74; Wichmann 1952b: 23. (**hb**) Bright 1976d: 157; Bright & Stark 1973: 86; Browne 1968b: 364; Chamberlin 1939: 420, 1958: 168–169; Doane et al. 1936; Eaton 1956; Essig 1926: 520, 1958: 520; Felt 1926: 249, 1930a: 249, 267; Furniss, R. L. & Carolin 1977: 388; Graham 1952; Hopping, G. 1963e: 1204; Johnson, P. C. 1967: 1–7; Keen 1929c: 45, 1933b: 297, 1938: 114; Lindgren 1980a: 64; Miller & Keen 1960: 110; Orr 1935: 1022; Rumbold 1936: 419–437; Ryker & Rudinsky 1979: 209; Swaine 1918a: 108, 113; Wood, S. L. 1982b: 694. (**ds**) Anonymous 1966f; Bright 1976d: 157; Bright & Stark 1973: 86; Browne 1968b: 364; Chamberlin 1917, 1925, 1939: 420, 1958: 168–169; Eaton 1956; Essig 1926: 520, 1958: 520; Evans, D. 1983: 33; Felt 1926: 249, 1930a: 249, 267; Furniss, R. L. & Carolin 1977: 388; Gast et al. 1989: 385; Hagedorn 1910d: 53; Henshaw 1882: 269, 1885: 148; Hopping, G. 1963e: 1205; Hopping, R. 1922; Keen 1929c: 45, 1929a: 38, 1938: 113–114, 1949a: 93; Kleine 1913b: 127, 1914b: 403, 1934a: 150; Lange 1937: 173; Leng 1920: 341; Nunberg 1958a: 492; Patterson & Hatch 1927: 1–9, 1945: 153; Salman 1933: 131–137; Schuder 1969: 78; Swaine 1909: 122, 1914: 23; Wood, S. L. 1972a: 419, 1982b: 694. (**tx**) Bright 1976d: 153, 157; Chamberlin 1939: 420, 1958: 168–169; Evans, D. 1983: 33; Hagedorn 1910a: 104; Hopkins 1915c: 183, 185; Hopping, G. 1963c: 509–510, 1963e: 1202–1205; Keen 1929a: 38; LeConte 1876: 364; Nunberg 1958a: 492; Ryker & Rudinsky 1979: 209; Swaine 1909: 122, 1915: 355, 1918a: 108, 113; Thomas, J. B. 1967; Wood, S. L. 1972a: 419, 1982b: 694. (**ms**) Hatch 1938: 194.

***erosus* (Wollaston)** 1857: 95 (*Tomicus*). Syntypes, sex?; Madera; BMNH, London.

Figures: Alkan 1946: 113, Balachowsky 1949a: 266, Grune 1979: 142, Joly 1976b:fig. 179, Tsai & Li 1959: 103, Wingfield & Marasas 1980: 66.

Distribution: Africa (Algeria/ Egypt/ Libya/ Madeira Island/ Morocco/ South Africa (introduced)/ Tunisia), Asia (Fujian, Henan, Hunan, Jiangsu, Jiangxi, Shanxi, Sichuan, Yunnan in China/ Iran/ Israel/ Jordan/ Syria/ Turkey), Europe (Bulgaria/ Corsica/ England/ France/ Greece/ Italy/ Poland/ Sardinia/ Spain/ Switzerland/ W USSR/ Yugoslavia), Fiji (introduced), South America (introduced: Chile).

Hosts: *Pinus halepensis, P. maritima, P. pinaster, P.* spp., rare in *Abies pinsapo, Cedrus libani, Picea orientalis.*

References: (**ay**) Chararas 1977b; Escherich 1923b: 545; Feytaud 1950a; Fuchs 1911a; Nunberg 1926: 51; Scherb 1971; Thomas, J. B. 1967. (**bv**) Chararas 1971b, 1973a, 1973b, 1976b, 1976c, 1977b, 1982; Chararas, Desveaux, & Kogane-Charles 1978a; Chararas & Hamza 1972; Chararas & M'Sadda 1970: 1904–1907, 1971, 1973; Chararas et al. 1982: 1094; Giesen et al. 1984; Grune 1979: 134; Jacobson 1972; Karnavar 1984; Klimetzek & Vite 1986: 239; Kohnle et al. 1988; Mendel 1983b, 1988a; Mendel & Halperin 1982; Mendel, Madar, & Golan 1985; Paiva, Pessoa, & Vite 1988; Rutledge, Chararas, & Ducauze 1988; Silverstein & Young 1976: 21. (**cn**) Acatay 1943a: 68; Androic 1966: 48; Anonymous 1970p, 1977r, 1978w, 1979p, 1985j; Baeta Neves 1941, 1952a, 1955: 44–53, 1957, 1958; Baylis, de Ronde, & James 1986; Besceli 1963; Browne 1968b: 491; Carle 1974a; Chararas 1976c, 1977c, 1978; Chararas & Hamza 1972; Chorbadzhievo 1929; Ciesla 1988; Ekici 1971: 56; Escherich 1923b: 545; Ferreira & Ferreira 1986; Feytaud 1946: 7, 1950a, 1950b; Georgebits 1974; Gois 1944; Halperin, Mendel, & Golan 1982; Hanson, H. S. 1940a; Hubault 1945; Joly 1976; Kailidis 1966a; Kailidis & Markalas 1988; Kfir 1986; Laidlaw 1947: 53; Melis 1940: 73–175; Mendel 1987, 1988c, 1988d; Mendel, Madar, & Golan 1983; Morris, H. M. 1937: 22; Nusslin 1913: 273; Polozencev & Zolotov 1969; Questienne 1979: 117; Rhumbler 1922: 322; Romanyk 1963b: 159; Russo 1946a: 40, 1946b: 313; Sargos 1947: 8; Schimitschek 1944: 223, 1952c: 59, 60, 1955a: 80, 83; Schvester

1986; Schwerdtfeger 1944a: 176, 1957a: 183; Serez 1987; Spaic 1964a: 226–236; Strohmeyer 1930: 7. (**ec**) Anonymous 1985j; Berisford, Kulman, & Pienkowski 1970: 484; Carle 1971, 1974a, 1975a; Chararas 1959c, 1963a, 1964a, 1964b; Chararas, Desveaux, & Kogane-Charles 1978a; Chararas et al. 1982: 1094; Fry 1989: 17; Halperin & Holzschuh 1984: 27; Kailidis 1966a; Kfir 1986; Kleine 1908c: 214, 1909a: 48, 78, 1944: 73; Masutti 1959: 268, 303; Mendel 1983b, 1985, 1986a, 1986c: 115, 1986d: 130, 1988c, 1988d; Mendel & Halperin 1981; Mendel, Podoler, & Livne 1989; Novak, P. 1952: 417; Nusslin 1927: 337; Poinar 1975: 161; Purrini & Halperin 1983; Schimitschek 1955a: 80, 83; Schwerdtfeger 1944a: 176, 1957a: 183; Shaw, M. J. P. 1983; Wichmann 1955a: 102, 1958: 230; Wingfield & Knox-Davies 1980; Wingfield & Marasas 1980; Wingfield, Strauss, & Tribe 1985. (**hb**) Acatay 1943a: 68; Adeli 1972: 14; Alkan 1946: 113; Anonymous 1985j; Baeta Neves 1945, 1955: 44–55; Bargmann 1906; Besceli 1963: 50–57; Browne 1968b: 491; Cabral 1959; Carle 1971; Cecconi 1906, 1924; Chararas 1962c: 370, 1963a, 1964a, 1977b; Chararas & M'Sadda 1973; Charvat 1950; Chorbadzhievo 1929; Dombrowsky 1892; Dzhambazishvili 1961: 751–757, 1962; Ekici 1971; Escherich 1923b: 545; Ferreira & Ferreira 1986, 1989; Feytaud 1946, 1950a; Georgebits 1974; Gois 1944; Gyorfi 1957; Halperin & Holzschuh 1984: 27; Henschel 1877b, 1895: 185; Joly 1976; Keler 1926: 169–170; Knotek 1898b: 333, 1899b: 14, 1901: 573; Lengerken 1954: 93; Masutti 1959: 268, 303, 1964; Mendel 1983b, 1987; Mendel & Halperin 1982; Mendel, Madar, & Golan 1985; Munro 1926: 70; Nusslin 1913: 273, 1927: 337; Perris 1856: 184; Peyerimhoff 1919: 256; Postner 1974: 450; Questienne 1979: 117; Rhumbler 1922: 322; Schedl 1981b: 88; Schimitschek 1944: 223, 1955a: 80, 83; Schwerdtfeger 1944a: 176, 1957a: 183; Spessivtsev 1913a: 86; Stark 1952: 414; Strohmeyer 1930: 7; Tschorbadjiev 1929: 175; Wingfield & Marasas 1980; Zocchi 1959: 103, 106. (**ds**) Acatay 1961: 3; Acloque 1896; Adeli 1972: 14; Androic 1966: 48; Anonymous 1970p, 1977r, 1978w, 1979p; Atkinson 1921; Audras & Schaefer 1957; Baeta Neves 1945, 1952a, 1955; Barthe 1896; Beaver 1989a: 23; Bedel 1888b: 401, 418; Berisford, Kulman, & Pienkowski 1970: 484; Bigaghi 1967; Brakman 1966b: 207; Browne 1968b: 491; Buresh & Lazarov 1956; Cabral 1959; Cecconi 1906; Chararas 1963: 4498, 1964a, 1971b; Charvat 1950; Chorbadzhievo 1929; Ciesla 1988; Donisthorpe 1931: 122; Eggers 1912f; Escalera 1919; Escherich 1923b: 545; Fauvel 1897; Friederichs 1919; Ganglbauer 1904; Gemminger & Harold 1872: 2690; Georgebits 1974; Georghiou 1977: 74; Gillerfors 1988; Grune 1979: 143; Hagedorn 1910d: 53; Halperin 1966: 68; Halperin & Holzschuh 1984: 27; Hariri 1971: 262; Heyden, Reitter, & Weise 1891: 672, 1906: 712; Hoffmann 1936; Holdhaus 1923: 115; Jansson 1940: 63; Joly 1976; Kadyrov 1988: 43, 45, 1989; Kailidis 1985; Kailidis & Markalas 1988; Kleine 1913a: 35, 1913b: 127, 1914a: 16, 22, 1934a: 150; Kloft & Hinks 1945: 217; Knotek 1898b: 333, 1899b: 14, 1901: 573; Langhoffer 1915c: 158; Larroche & Torossian 1971; Liebmann 1939: 153; Linder 1953: 71; Lomnicki 1913b: 148; Lucht 1987: 279; Luna de Carvalho 1947: 15; Lundblad 1958: 489; Malazgirt 1966: 64; Mequignon 1936: 15, 38; Mitter 1984: 6; Nash 1989; Normand 1937: 269; Novak, P. 1952: 417, 1964; Nunberg 1928b: 117, 1964a: 236; Peyerimhoff 1919: 256, 1933b: 362; Pfeffer 1935: 158, 1936: 90, 1947d: 128, 1984: 277, 1989a: 77; Pittioni 1943: 176; Pjatnitskii 1930a: 165; Plaza & Gil 1982: 241; Razzauti 1921: 119; Reitter 1894a: 83, 1916: 305; Romanyk 1963b: 159, 1966: 87; Ruskov 1928c: 62; Sahlberg 1903b: 63; Sainte-Claire 1914: 473; Sainte-Claire & Mequignon 1938: 449; Schedl 1961b: 185, 1963e: 155, 1964a, 1967c: 72, 1969g: 292, 1971d: 425, 1972n: 351, 1979i: 292, 1981b: 88; Schilsky 1909: 188; Schmitz 1898: 157; Seidlitz 1891a: 566, 1891b: 611; Shaw 1983; Stark 1926g: 154, 1927b: 90, 1952: 414; Stein & Weise 1877: 164; Teocchi 1965b; Thompson, G. H. 1959a: 95; Tredl 1907: 16; Tschorbadjiev 1929: 175; Wichmann 1955a: 102; Winter, T. G. 1983: 16; Yin, Huang, & Li 1984: 138; Zocchi 1959: 103, 106. (**tx**) Acloque 1896; Alkan 1946: 113; Balachowsky 1949a: 269, 1952: 135; Bedel 1888b: 401, 418; Cabral 1959; Ceballos 1945; Charvat 1950; Dombrowsky 1892; Duffy 1953; Eggers 1912f: 29, 39–43; Escherich 1923b: 545; Fauvel 1887, 1889; Ferrari 1867a: 75; Fuchs 1911a; Gebien 1907: 197; Grune 1979: 142–143; Hagedorn 1910a: 104; Hoffmann 1936: 42; Hopping, G. 1963b: 61, 63; Joly 1976b:fig. 179; Keler 1925a: 186–194; Kuhnt 1913: 1058; Lucht 1987: 279; Nunberg 1926: 51, 59, 1956c: 164; Pfeffer 1955a: 255; Plaza & Gil 1982: 241, 243, 248; Postner 1974: 450; Quaschik 1953: 35; Questienne 1979: 114; Reitter 1894a: 83, 1913a: 109, 1916: 305; Rhumbler 1922: 322; Schedl 1934f: 1645, 1946a: 14, 1959h: 100, 1981b: 88; Scherb 1971; Seidlitz 1891a: 566, 1891b: 611; Spessivtsev 1913a: 86; Stark 1952: 414; Thomas, J. B. 1967; Tsai & Li 1959: 103; Wachtl 1895: 8; Weber, L. 1912: 30; Wingfield & Marasas 1980: 66; Wollaston 1857: 95, 1865: 236; Yin, Huang, Li 1984: 138. (**ms**) Chararas 1971a: 853; Eggers 1910b; Keler 1925a: 186–194; Mendel 1986a; Sedlaczek 1913: 455; Weber, L. 1912: 30.

rectangulus Ferrari 1867: 83 (*Tomicus*). Syntypes, sex?; Gall. merid. et Algeria; not located. Synonymy: Balachowsky 1949a: 269, Pfeffer 1955: 262.

References: (**cn**) Barbey 1922a, 1925: 241; Bezares 1921; Feytaud 1946; Judeich & Nitsche 1895: 500; Rhumbler 1927: 337; Russo 1946a: 24, 43; Schimitschek 1937c: 60, 1938c: 2118,

1939d: 2110. (**ec**) Barbey 1924b, 1927; Russo 1946a: 24, 43; Schimitschek 1941a: 313; Wachtl 1879: 51. (**hb**) Barbey 1901: 24, 89, 1925: 240; Dombrowsky 1887, 1892; Eichhoff 1881a: 50, 233; Feytaud 1946; Henschel 1878b, 1887b, 1895a: 185; Judeich & Nitsche 1895: 500; Knotek 1894d: 558; Lunardoni & Leonardi 1889: 472; Rhumbler 1927: 337; Russo 1946b: 297, 313; Wachtl 1876a: 455. (**ds**) Barbey 1922a, 1924b; Buresh & Lazarov 1956; Fauvel 1885; Grouzelle 1905; Henschel 1895a: 185; Heyden, Reitter, & Weise 1883: 182; Hlawa 1870; Judeich & Nitsche 1895: 500; Knotek 1892a: 37, 1894a: 558; Kraatz 1869: 59; Lunardoni & Leonardi 1889: 472; Oliviera 1887: 328; Reitter 1894a: 82; Schilsky 1909: 188; Schneider & Leder 1977: 55; Stein 1868: 114; Stein & Weise 1877: 164; Tschorbadzhiev 1925: 57–61; Wachtl 1876a: 455. (**tx**) Balachowsky 1949a: 269; Barbey 1901: 24, 89; Dombrowsky 1887, 1892; Eichhoff 1868d: 419, 1869d: 139, 1877b: 118, 1877c: 387, 1878b: 257–260; 1881a: 50, 233, 1883a: 112, 138; Fauvel 1885; Ferrari 1867a: 83, 1867b: 108; Henschel 1878a, 1895a: 185; Heyden 1875: 392; Judeich & Nitsche 1895: 500; Knotek 1892a: 37; Kraatz 1876d: 25; Lunardoni & Leonardi 1889: 472; Pfeffer 1955: 262; Portevin 1935: 338; Reitter 1894a: 82; Rey 1892b: 30; Rhumbler 1927: 337; Schedl 1934f: 1645; Schimitschek 1937c: 60; Wachtl 1883a: 7. (**ms**) Eichhoff 1868d: 419.

***grandicollis* (Eichhoff)** 1868a: 402 (*Tomicus*). Syntypes ♂ ♂; Amerique boreali; IRSNB, Brussels.

Figures: Blandford 1898b:pl. 7, Bright 1976d: 154, Dillon & Dillon 1961: 813, Goyer et al. 1980: 20, Hopping 1965e: 425, Morgan 1967: 141.

Distribution: Antilles Islands (Bahama Islands/ Cuba/ Dominican Republic in Hispanola/ Jamaica), Australia (introduced), North America (Manitoba, Ontario, Quebec in Canada/ El Salvador/ Guatemala/ Honduras/ Chiapas, Chihuahua, Durango, Hidalgo, Jalisco, Mexico, Michoacan, Morelos, Puebla, Sinaloa in Mexico/ Nicaragua/ Alabama, Arkansas, Connecticut, District of Columbia, Florida, Georgia, Illinois, Indiana, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, E Montana, Nebraska, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, West Virginia, Wisconsin in USA).

Hosts: *Pinus* spp.

References: (**ay**) Hughes 1974; Kudon & Berisford 1981; Lanier 1987b; Miller, M. C. 1979a, 1979b, 1981; Payne et al. 1972; Schonherr 1970b; Smith, M. T. et al. 1988; Thomas, J. B. 1967; Wilkinson 1962, 1963: 19; Wilkinson et al. 1967. (**bv**) All & Anderson 1972; Anderson, N. H. & Anderson 1968; Anderson, R. F. 1977; Annila 1971a: 13; Anonymous 1961h, 1971c, 1971v, 1979a; Atkinson, Foltz, & Connor 1988; Austara 1978: 147; Bakke 1973; Barr, B. A. 1969: 642; Bennett & Ostmark 1972; Berisford & Franklin 1969: 93–96, 1971; Billings 1984b; Birch 1978b; Birch & Svihra 1979b; Birch et al. 1980; Borden et al. 1981: 561; Cameron, R. S. 1987; Dethier 1947; Dixon 1983; Dixon & Payne 1979b, 1980; Du 1987; Elliott, E. W. 1970; Hain & Anderson 1976a, 1976b; Hertel, Hain, & Anderson 1969; Hetrick 1960; Hughes 1974; Inscoe 1982; Inscoe & Beroza 1976: 147; Jacobson 1965, 1972; Klassen, Ridgway, & Inscoe 1982; Lanier & Burkholder 1974; Mason, R. R. 1965a, 1967, 1970; Morgan, F. D. 1967; Mori 1976c; Orr 1935: 1021; Payne & Wood 1981: 492; Renwick & Vite 1972; Roling & Kearby 1975b; Schonherr 1970b; Silverstein & Young 1976: 21; Smith, M. T. et al. 1988; Svihra 1982; Svihra, Paine, & Birch 1980; Thatcher, R. C. & Connor 1985; Turnbow & Franklin 1980; Vite, Bakke, & Renwick 1972: 1971; Vite, Gara, & von Scheller 1964; Vite, Hedden, & Mori 1976; Vite, Ohloff, & Billings 1978; Vite & Pitman 1967: 683–701; Vite & Renwick 1971b; Wagner, Flamm, & Coulson 1985; Werner 1971, 1972a, 1972b, 1972c; Wilkinson 1962, 1964: 58; Wilkinson et al. 1967: 185–195; Witanachchi 1980, 1986; Witanachchi & Morgan 1981; Yearian 1967b: 3356. (**cn**) Allen 1973; Anderson, D. A. 1952: 2–6; Anderson, R. F. 1966, 1977; Anonymous 1952h: 7, 1960h: 6, 1960i, 1960j: 23, 1960q, 1962h, 1963j, 1964h, 1965b, 1966f, 1967f, 1968g, 1970j: 6, 1971e: 6, 1974e, 1979a, 1981u, 1985k: 46; Baker, W. L. 1972: 260; Beal et al. 1952; Bednall 1960: 12, 1961: 12, 1962: 12, 1964: 12; Bennett, W. H. 1954, 1955, 1956a: 2–3, 7–9, 1956a: 2, 1956b, 1957; Bennett, W. H. & Ostmark 1972; Berisford 1969a, 1969b: 961–962; Berisford & Dahlsten 1989; Berisford et al. 1986; Berrios, Menendez, & Rodriguez 1987; Bing 1985; Birch & Svihra 1979b; Blackman 1950; Bongberg 1957; Browne 1968b: 365; Cameron, R. S. 1987; Chamberlin 1939: 417; Chenier & Philogene 1989; Cibulsky & Hyche 1974, 1977; Cory 1914: 168–170; Coulson & Witter 1984: 536; Craighead 1927: 1–12, 1935: 136; Doane et al. 1936; Downing, Ward, & Ciesla 1970: 29; Drooz 1985: 359; Ebel, Merkel, & Kowal 1964, 1968, 1971, 1975, 1977; Eikenbary, Arnold, & Pinkston 1974; Elliot & Morley 1938; Fatzinger 1985b; Felt 1935; Felt & Bromley 1942: 170; Friend 1940: 222–223, 293–331; Gentry, G. R. et al 1979: 779; Hamel 1980: 774; Harrison 1956; Hetrick 1942, 1943, 1960; Hetrick & Moses 1932; Hochmut & Milan Manso 1975; Hodges & Pickard 1971: 49; Hofacker et al. 1989; Hoffard & Oak 1980; Houser 1932: 70; Johnston & Coyne 1954; Jones & Ford 1954: 1–6; Knight 1971: 43; Koch, P. 1972; Kowal 1953: 106, 1955b: 1, 1955d: 4, 1956a: 4, 1957b:

20, 1957d: 175, 1957e: 12, 1958a: 402, 1959a: 39, 1959b: 161; Kowal & Ebel 1971, 1977; Kulman 1964b: 322–325; Leach 1938: 24, 1940b: 219; Leach et al. 1934: 315–341, 1937: 317; Lee 1954a: 5; Lewis 1973; Lexon 1939: 269; Lindquist, O. H. & Syme 1981: 61; Mason, G. N. & Jones 1969: 5; Mason, R. R. 1965a; Mattson & Haack 1987; McCowan 1961; Merkel & Kowal 1956: 3; Merkel & Kulman 1955: 5; Middleton 1928b: 423; Miller, M. C. 1979a, 1979b; Morgan, F. D. 1967: 137, 1974, 1989; Nagel 1959: 4; Neal 1979: 799; Neumann 1987; Neumann & Marks 1976; Neumann & Morey 1984; O'Byrne 1946: 3–6; Ollieu & Mason 1967: 7, 1968: 8; Orr 1934: 58–59, 1937: 29; Orr & Kowal 1956: 654; Payne & Wood 1981: 492; Plumb 1958: 10; Polivka 1938: 130, 1940: 230; Price 1957: 99, 1987; Ragenovich & Coster 1974; Robertson & Whitfield 1968: 1–8; Robinson, J. V. 1981; Rose, W. F., Billings, & Vite 1981; Ross & Mattoon 1939: 48; Schenk & Benjamin 1964: 570–574; Schenk et al. 1957a: 840; Seymour 1971: 9; Sippell, Dance, & Rose 1966: 57; Snyder 1935: 15, 1936: 19; South 1988; St. George 1924: 38, 1925: 50, 1928: 15, 1929b: 11, 1930: 825–828; Swaine 1918a: 108, 113; Syme & Nystrom 1988: 58; Thatcher, R. C. 1960: 1–25; Thomas, J. B. 1970a; Torrent & Romanyk 1967: 81, 1968; Tsankov 1977; Tsankov et al. 1974: 12; Tucker 1906: 588; Ward, J. G. D., Kucera, & Downing 1971: 30; Wilkinson 1962: 43–44, 1964; Wilkinson & Foltz 1982; William, L. H. 1988: 73; Williams, I. F. 1980; Wyman 1932: 46; Younan 1979. (**ec**) Allen 1973; Anderson, R. F. 1977; Bednall 1963: 11; Berisford & Dahlsten 1989; Berisford & Franklin 1969, 1969a, 1969b, 1971, 1972, 1974b; Berisford, Kulmam, & Pienkowski 1970; Berisford et al. 1971: 236; Bing 1985; Birch 1978b; Birch & Svihra 1979b; Blakeslee & Oak 1979; Borden et al. 1981: 561; Brand et al. 1975; Brower 1974, 1977; Buchanan 1964, 1965: 35; Burks 1979: 799; Bushing 1965: 460; Butcher & Havel 1976; Callaham & Shifrine 1960: 146; Chamberlin 1939: 417; Chevis & Stukely 1982; Clark & Osgood 1964b; Craighead et al. 1927; Cross & Moser 1971; Dale 1967; Dixon & Payne 1979b, 1980; Doggett 1973; Elliott, E. W. 1970; Fry 1989: 17; Gara & Coster 1968: 77–86; Gibb, K. S. & Fisher 1987; Grissell 1979: 764; Haliburton 1943; Hammerle 1926: 8; Hanover 1975; Heqvist 1959: 181; Hertel, Hain, & Anderson 1969: 1084–1091; Hetrick 1949c, 1960; Himelick 1982; Hines, J. W. & Heikkenen 1977; Hirschmann & Wisniewski 1982, 1983; Hodges & Pickard 1971: 47; Hoffard & Coster 1976; Holst 1936, 1937: 676; Houser 1931: 657, 1932: 70; Hunter & Davis 1963; Jones 1954; Kabir & Giese 1966b: 897; King, W. E. 1967b: 4606; King, W. E. & Fox 1969: 924–925; Kinn 1984a; Kudon 1979b; Kudon & Berisford 1980, 1981; Kulhavy et al. 1989; Leach 1940b: 219; Leach et al. 1934: 129, 1937: 317; Lindquist 1964, 1969c; Loris 1973; Marsh 1979: 148; Mason, R. R. 1967; Mason, W. R. M. 1978; Massey 1957: 34, 1958: 30; Matthews 1970; Mattson & Haack 1987; Mizell, Frazier, & Nebeker 1984; Morgan, F. D. 1967, 1974; Nelson 1934: 329; Overgaard & Nachod 1971; Paine, Birch, & Svihra 1981; Poinar 1975: 162; Reid 1957b: 7; Rennerfelt 1951: 121; Richerson, J. V. & Borden 1972a; Riley & Goyer 1986; Robillard 1971: 1773; Rohlfs & Hyche 1981, 1984; Rose, W. F., Billings, & Vite 1981; Rumbold 1931c: 847, 1936: 419; Sampson 1984; Samson & Smibert 1986; Savely 1939: 334; Schenk & Benjamin 1964; Schenk et al. 1957a: 840; Schmitt 1980; Schmitt & Goyer 1983a; Slaby 1947: 379; Smiley & Moser 1974; St. George 1928: 15; Stockman 1957: 245; Stone & Simpson 1987; Tehon 1942: 238; Tomalak, Welch, & Garroway 1989b; Vaartaja 1966: 40–43; Vite, Gara, & von Scheller 1964: 461–470; Wagner, Flamm, & Coulson 1985; Webb 1945: 70; Whitney 1971: 1502; Wilkinson 1964; Woodring 1966c; Woodring & Moser 1970; Yearian 1967b; Yearian, Gouger, & Wilkinson 1972; Yearian & Wilkinson 1965, 1967, 1968: 43–45; Younan 1979. (**hb**) All & Anderson 1972; Anderson, N. H. & Anderson 1968: 23; Anonymous 1970j: 6, 1979a, 1985: 46; Atkinson, Foltz, & Connor 1988; Atkinson et al. 1986: 32; Baker, W. L. 1972: 260; Beal & Massey 1945: 142–144; Bennett, W. H. 1955; Bennett, W. H. & Ostmark 1972; Berisford & Franklin 1971; Blackman 1922b, 1950; Bongberg 1959a; Bright 1976d: 166; Brower 1974; Browne 1968b: 365; Burgos & Saucedo 1983: 95; Chamberlin 1939: 417; Coulson & Witter 1984: 536; Deyrup & Atkinson 1987a: 65; Dillon & Dillon 1961: 12; Doane et al. 1936; Drooz 1985: 359; Eikenbary, Arnold, & Pinkston 1974; Flamm & Coulson 1988; Gast et al. 1989: 383; Gibb, K. S. & Fisher 1987; Hain & Anderson 1976a; Hertel, Hain, & Anderson 1969; Hochmut & Milan Manso 1975; Hoffard & Coster 1976; Hoffmann & St. George 1949: 71; Koch, P. 1972; Kowal & Ebel 1971; Lewis 1973; Mason, R. R. 1965a, 1965b, 1967: 2215, 1970; Mohr 1955: 7; Morgan, F. D. 1967; Neumann 1987; Neumann & Morey 1984; Orr 1925: 1021–1022; Ostmark 1968; Plumb 1958: 10; Rimes 1959: 4, 353; St. George 1929b: 11; Swaine 1918a: 108, 113; Thatcher, R. C. 1960; Thatcher, R. C. & Connor 1985; Thatcher, R. C., Coster, & Payne 1978; Wagner, Flamm, & Coulson 1985; Wilkinson 1963; Wilkinson & Foltz 1982; Williams, I. L. 1980; Witanachchi 1980; Wolcott & Montgomery 1933: 166; Wood, S. L. 1982b: 699; Yearian 1967b; Yearian, Gouger, & Wilkinson 1972; Yearian & Wilkinson 1965, 1967: 25–27; Younan 1979. (**ds**) Anderson, R. F. 1977; Anonymous 1926c: 519, 1960: 3, 1963j, 1964h, 1965b, 1966f, 1967f, 1968g, 1974e, 1985k, 1985n; Atkinson & Equihua 1985a: 86, 1985b: 235; Bain 1974: 17; Beal &

Massey 1945: 142–144; Bednell 1960: 12; Bennett, W. H. 1954; Berisford et al. 1971: 236; Berrios, Menendez, & Rodriguez 1987; Blackman 1922b, 1950; Blatchley & Leng 1916: 638; Bongberg 1957; Bongberg & Bennett 1960: 1; Bright 1976d: 166, 1982b: 164, 1985c: 173; Brimblecombe 1953: 21; Britton 1920a; Browne 1968b: 365; Burgos & Saucedo 1983: 95; Chamberlin 1925, 1939: 417; DeLeon 1942a; Deyrup 1981b: 6; Deyrup & Atkinson 1987a: 65; Dodge 1938; Drooz 1985: 359; Frost 1964: 144; Garraway 1986; Gast et al. 1989: 383; Gemminger & Harold 1872: 2690; Hagedorn 1910d: 54; Hoffmann & St. George 1949: 71; Hopping, G. 1965e: 423; Howden & Vogt 1951; Kirk 1969, 1970; Kleine 1913b: 128, 1934a: 150; Kudon & Berisford 1981; Leng 1920: 341; Leonard 1928: 519; Lindquist, O. H. & Syme 1981: 61; Mason, R. R. 1970: 1036–1041; Merkel & Kowal 1956: 3; Morgan, F. D. 1967; Nagel 1959: 4; Notman 1920: 184; Nunberg 1974; Ostmark 1968; Schedl 1971f: 147, 1972g: 39; Schuder 1958: 150; Swaine 1909: 122; Syme & Nystrom 1988: 58; Turnbow & Franklin 1980; Wilkinson 1962; Wolcott & Montgomery 1933: 166; Wood, S. L. 1977a: 72, 1982b: 699. (**tx**) Anonymous 1970f: 7; Baker, W. L. 1972: 261; Beal & Massey 1945: 142–144; Benoit 1985: 137; Blackman 1922b: 112–114; Blandford 1898c: 6; Blatchley & Leng 1916: 638; Bright 1976d: 154, 166, 1985c: 173; Carne et al. 1980; Chamberlin 1939: 417; Dillon & Dillon 1961: 812–813; Dodge 1938: 48–49; Eichhoff 1868a: 402, 1878b: 231; Eikenbary, Arnold, & Pinkston 1974; Goyer et al. 1980: 20; Hagedorn 1910a: 104; Hopkins 1905b: 77, Hopping, G. 1963b: 67, 1963c: 514, 1965e: 423, 425; Lanier 1987a: 107, 1987b; LeConte 1868: 177, 1878a: 469; Lindquist, O. H. & Syme 1981: 61; Morgan, F. D. 1967: 141; Schedl 1955b: 276, 278, 1955g: 41; Swaine 1909: 122, 1916b: 186–188, 1918a: 108, 113, 1924: 71; Syme & Nystrom 1988: 58; Thomas, J. B. 1967; Titus, Meikle, & Harrison 1985: 77; Wood, S. L. 1977c: 385, 1982b: 699. (**ms**) Anderson, R. F. 1966; Anderson, R. F. et al. 1980; Anonymous 1985: 46; Bongberg 1959a; Chararas 1971a: 853; Chenier & Philogene 1989; Clark & Osgood 1964a, 1964b; Foltz, Merkel, & Wilkinson 1984; Holst 1937; Jones 1954; Kowal 1957b: 20; Lee 1954: 5; Lewis 1973; Mori 1976c; Plumb 1958: 10; Robinson, J. V. 1981; Rose, W. F., Billings, & Vite 1981; South 1988; Wilkinson & Foltz 1980; Yearian & Wilkinson 1965, 1967.

cacographus LeConte 1868(Sept.): 162 (*Tomicus*). Lectotype, sex?; Illinois [USA]; MCZ, Cambridge, designated by Wood 1982b: 699. Synonymy: Blandford 1898c: 6.
References: (**ay**) Hopkins 1894g. (**bv**) Clemens 1916. (**cn**) Bruner 1893: 199, 1894: 187; Clemens 1916; Felt 1901: 485, 1902b, 1906: 338–374, 1924: 266, 1926: 248, 266, 1930a: 248, 266; Hopkins 1894c, 1894d, 1894g: 279, 1899c: 253, 422; Johnson 1897: 79–80, 110, 345–364; Packard 1881: 166–170, 1890: 713; Smith, J. B. 1900: 363. (**ec**) Ashmead 1883b, 1894; Felt 1906: 356. (**hb**) Chittenden 1890, 1897b, 1899a: 55–61; Clemens 1916; Felt 1906: 356, 1926: 248, 266, 1930a: 248, 266; Hopkins 1893c: 189, 1894g, 1899c: 253, 422; Pierce, W. D. 1907: 292; Schwarz 1888a: 80, 1894a: 16, 27; Wolcott & Montgomery 1933: 166. (**ds**) Chittenden 1890, 1897b, 1899a; Felt 1926: 248, 266, 1930a: 248, 266; Hamilton 1859b: 318; Henshaw 1882: 269, 1885: 148; Hopkins 1893a: 138, 145, 148, 1893b: 212, 1899: 422; Leng 1920: 341; Packard 1890: 713; Schwarz 1878d: 469, 1888a: 80; Smith, J. B. 1900: 363, 1910: 403; Swaine 1909: 123; Wolcott & Montgomery 1933: 166. (**tx**) Blandford 1898c: 6; Clemens 1916; Eichhoff 1878b: 231; LeConte 1868: 162, 1876: 362–364; Swaine 1909: 123, 1918a: 113; Wood, S. L. 1982b: 699. (**ms**) Eckstein 1900c.

cribricollis Eichhoff 1869a: 273 (*Tomicus*). Holotype ♂; Mexico; IRSNB, Brussels. Synonymy: Wood 1957c: 397, 1977c: 385.
References: (**ay**) Lanier 1987b; Mankins, J. V. 1980; Thomas, J. B. 1967. (**bv**) Barr, B. A. 1969: 642; Perez Chavez 1981; Silverstein & Young 1976: 2; Vite, Bakke, & Renwick 1972: 1971. (**cn**) Johnston 1939; Mankins, J. V. 1980; Rose-Chaffin 1967b: 4181–4182; Schwerdtfeger 1954: 278, 1956b: 41, 43, 1960b: 258; Vite & Pitman 1967: 683–701; Yates, H. O. 1972a. (**ec**) Becker 1955; Furniss, R. L. & Carolin 1977: 385; Hirschmann 1972b, 1978b; Lindquist 1969c, 1970b, 1971; Rose-Chaffin 1967b; Schwerdtfeger 1956: 43, 1960b: 258; Woodring & Moser 1970, 1975. (**hb**) Becker 1955; Furniss, R. L. & Carolin 1977: 385; Mankins, J. V. 1980; Schwerdtfeger 1956b: 41, 43; Yates, H. O. 1972b. (**ds**) Bates 1832; Blackwelder 1947:782; Blandford 1898b; DeLeon 1938, 1942a; Ferrer 1942; Furniss, R. L. & Carolin 1977: 394; Gemminger & Harold 1872: 2690; Hagedorn 1910d: 52; Hopping, G. 1965e: 432; Kleine 1913b: 127, 1914b: 350, 362; Schedl 1960a: 75, 1962i: 74, 1963c: 159, 1977e: 43; Schwerdtfeger 1960b: 258; Thomas, J. B. 1966; Wood, S. L. 1957c: 397. (**tx**) Blandford 1898b; DeLeon 1938; Eichhoff 1869a: 273, 1878b: 229; Hagedorn 1910a: 104; Hopkins 1905b: 77; Hopping, G. 1963c: 514, 1965e: 423, 425; Lanier 1987a: 108, 1987b; Mankins, J. V. 1980; Schedl 1940a: 349, 1955g: 41, 1960g: 8; Thomas, J. B. 1967; Wood, S. L. 1957c: 397, 1977c: 385; Yates, H. O. 1972b, 1977: 103.

chagnoni Swaine 1916b: 186. Holotype ♂; Montreal Island, Quebec [Canada]; CNCI, Ottawa. Synonymy: Hopping 1965e: 423.

References: (**cn**) Blackman 1950; Craighead 1924: 28–91, 1927: 1–12; Doane et al. 1936; Schenk et al. 1957a: 840; Schuder 1969: 79; Swaine 1918a: 108, 113; Swaine et al. 1924: 1–27, pl. 22. (**ec**) Hunter & Davies 1963; Lindquist, E. E. 1964; Schenk et al. 1957a: 840. (**hb**) Blackman 1950; Chamberlin 1939: 418; Doane et al. 1936; Swaine 1918a: 108, 113; Swaine et al. 1924:pl. 22. (**ds**) Anonymous 1926c: 519; Beaulne 1956; Blackman 1950; Broun 1934; Chamberlin 1925, 1939: 418; Dodge 1938: 47, 49; Kleine 1934a: 150; Leng 1920: 341; Leonard 1928: 519; Schuder 1969: 79; Thomas, J. B. 1957: 4. (**tx**) Bright 1967b: 675; Chamberlin 1939: 418; Dodge 1938: 47, 49; Hoebeke 1978; Hopping, G. 1963c: 514, 1965e: 423; de Ruette 1970: 102; Schedl 1955g: 39; Schuder 1969: 79; Swaine 1916b: 186–188, 1918a: 108, 113; Thomas, J. B. 1957: 4.

cloudcrofti Swaine 1924c: 70. Holotype ♀; Cloudcroft, New Mexico [USA]; CNCI, Ottawa. Synonymy: Wood 1957c: 397.

References: (**cn**) Doane et al. 1936; Keen 1938: 113, 1952c: 148; Schwerdtfeger 1956b: 42. (**ec**) Keen 1938: 113. (**hb**) Chamberlin 1939: 420; Doane et al. 1936; Keen 1938: 113, 1952c: 148; Schwerdtfeger 1956b: 42. (**ds**) Blackwelder 1947; Chamberlin 1939: 420; Ferrer 1942; Keen 1929a: 37, 1938: 113, 1952c: 148; Leng & Mutchler 1927: 52. (**tx**) Bright 1967b: 675; Chamberlin 1939: 420; Keen 1929a: 37; de Ruette 1970: 102; Schedl 1940a: 349, 1955g: 40; Swaine 1924c: 70–72; Wood, S. L. 1957c: 397.

***hauseri* Reitter** 1894a: 81. Syntypes, sex?; Thian-Schan im sudl. Turkestan; NHMB, Budapest.

Figures: Tsai & Li 1959: 99, Yin, Huang, & Li 1984: 130–131.

Distribution: Asia (Xinjiang in China/ Turkey).

Hosts: *Picea schrenkiana*.

References: (**cn**) Trofimov 1979. (**ec**) Kostin 1964: 120; Marikovskii 1956: 73; Zinovjev 1957: 323. (**hb**) Budkov 1897; Kostin 1960: 135; Stark 1952: 400; Zinovjev 1957: 323. (**ds**) Budkov 1897; Hagedorn 1910d: 54; Heyden 1898: 77; Kadyrov 1989; Kleine 1913b: 128, 1914b: 245, 247, 1934a: 150; Parfentev 1951: 429, 432; Pittioni 1943: 176; Reitter 1894a: 81; Semenov 1904: 38; Stark 1952: 400; Yin, Huang, & Li 1984: 130. (**tx**) Hagedorn 1910a: 104; Reitter 1894a: 81, 1913a: 107; Schedl 1934f: 1645, 1950a: 75–76; Semenov 1904: 38; Stark 1952: 400; Tsai & Li 1959: 99; Yin, Huang, & Li 1984: 130–131.

***hoppingi* Lanier** 1970: 1145. Holotype ♀; 32 km S Chiricahua Nat. Mon., Arizona [USA]; CNCI, Ottawa.

Distribution: North Arizona (Chihuahua, Hidalgo, Mexico in Mexico/ S Arizona, W Texas in USA).

Hosts: *Pinus cembroides*.

Notes: (1) A sibling species of *confusus* LeConte; Cane et al. 1990 found isozyme characters that distinguish it.

References: (**cn**) Hofacker et al. 1989; Ragenovich 1980: 21. (**ec**) Furniss, R. L. & Carolin 1977: 394. (**hb**) Furniss, R. L. & Carolin 1977: 394. (**ds**) Furniss, R. L. & Carolin 1977: 394; Wood, S. L. 1982b: 705. (**tx**) Cane et al. 1990; Lanier 1970: 1145; McNamara 1977: 196; Wood, S. L. 1982b: 705.

***hunteri* Swaine** 1917: 31. Holotype ♀; Creede, Colorado [USA]; SMUK, Lawrence.

Figures: Hopping 1965b: 536.

Distribution: North America (Arizona, Colorado, Utah in USA).

Hosts: *Picea pungens*, accidental in *P. engelmannii*.

References: (**cn**) Swaine 1918a: 110, 118. (**ec**) Davidson 1958; Furniss, R. L. & Carolin 1977: 384; Lindquist, E. E. 1969c. (**hb**) Chamberlin 1939: 430; Furniss, R. L. & Carolin 1977: 384; Swaine 1918a: 110, 118; Wood, S. L. 1960b: 67, 1982b: 681. (**ds**) Chamberlin 1939: 430; Furniss, R. L. & Carolin 1977: 393; Hopping, G. 1965b: 535; Leng 1920: 341; Wood, S. L. 1982b: 681. (**tx**) Bright 1967b: 675; Chamberlin 1939: 430; Hoebeke 1978; Hopping, G. 1963c: 514, 1965b: 535; de Ruette 1970: 103; Swaine 1917: 31, 1918a: 110, 118; Wood, S. L. 1960b: 67, 1982b: 681.

***integer* (Eichhoff)** 1869a: 273 (*Tomicus*). Syntypes, sex?; Mexico; IRSNB, Brussels.

Figures: Atkinson et al. 1986: 33.

Distribution: North America (British Columbia in Canada/ Guatemala/ Chihuahua, Durango, Hidalgo, Jalisco, Mexico, Michoacan, Puebla, Tlaxcala, Veracruz, Zacatecas in Mexico/ Arizona, California, Colorado, Idaho, Montana, New Mexico, Oregon, South Dakota, Utah, Washington, Wyoming in USA).

Hosts: *Pinus* sp.

References: (**bv**) Silverstein & Young 1976: 21; Vite, Bakke, & Renwick 1972: 1971. (**cn**) Anonymous 1963j; Blackman 1931c; Chamberlin 1924, 1939: 424; Currie 1905: 73; Doane et al. 1936; Essig 1926: 520; Felt 1926: 248, 266, 1930a: 248, 267; Hopkins 1904a: 18, 1905: 75–77; Hornibrook 1936; Keen 1938: 115, 1952c: 149; Leach 1940b: 223; Lindgren 1980a: 64; Mathiesen 1952: 274; Patterson 1930: 3; Schwerdtfeger 1956b: 50; Stevens, Brewer, & Leatherman 1980: 25, 1982: 25; Swaine 1914: 23, 1918a: 109, 114. (**ec**) Blackman 1931c; Chamberlin 1939: 424; Furniss, R. L. & Carolin 1977: 384; Hirschmann 1978b; Keen 1938: 115; Leach 1940b: 223; Lindquist 1969c, 1971; Mathiesen 1952: 274; Patterson 1930: 5; Poinar 1975: 162; Rumbold 1936: 436; Thompson, W. R. & Simmonds 1964: 23, 1965: 27. (**hb**) Atkinson et al. 1986: 32; Blackman 1931c; Bright 1976d: 159; Bright & Stark 1973: 88; Burgos &

Saucedo 1983: 94; Chamberlin 1939: 424; Doane et al. 1936; Essig 1926: 520; Felt 1926: 248, 267, 1930a: 248, 267; Furniss, R. L. & Carolin 1977: 384; Gillette 1903: 117; Hopkins 1904a: 18, 1905: 75–77; Keen 1938: 115, 1952c: 149; Lindgren 1980a: 64; Pierce, W. D. 1907: 292; Schwerdtfeger 1956b: 50; Stevens, Brewer, & Leatherman 1980: 25, 1982: 25; Swaine 1918a: 109, 114; Trimble 1924: 383; Wood, S. L. 1982b: 693. (**ds**) Anonymous 1963j; Atkinson & Equihua 1985a: 85, 1985b: 235; Atkinson et al. 1986: 32; Blackwelder 1947: 782; Blandford 1898b: 186–187; Bright 1976d: 159; Bright & Stark 1973: 88; Chamberlin 1939: 424; Cockerell et al. 1907; Currie 1905; DeLeon 1938; Essig 1926: 520; Evans, D. 1983: 33; Felt 1926: 248, 267, 1930a: 248, 267; Ferrer 1942; Furniss, R. L. & Carolin 1977: 384; Gast et al. 1989: 385; Gemminger & Harold 1872: 2690; Hagedorn 1910d: 54; Hopping, R. 1922; Keen 1929a: 39, 1938: 115, 1952c: 149; Kleine 1913b: 128, 1914b: 350, 1934a: 150; Lanier 1970: 1420; Leng 1920: 341; Patterson & Hatch 1945: 153; Smith, G. S. 1929; Snow 1883: 44, 1907: 188; Swaine 1909: 123, 1914: 23; Wickham 1896a: 309, 1896b: 170; Wood, S. L. 1957c: 398, 1982b: 693. (**tx**) Atkinson et al. 1986: 33; Benoit 1985: 137; Blandford 1898c; Bright 1976d: 159; Bruck 1936a; Chamberlin 1939: 424; DeLeon 1938; Eggers 1929e: 50; Eichhoff 1869a: 273, 1878b: 226; Evans, D. 1983: 33; Hagedorn 1910a: 104; Hopkins 1905b: 75, 77; Keen 1929a: 39; Lanier 1987a: 108; Schedl 1940a: 349, 1955g: 43; Swaine 1909: 123, 1918a: 109, 114; Wood, S. L. 1957c: 398, 1982b: 693.

***knausi* Swaine** 1915b: 355. Holotype ♂; Cloudcroft, New Mexico [USA]; CNCI, Ottawa.
Figures: Hopping 1963e: 1204.
Distribution: North America (Arizona, Colorado, Nevada, New Mexico, South Dakota, S Utah in USA).
Hosts: *Pinus ponderosa*.
References: (**bv**) Silverstein & Young 1976: 21; Vite, Bakke, & Renwick 1972: 1971. (**cn**) Blackman 1931c; Doane et al. 1936; Gillman & Bailey 1978: 7; Johnson, D. W. & Minnemeyer 1976, 1977: 32; Keen 1938: 114, 1952c: 148; Lindgren 1980a: 64; Stevens, Brewer, & Leatherman 1980: 25, 1982: 25; Swaine 1918a: 108, 1925: 261–266. (**ec**) Blackman 1931c; Furniss, R. L. & Carolin 1977: 388; Keen 1938: 114; Lindquist, E. E. 1970b; Livingston, W. H. et al. 1983; Massey 1966c: 424; Thompson, W. R. & Simmonds 1964: 23, 1965: 27. (**hb**) Blackman 1931c; Chamberlin 1939: 421; Doane et al. 1936; Furniss, R. L. & Carolin 1977: 388; Hopping, G. 1963e: 1205; Keen 1938: 114, 1952c: 148; Stevens, Brewer, & Leatherman 1980: 25, 1982: 25; Swaine 1918a: 108. (**ds**) Chamberlin 1925, 1939: 421; Furniss, R. L. & Carolin 1977: 388; Hopping, G. 1963e: 1206; Keen 1938: 114, 1952c: 148; Leng 1920: 341; Wood, S. L. 1982b: 697. (**tx**) Bright 1967b: 675; Chamberlin 1939: 421; Hopping, G. 1963c: 510, 1963e: 1202–1205; de Ruette 1970: 103; Swaine 1915b: 355, 1918a: 108, 1925: 261–266; Wood, S. L. 1982b: 697.

***latidens* (LeConte)** 1874a: 72 (*Tomicus*). Holotype ♀; California [USA]; MCZ, Cambridge.
Figures: Blackman 1922d: 137, Bright 1976d: 153, Kusch 1967: 10.
Distribution: North America (Alberta, British Columbia, Ontario, Quebec, Saskatchewan in Canada/ Chihuahua in Mexico/ Arizona, California, Colorado, Idaho, Massachusetts, Montana, New Hampshire, New Mexico, New York, Oregon, Pennsylvania, Utah, Washington, West Virginia, Wyoming in USA).
Hosts: *Pinus albicaulis, P. contorta, P. coulteri, P. edulis, P. flexilis, P. jeffreyi, P. lambertiana, P. monticola, P. ponderosa, P. strobus*.
References: (**ay**) Thomas, J. B. 1967. (**bv**) Barr, B. A. 1969: 642; Chapman 1963: 676; Franklin 1968; Furniss, M. M. & Livingston 1979: 371; Inscoe 1982; Jacobson 1972; Klassen, Ridgway, & Inscoe 1982; Miller, Madden, & Borden 1986: 85; Moeck, Wood, & Lindahl 1981; Schmitz 1988; Seybold et al. 1988: 429; Silverstein & Young 1976: 21; Wood, D. L. et al. 1967. (**cn**) Anonymous 1965b; Browne 1968b: 491; Chamberlin 1924; Currie 1905: 72; Doane et al. 1936; Essig 1926: 520, 1958: 520; Hopkins 1904a: 17; Keen 1929: 48, 1938: 114, 1952c: 148; Lindgren 1980a: 64; Miller & Borden 1985; Ruppel 1967: 54; Schuder 1969: 78; Silver & Ross 1963a: 110; Smith, A. 1981; Smith, G. J. & Melvin 1974b; Swaine 1918a: 109, 114. (**ec**) Bushing 1965: 462; Chatelain & Schenk 1983; Dahlsten & Stephen 1974: 1213; DeLeon 1934a; Furniss, R. L. & Carolin 1977: 384; Hirschmann & Wisniewski 1982, 1983; Hurlbutt 1967; Keen 1938: 114; Kinn 1971; Kulhavy, Partridge, & Stark 1984; Lindquist 1969c, 1971; Marsh 1979: 157; Matthews 1970; Miller & Borden 1985; Otvos & Stark 1985; Powell, J. M., Wong, & Melvin 1972: 15; Rice 1968, 1969: 386; Schmitz 1988; Stephen & Dahlsten 1976c: 292; Wood, D. L. & Stark 1968: 148. (**hb**) Annila 1971: 12; Baker, W. L. 1972: 262; Bakke 1968b: 647; Bright 1976b: 152; Bright & Stark 1973: 84; Browne 1968b: 491; Chamberlin 1939: 421, 1958: 169; DeLeon 1952: 78; Doane et al. 1936; Essig 1926: 520, 1958: 520; Furniss, R. L. & Carolin 1977: 384; Hopkins 1904a: 17; Keen 1929: 48, 1938: 114, 1952c: 148; Lindgren 1980a: 64; Miller & Borden 1985; Pierce, W. D. 1907: 292; Schmitz 1988; Swaine 1918a: 109, 114; Wood, S. L. 1982b: 676. (**ds**) Anonymous 1965b; Bright 1976d: 152; Bright & Stark 1973: 84; Brown 1943: 1–12; Browne 1968b: 491; Chamberlin 1917: 327, 1925, 1939: 421, 1958: 169; Chapman 1963: 676; Currie

1905; DeLeon 1952; Drooz 1985: 361; Essig 1926: 520, 1958: 520; Evans, D. 1983: 33; Evans, D., Lowe, & Hunt 1978; Fall 1906: 202; Furniss, M. M. & Livingston 1979: 371; Furniss, R. L. & Carolin 1977: 387; Gast et al. 1989: 385; Hagedorn 1910d: 55; Henshaw 1882: 269, 1885: 148; Hopping, G. 1963a: 64; Hopping, R. 1922; Horning & Barr 1970: 41; Keen 1929: 48, 1929a: 38, 1938: 114, 1952c: 148; Kleine 1913b: 128, 1914b: 390, 1934a: 150; Lange 1937: 173; Leng 1920: 341; Leonard 1928: 519; McComb et al. 1953: 3; Patterson & Hatch 1945: 153; Rice 1969: 382–386; Ruppel 1967: 54; Schuder 1969: 78; Smith, G. J. & Melvin 1974b; Swaine 1909: 124; Thatcher, T. O. 1935: 261; Wickham 1896a: 309; Wood, S. L. 1948: 61, 1951a: 128, 1972a: 419, 1982b: 676. (**tx**) Blackman 1922d: 137–138; Bright 1976d: 152–153; Chamberlin 1939: 421, 1958: 169; Evans, D. 1983: 33; Hagedorn 1910a: 105; Hopping, G. 1963a: 64, 1963b: 63–64; Keen 1929a: 38; LeConte 1874a: 72, 1876: 367; Pardy 1974, 1977; Swaine 1909: 124, 1911a: 214–216, 1918a: 109, 114; Thomas, J. B. 1967; Wood, S. L. 1966b: 24, 1972a: 419, 1982b: 676.

longidens Swaine 1911a: 214. Lectotype ♂; Ithaca, New York [USA]; CNCI, Ottawa, designated by Bright 1967b: 676. Synonymy: Hopping 1963a: 64.

References: (**cn**) Blackman 1950; Clemens 1916: 297; Doane et al. 1936; Swaine 1918a: 108, 114; Swaine et al. 1924:pl. 22. (**ec**) Thompson, W. R. 1943: 59; Thompson, W. R. & Simmonds 1964: 23, 1965: 28. (**hb**) Blackman 1919a: 85–90, 1950; Chamberlin 1939: 422; Doane et al. 1936; Gobeil 1936b; Swaine 1918a: 108, 114; Swaine et al. 1924: 28–91, pl. 22. (**ds**) Anonymous 1926c: 519; Beaulne 1956; Blackman 1950; Chamberlin 1925, 1939: 422; Kleine 1913b: 128, 1934a: 151; Leng 1920: 341. (**tx**) Blackman 1922d: 137–138; Bright 1967b: 676; Chamberlin 1939: 422; Hoebeke 1978; Hopping, G. 1963b: 64; de Ruette 1970: 103; Swaine 1911a: 214, 1918a: 108, 114.

guildi Blackman 1922d: 137. Holotype ♀; Grand Lake, Colorado [USA]; USNM, Washington. Synonymy: Hopping 1963b: 64.

References: (**cn**) Doane et al. 1936; Keen 1938: 115, 1952c: 149; Smith, G. J. & Melvin 1974a, 1974b. (**ec**) Keen 1938: 115; Nordin 1956; Reid 1955: 312; Woodring 1966c: 123. (**hb**) Chamberlin 1939: 422, 1958: 170; Doane et al. 1936; Keen 1938: 115, 1952c: 149; Reid 1955: 312, 316. (**ds**) Chamberlin 1925, 1939: 422, 1958: 170; Gautreau 1974: 5; Gautreau & Melvin 1974: 13; Keen 1929a: 38, 1938: 115, 1952c: 149; Kusch 1967; Leng & Mutchler 1927: 52; Smith, G. J. & Melvin 1974a, 1974b; Still, Tidsbury, & Melvin 1974a: 13; Susut & Melvin 1974; Wood, S. L. 1951a: 128. (**tx**) Blackman 1922d: 137; Chamberlin 1939: 422, 1958: 170; Hopping, G. 1963b: 64; Keen 1929a: 38; Kusch 1967: 10; Wood, S. L. 1951a: 128.

***lecontei* Swaine** 1924c: 70. Holotype ♂; Arizona [USA]; MCZ, Cambridge.

Figures: Massey & Rodriquez 1967c: 218.

Distribution: North America (Guatemala/ Honduras/ Chihuahua, Colima, Durango, Jalisco in Mexico/ Arizona, New Mexico in USA).

Hosts: *Pinus durangensis, P. montezumae, P. oocarpa, P. ponderosa, P. pseudostrobus.*

References: (**ay**) Mankins, J. V. 1980; Thomas, J. B. 1967. (**bv**) Barr, B. A. 1969: 642; Francke et al. 1986; Massey & Rodriguez 1967c; Seybold et al. 1988: 441; Thomas & Birch 1970: 482. (**cn**) Anonymous 1958a: 6, 1960g, 1960i, 1960j: 18, 1960q, 1961h, 1961s, 1967t, 1968p, 1975e; Beatty 1980: 4; Bongberg 1962; Doane et al. 1936; Flake & Germain 1970: 24; Frye 1971b: 25; Hornibrook 1936: 620–622; Keen 1938: 115, 1952c: 147; Lucht 1966: 28; Lucht & Moore 1963: 18; Mankins, J. V. 1980; Massey 1969a; Massey & Parker 1981; Massey & Rodriguez 1967c; Ostmark 1956: 8, 1966: 4180, 1969: 1–4; Parker, D. L. 1979; Parker, D. L. et al. 1977: 34; Patterson 1930: 3; Pitman 1969b; Price 1958: 61; Ragenovich 1980b: 21; Schwerdtfeger 1956b: 42; Smith, A. 1981; Stelzer 1970: 956–959; Stevens, Brewer, & Leatherman 1982: 25; Telfer 1982. (**ec**) Anonymous 1964x; Chansler 1966; Ellis 1939: 556–557; Furniss, R. L. & Carolin 1977: 385; Keen 1938: 115; Lindquist 1969c, 1971; Massey 1965b: 67–75; Massey & Parker 1981; Patterson 1930: 3; Poinar 1975: 162. (**hb**) Bongberg 1959a; Chamberlin 1939: 419; Chansler 1964: 1–4, 1966: 622–624; Doane et al. 1936; Furniss, R. L. & Carolin 1977: 385; Keen 1952c: 147; Mankins, J. V. 1980; Massey 1969a; Massey & Parker 1981; Massey & Rodriguez 1967c; Ostmark 1966; Parker, D. L. 1979; Schwerdtfeger 1956b: 42; Stevens, Brewer, & Leatherman 1982: 25. (**ds**) Acciavatti & Weiss 1974; Anonymous 1958a: 6, 1960: 12, 1967t, 1968p, 1975e; Atkinson & Equihua 1985b: 236; Blackwelder 1947: 782; Chamberlin 1939: 419; Chansler 1964; Ferrer 1942: 11; Furniss, R. L. & Carolin 1977: 385; Hopping, G. 1965e: 433; Keen 1929a: 37, 1952c: 147; Leng & Mutchler 1927: 52; Little 1943: 245; Massey & Parker 1981; Massey & Rodriguez 1967c; Thomas, J. B. 1966; Wood, S. L. 1957c: 397, 1982b: 701. (**tx**) Bright 1967b: 675; Chamberlin 1939: 419; Chansler 1964; Hopping, G. 1963c: 510, 1965e: 423, 425, 433; Keen 1929a: 37; Mankins, J. V. 1980; Massey & Rodriguez 1967c: 218; de Ruette 1970: 103; Schedl 1940a: 349, 1955g: 40, 1960g: 8; Swaine 1924c: 70; Wood, S. L. 1957c: 397–398. (**ms**) Bongberg 1959a.

***longifolia* (Stebbing)** 1909b: 26 (*Tomicus*). Syntypes 3 ♂; Kumaun, North-West Himalaya, India; FRI, Dehra Dun.

Distribution: Asia (Himachal Pradesh, Punjab, Uttar Pradesh in India).
Hosts: *Pinus roxburghii*.
References: (**ay**) Gardner 1934b: 1–17. (**cn**) Beeson 1915a: 318–325, 1915b: 8–11, 1918, 1922a: 496; Browne 1968b: 365; Chandry 1966; Huque 1966; Pierce, W. D. 1917: 74; Roonwal 1954: 17; Stebbing 1903a: 282, 1914: 557; Troup 1916: 1–126. (**ec**) Beeson 1922c: 342–343; Lindquist 1969c; Stebbing 1914: 557; Thompson, W. R. 1943: 59. (**hb**) Beeson 1915a, 1922c: 342–343; Browne 1968b: 365; Stebbing 1903a: 282, 1908a: 111, 1909b: 16, 24, 26, 1911a: 6, 1914: 557. (**ds**) Beeson 1919c: 114–124, 1922a: 496, 1922c: 342–343, 1961: 288; Bhasin, Roonwal, & Singh 1958; Browne 1968b: 365; Champion 1922: 168–174, 232–246; Hagedorn 1910d: 56; Kleine 1914b: 277, 1934a: 151; Pierce, W. D. 1917: 74; Qadri 1951a: 368, 1951b: 68; Roonwal 1954: 17; Schedl 1974a: 88; Stebbing 1903a: 282; Waterston 1922: 51–94; Zethner 1973. (**tx**) Gardner 1934b: 1–17; Hagedorn 1910a: 105; Schedl 1974a: 88; Schmutzenhofer 1988; Stebbing 1909b: 16, 24, 26, 1914: 557.

***mannsfeldi* (Wachtl)** 1879: 51 (*Tomicus*). Syntypes, sex?; Austria inferior; not located.
Figures: Grune 1979: 150, Plaza & Gill 1982: 250, Tsai & Li 1959: 100, Yin, Huang, & Li 1989: 129.
Distribution: Asia (Qinghai, Sichuan, Yunnan in China/ Turkey), Europe (Austria/ Bulgaria/ Corsica/ France/ Hungary/ Poland/ Yugoslavia).
Hosts: *Pinus densata, P. nigricans, P. yunnanensis*, rare in *P. sylvestris, Picea asperata, P. balfouriana*.
References: (**ay**) Escherich 1923b: 486, 541; Feytaud 1950a; Fuchs 1911a. (**bv**) Grune 1979: 151; Fu, Wu, & Ning 1984. (**cn**) Escherich 1923b: 486, 541; Feytaud 1950a; Jahn 1960b; Koch 1913: 113; Nusslin 1913: 273; Pierce, W. D. 1917: 74; Rhumbler 1922: 316, 1927: 333; Schimitschek 1937c: 58, 1944: 219, 1952c: 60, 1955a: 76, 1955c: 89; Schwerdtfeger 1944a: 176, 1957a: 183; Sedlaczek 1935a: 163, 1936: 200; Sierpinski 1966: 60; Wachtl 1901: 381. (**ec**) Acatay 1943b; Apfelbeck 1916b; Kleine 1908c: 214, 1909a: 48, 77, 1944: 72; Knoche 1908b: 204; Novak, P. 1952: 417; Schimitshcek 1930a: 281, 1941a: 314, 1955a: 76; Schwerdtfeger 1944a: 176, 1957a: 183; Wachtl 1879: 51. (**hb**) Alkan 1946: 113; Apfelbeck 1916b: 429–439, 1917; Chararas 1962c: 217; Charvat 1950; Escherich 1923b: 486, 541; Feytaud 1950a; Knotek 1897: 156, 1899b: 12, 1901: 572; Lengerken 1939: 72, 1954: 93; Nusslin 1913: 273; Postner 1974: 454; Rhumbler 1922: 316, 1927: 333; Schedl 1981b: 89; Schimitschek 1930a: 281, 1944: 219, 1955a: 76; Schwerdtfeger 1944a: 176, 1957a: 183, 1981: 189; Sedlaczek 1935a: 163; Wachtl 1901: 381; Yang 1989c. (**ds**) Acatay 1943: 3; Bain 1974: 17; Buresh & Lazarov 1956; Charvat 1950; Chorbadzhievo 1924d; Endrodi 1958b; Escherich 1923b: 486, 541; Fauvel 1885; Fice 1961: 173–204; Fuchs 1905a, 1907: 33; Ganglbauer 1882; Grune 1979: 151; Hagedorn 1910d: 56; Hennig 1954: 263; Heyden, Reitter, & Weise 1891: 672, 1906: 712; Horion 1951; Kleine 1913a: 35, 1913b: 128, 1934a: 151; Knotek 1899b: 12, 1901: 572; Kurir 1947e: 7; Li, Shi, & Ao 1984: 49; Lucht 1987: 279; Novak, P. 1952: 417; Nunberg 1964a: 236; Pfeffer 1947d: 127, 1984: 277, 1989a: 75; Pierce, W. D. 1917: 74; Pittioni 1943: 175; Plaza & Gil 1982: 250; Postner 1974: 454; Prossen 1913: 83; Reitter 1887a: 105, 1894a: 82; Sainte-Claire 1914: 473; Sainte-Claire & Mequignon 1938: 448; Schaufuss 1915: 1249; Schedl 1961b: 185, 1980a: 28, 1981b: 89; Schilsky 1909: 188; Schwerdtfeger 1981: 189; Sierpinski 1966: 60; Tredl 1907: 16; Wichmann 1927a: 78; Yin & Huang 1981: 563; Yin, Huang, & Li 1984: 129. (**tx**) Alkan 1946: 113; Balachowsky 1949a: 263; Charvat 1950; Chorbadzhievo 1924d; E. B. 1880; Eggers 1914, 1924; Endrodi 1957a: 307, 1957b; Escherich 1923b: 486, 541; Fauvel 1885; Formanek 1907: 42; Fuchs 1911a; Grune 1979: 150–151; Hagedorn 1910a: 105; Koch 1913: 113, 1932: 135; Lucht 1987: 279; Pfeffer 1932b: 3, 1955a: 240; Plaza & Gil 1982: 250; Postner 1974: 454; Quaschik 1953: 35; Reitter 1894a: 82, 1913a: 107; Rhumbler 1922: 316, 1927: 333; Schedl 1934f: 1645, 1950a: 71, 1980a: 28, 1981b: 89; Schimitschek 1937c: 58, 1955c: 89; Tsai & Li 1959: 100; Wachtl 1879: 51, 1883a: 8, 1895: 8, 1896: 257; Weber, L. 1912: 30; Yin & Huang 1981: 563; Yin, Huang, & Li 1984: 129. (**ms**) Sedlaczek 1913: 455, 1936: 200; Weber, L. 1912: 30.

***mexicanus* (Hopkins)** 1905b: 75 (*Tomicus*). Lectotype ♀; Mexico City, Mexico; USNM, Washington, designated by Wood 1982b: 674.
Figures: Bright 1976d: 153, Hopping 1963d: 1093, Hopkins 1905b: 75, Kusch 1967: 10, Struble 1961: 4.
Distribution: North America (Alaska/ Alberta, British Columbia in Canada/ Guatemala/ Baja California Norte, Chiapas, Distrito Federal, Durango, Hidalgo, Mexico, Michoacan, Puebla, Veracruz in Mexico/ Arizona, California, Colorado, Idaho, Montana, Oregon, Utah, Wyoming in USA).
Hosts: *Pinus albicaulis, P. attenuata, P. ayacahuite, P. contorta, P. cooperi, P. durangensis, P. flexilis, P. hartwegii, P. jeffreyi, P. lambertiana, P. leiophylla, P. montezumae, P. muricata, P. oocarpa, P. patula, P. ponderosa, P. pseudostrobus, P. radiata*.
Notes: (3) Chamberlin 1917: 327 (cited *wieslanderi* Swaine, nomen nudum, no status).
References: (**ay**) Mankins, J. V. 1980; Payne et al. 1973; Thomas, J. B. 1967. (**bv**)Barr, B. A. 1969: 642; Ohmart & Voight 1982: 340. (**cn**) Anonymous 1965b, 1966f, 1966h; Arno & Hoff 1989; Browne 1968b: 366; Gentry, G. R. et al. 1979: 807; Hamel 1980: 781; Kondo & Moody 1987: 108;

Lindgren 1980a: 65; Lindquist, E. E. 1969c; Mankins, J. V. 1980; Neal 1979: 807; Ruppel 1967: 54; Schwerdtfeger 1956b: 34; Smith, G. J. & Melvin 1974a, 1974b; Wood, R. O. 1969: 90. (**ec**) Becker, G. 1955; Bedard 1966a: 936; Chatelain & Schenk 1983; Deyrup & Gara 1978: 275; Furniss, R. L. & Carolin 1977: 384; Kinn 1971; Lindquist, E. E. 1971; Ohmart & Voight 1982: 340; Woodring 1966c: 123. (**hb**) Atkinson et al. 1986: 32; Becker, G. 1955; Bright & Stark 1973: 85; Browne 1968b: 366; Burgos & Saucedo 1983: 92; Furniss, R. L. & Carolin 1977: 394; Lindgren 1980a: 65; Mankins, J. V. 1980; Schwerdtfeger 1956b: 34; Wood, S. L. 1982b: 674. (**ds**) Anonymous 1965b, 1966f, 1966h; Atkinson & Equihua 1985a: 84, 1985b: 235; Atkinson et al. 1986: 32; Blackwelder 1947: 782; Bright 1976d: 156; Bright & Stark 1973: 85; Browne 1968b: 366; Burgos & Saucedo 1983: 92; DeLeon 1938; Evans, D. 1983: 33; Ferrer 1942; Furniss, M. M. & Furniss 1972; Furniss, R. L. & Carolin 1977: 384; Gast et al. 1989: 385; Gautreau & Melvin 1974: 14; Hagedorn 1910d: 56; Hopping, G. 1963d: 1094; Kleine 1913b: 128, 1914b: 350, 362; Kusch 1967; Ohmart & Voight 1982: 340; Ramirez 1921: 662–663; Ruppel 1967: 54; Smith, G. J. & Melvin 1974a, 1974b; Thatcher 1935: 261; Thomas, J. B. 1966; Wood, S. L. 1957c: 398, 1972a: 419, 1982b: 674. (**tx**) Bright 1976d: 153, 156, pl. 42; DeLeon 1938; Evans, D. 1983: 33; Hagedorn 1910a: 105; Hopkins 1905b: 75, 1915e: 54; Hopping, G. 1963b: 62, 1963c: 510, 1963d: 1092–1094; Kusch 1967: 10; Mankins, J. V. 1980; Schedl 1940a: 349, 1955g: 33; Thomas, J. B. 1967; Wood, S. L. 1957c: 398–399, 1972a: 419, 1982b: 674.

radiatae Hopkins 1915e: 54 (*Tomicus*). Holotype ♀?; Berkeley, California [USA]; USNM, Washington. Synonymy: Hopping 1963d: 1094.
References: (**ay**) Eaton 1942; Schonherr 1970b. (**bv**) Schonherr 1970b; Struble 1961; Wood, D. L. 1961b: 187–188. (**cn**) Anonymous 1961b; Brown 1954; Burke 1937: 28; Chamberlin 1924; Doane 1927: 284–286; Doane et al. 1936; Eaton 1942: 41–49; Essig 1926: 520, 1958: 520; Felt 1926: 249, 267, 1930a: 249, 267; Hatch 1938: 194; Herbert 1919: 337; Hutson et al. 19..: 291–304; Keen 1929: 42, 1933: 298, 1938: 117, 1952c: 151; Ruhm 1964; Struble 1961; Swaine 1918a: 107, 112; Van Dyke 1922: 180; Villarreal Martinez 1957: 11. (**ec**) Bushing 1965: 461; DeLeon 1934a; Doane 1927; Keen 1938: 117; Lindquist & Bedard 1961; Person 1940: 391; Powell, Wong, & Melvin 1972: 7; Richerson & Borden 1972a; Ruhm 1964; Thompson, W. R. & Simmonds 1964: 24, 1965: 27; Woodring 1966c. (**hb**) Chamberlin 1939: 415, 1958: 165–166; Doane et al. 1936; Essig 1926: 520, 1958: 520; Felt 1926: 249, 267, 1930a: 249, 267; Keen 1929c: 42, 1933b: 297–298, 1938: 117, 1952c: 151; Struble 1961: 1–7; Swaine 1918a: 107, 112; Trimble 1924: 382–390. (**ds**) Blackwelder 1947: 782; Chamberlin 1917: 327, 1925: 196–197, 1939: 415, 1958: 165–166; Essig 1926: 520, 1958: 520; Felt 1926: 249, 267, 1930a: 249, 267; Ferrer 1942; Hopping, R. 1922, 1950a; Keen 1929: 42, 1929a: 37, 1938: 117, 1952c: 151; Kleine 1934a: 151; Leng 1920: 341; McComb 1953: 3; Patterson & Hatch 1945: 153; Struble 1961; Wood, S. L. 1948: 60, 1951a: 128, 1957c: 399. (**tx**) Chamberlin 1939: 415, 1958: 165–166; Hopkins 1915e: 54; Hopping, G. 1963b: 62, 1963c: 510, 1963d: 1094; Keen 1929a: 37; Schedl 1940a: 349, 1955g: 34; Struble 1961: 4; Swaine 1917b: 356, 1918a: 107, 112; Wood, S. L. 1951a: 128, 1957c: 399.

***montanus* (Eichhoff)** 1881a: 219 (*Tomicus*). Lectotype ♀; California [USA]; USNM, Washington, designated by Wood 1982b: 702.
Figures: Hopping 1965e: 425.
Distribution: North America (S British Columbia in Canada/ California, Idaho, W Montana, Oregon, Washington in USA).
Hosts: *Pinus monticola*, uncommon in *P. albicaulis, P. balfouriana*.
References: (**bv**) Barr, B. A. 1969: 642; Pitman 1966b; Vite & Pitman 1967: 683–701. (**cn**) Anonymous 1963j; Hopkins 1899b: 20, 1904a: 18; Lindgren 1980a: 65; Ruppel 1967: 54. (**ec**) Bushing 1965: 461; Furniss, R. L. & Carolin 1977: 396; Kinn 1971, 1983a; Kulhavy, Partridge, & Stark 1984; Lindquist 1964, 1969c; Otvos & Stark 1985; Pitman & Vite 1969: 145; Rice 1968; Richerson & Borden 1972a; Schonherr 1971; Smiley & Knutson 1983. (**hb**) Bright & Stark 1973: 91; Chamberlin 1939: 431, 1958: 167–168; Furniss, R. L. & Carolin 1977: 396; Hopkins 1899b: 20, 1904a: 18; Hopping, G. 1965e: 430; Lindgren 1980a: 65. (**ds**) Anonymous 1963j; Blackwelder 1939; Bright 1976d: 167; Bright & Stark 1973: 91; Chamberlin 1939: 431, 1958: 167–168; Evans, D. 1983: 33; Furniss, M. M. & Furniss 1972; Furniss, R. L. & Carolin 1977: 396; Gast et al. 1989: 385; Hopping, G. 1965e: 430; Leng 1920: 341; Ruppel 1967: 54; Schwarz 1886: 42; Swaine 1909: 122; Wood, S. L. 1957c: 397–398, 1982b: 702. (**tx**) Bright 1976d: 167; Chamberlin 1939: 431, 1958: 167–168; Eggers 1929e: 50, 1931c: 20, 1933g: 20; Eichhoff 1881a: 219; Evans, D. 1983: 33; Hopping, G. 1963c: 514, 1965e: 425, 430; Reitter 1913a: 105; Schedl 1950a: 82, 1951m: 73, 1960g: 6–7; Schwarz 1886: 42; Swaine 1909: 122, 1918a: 113, 1924c: 70, 72; Wood, S. L. 1955g: 39, 1957c: 397–398, 1982b: 702. (**ms**) Hatch 1938: 194.

vancouveri Swaine 1916b: 188. Holotype ♂; Quathiaski Cove, Vancouver Island, British Columbia [Canada]. Synonymy: Wood 1957c: 398.
References: (**cn**) Doane et al. 1936; Hatch

1938: 194; Keen 1929: 45, 1938: 113, 1952c: 148; Swaine 1918a: 108, 113. (**ec**) DeLeon 1934a, 1934b: 297–317; Hutson 1933: 291–304; Keen 1938: 113; Thompson, W. R. 1943: 61. (**hb**) Chamberlin 1939: 419; Chapman & Kinghorn 1958: 368; Doane et al. 1936; Keen 1929: 45, 1933b: 297–298, 1938: 113, 1952c: 148; Swaine 1918a: 108, 113. (**ds**) Chamberlin 1925, 1939: 419; Hopping, R. 1922; Keen 1929: 45, 1938: 113, 1952c: 148; Kleine 1934a: 151; Leng 1920: 341; Patterson & Hatch 1945: 153; Schuder 1969: 78; Smith, G. S. 1930. (**tx**) Bright 1967b: 676; Chamberlin 1939: 419; Eggers 1929e: 50; Hoebeke 1978; Hopping, G. 1965e: 430; de Ruette 1970: 104; Schedl 1955g: 40, 1960g: 6–7; Swaine 1916b: 188, 1918a: 108, 113, 1924c: 70–72; Wood, S. L. 1957c: 398. (**ms**) Hatch 1938: 194.

***nitidus* Eggers** 1933a: 101. Holotype, sex?; China: Szechuan, Nitou Tatsienlu und Mukue Tatsienlu; USNM, Washington.

Figures: Yin, Huang, & Li 1984: 133 (declivity).

Distribution: Asia (Gansu, Qinghai, Sichuan, Xingjiang, Yunnan in China).

Hosts: *Picea asperata, P. balfouriana, P. crassifolia, P. schrenkiana, P. tianshanica, Pinus densata, P. yunnanensis, Abies faxoniana.*

References: (**bv**) Fu, Wu, & Ning 1984. (**ds**) Yin & Huang 1981: 564: Yin, Huang, & Li 1984: 133. (**tx**) Anderson, W. H. & Anderson 1971: 22; Eggers 1933a: 101; Michalski 1969b: 570; Schedl 1950a: 81; Sokanovskii 1959b: 93–94; Yin & Huang 1981: 564; Yin, Huang, & Li 1984: 133.

***nobilis* (Wollaston)** 1862a: 441 (*Tomicus*). Syntypes, sex?; Canary Islands; BMNH, London.

Distribution: Africa (Canary Islands).

Hosts: *Pinus canariensis.*

References: (**cn**) Espinol 1964: 52–54; Souphieff & Scherbinovskaja 1937: 102. (**ds**) Hagedorn 1910d: 56; Kleine 1913b: 128, 1914a: 20; Lacordaire 1866: 383; Palm 1967: 45; Schedl 1971d: 426; Schedl, Lindberg, & Lindberg 1959: 24; Souphieff & Scherbinovskaja 1937: 102; Uyttenboogaart 1937: 118. (**tx**) Eichhoff 1878b: 257; Ferrari 1867a: 47, 1868: 251, 254; Hagedorn 1910a: 105; Lacordaire 1866: 383; Schedl 1934f: 1645; Schedl, Lindberg, & Lindberg 1959: 24; Wollaston 1862a: 441, 1864: 254, 1865: 236, 1871: 262.

***orientalis* Wood & Yin** 1986: 461. Holotype ♂; Baxoi, Xizang (Tibet), China; IZAS, Beijing.

Distribution: Asia (Sichuan, Xizang [Tibet] in China).

Hosts: *Picea* sp.

References: (**tx**) Wood, S. L. & Yin 1986: 461.

***paraconfusus* Lanier** 1970: 1146. Holotype ♀; Avery, Calaveras Co., California [USA]; CNCI, Ottawa.

Figures: Bright & Stark 1973: 161, Powell & Hogue 1979: 313.

Distribution: North America (California, W Nevada, W Oregon in USA).

Hosts: *Pinus attenuata, P. coulteri, P. jeffreyi, P. lambertiana, P. ponderosa.*

Notes: (3) Most citations of this name prior to 1970 were published as *confusus* and are listed under that name.

References: (**ay**) Furniss, M. M. & Livingston 1979: 370; Groberman & Borden 1982; Hagen & Atkins 1975; Hughes & Renwick 1977b; Light 1983a, 1983b; Lyon 1955: 482; Nijhlot & Sahota 1974: 931; Oester & Rudinsky 1979; Payne et al. 1973; Penner 1971; Penner & Barlow 1972; Unnithan & Nair 1977. (**bv**) Akers 1989; Akers & Wood 1989a, 1989b; Bakke 1973; Bertrand & Viala 1978; Birch & Light 1977; Birch & Svihra 1979b; Birch & Wood 1975; Birgersson et al. 1984: 1047; Borden 1971b; Borden et al. 1981: 561; Byers 1978b, 1981a, 1981b, 1983c, 1983d, 1989a, 1989b; Byers & Wood 1980, 1981b; Byers et al. 1979; Chen, Borden, & Pierce 1988; Du 1987; Elkinton 1979b; Elkinton & Wood 1980; Elkinton, Wood, & Browne 1981; Fish, Browne, & Bergot 1984; Fish et al. 1979; Furniss, M. M. & Livingston 1979: 370; Gargers & Scott 1976; Gargiullo & Berisford 1981: 392; Gerken & Hughes 1976; Goheen et al. 1985; Groberman & Borden 1982; Hagen & Atkins 1975; Hendry et al. 1980; Hosomi, Araki, & Sakurai 1983; Hosomi, Saito, & Sakurai 1979; Hughes 1974; Hughes & Renwick 1977b; Inscoe 1982; Inscoe & Beroza 1976: 147; Klassen, Ridgway, & Inscoe 1982; Lanier et al. 1972: 1922; Light 1981b, 1983a, 1983b; Light & Birch 1979, 1982; Look 1980; Mori 1975a, 1976a; Mori, Takigawa, & Matsuo 1979; Mustaparta 1979; Mustaparta, Angst, & Lanier 1979; Oester & Rudinsky 1979; Ohmart & Voight 1982: 340; Payne & Wood 1981: 492; Renwick, Hughes, & Krull 1976; Renwick, Pitman, & Vite 1976; Riley, R. G. et al. 1974; Rudinsky 1979a: 409; Schmitz 1972: 1725; Schultz & Bedard 1987; Silverstein 1971b, 1974, 1977; Silverstein & Young 1976: 21; Thomas, T. L. & Agee 1986; Tumlinson, Mitchell, & Chambers 1970: 56; Vite, Bakke, & Renwick 1972: 1971; Vite, Ohloff, & Billings 1978; Weaver, N. 1978a; Weber, R. & Schurig 1984; Whittaker & Feeny 1971; Wood, D. L. 1980b; Young, J. C. et al. 1973. (**cn**) Anonymous 1972h, 1973c, 1974f, 1978u; Birch & Svihra 1979b; Coulson & Witter 1984: 535; Gentry, G. R. et al. 1979: 804; Hamel 1980: 778; Hamilton, W. D., Svihra, & Koehler 1988; Lindgren 1980a: 65; Mattson & Haack 1987; Neal 1979: 804; Oliver 1979; Payne & Wood 1981: 492; Pierce, J. R. & Srago 1973: 17; Rudinsky 1979a: 409; Ryker & Rudinsky 1979: 211; Schultz & Bedard 1987; Wood, D. L. 1980b. (**ec**) Ball & Dahlsten 1972; Birch & Svihra 1979b; Borden 1983; Borden et al. 1981: 561; Brand et al. 1975; Brower 1974: 236; Byers 1989a, 1989b; Byers & Wood 1980; Chen & Borden 1989; Choo et al.

1987; Dahlsten & Stephen 1974: 1211; Elkinton & Wood 1980; Elkinton, Wood, & Hendry 1980; Felix, Uhrenholdt, & Parmeter 1971: 1697; Fox & Wood 1988: 439; Furniss, R. L. & Carolin 1977: 396; Gargiullo & Berisford 1981: 392; Goheen & Cobb 1980; Goheen et al. 1985; Gover & Finger 1978: 98; Hackwell 1973; Hoffard & Coster 1976: 130; Lanier et al. 1972: 1918; Light 1981b; Light, Birch, & Paine 1983; Mattson & Haack 1987; Nickle & Welch 1984: 638; Ohmart 1979; Ohmart & Voight 1982: 340; Piston & Lanier 1974;: 250; Reid 1957b: 6; Richerson, J. V. & Borden 1972a; Stephen & Dahlsten 1976b: 292. (**hb**) Borden 1983; Bright & Stark 1973: 92; Byers 1983d; Chen & Borden 1989; Coulson & Witter 1984: 553; Elkinton, Wood, & Browne 1981; Fox & Wood 1988: 439; Fox, Wood, & Cane 1988: 429; Furniss, R. L. & Carolin 1977: 396; Lanier et al. 1972: 1919; Lindgren 1980a: 65; Ohmart 1979; Ryker & Rudinsky 1979: 211; Schultz & Bedard 1987; Wood, S. L. 1982b: 703. (**ds**) Anonymous 1973c, 1974f, 1978u; Ball & Dahlsten 1973; Bright & Stark 1973: 92; Elkinton & Wood 1980; Furniss, R. L. & Carolin 1977: 396; Hughes 1974; Lanier et al. 1972: 1918; Ohmart & Voight 1982: 337; Powell, J. A. & Hogue 1979: 315; Schultz & Bedard 1987; Wood, S. L. 1982b: 703. (**tx**) Bright & Stark 1973: 161; Lanier 1970: 1146; McNamara 1977: 196; Powell, J. A. & Hogue 1979: 313; Ryker & Rudinsky 1979: 211; Wood, S. L. 1982b: 703. (**ms**) Bertrand & Viala 1978; Brand & Scott 1985; Fish, Browne, & Bergot 1984; Garbers & Scott 1976; Hosomi, Araki, & Sakurai 1983; Karlsen, Froyan, & Skattebol 1976: 664; Look 1970; Mori 1975a, 1976a; Mori, Takigawa, & Matsuo 1979; Riley, R. G. et al. 1974; Weber, R. & Schurig 1984.

***perroti* Swaine** 1915b: 357. Holotype ♂; Isle Perrot, Quebec [Canada]; CNCI, Ottawa.
Figures: Bright 1976d: 153, Hopping 1964b: 973, Kusch 1967: 10.
Distribution: North America (Alberta, Manitoba, New Brunswick, Ontario, Quebec in Canada/ Michigan, Minnesota in USA).
Hosts: *Pinus banksiana, P. resinosa*.
References: (**ay**) Thomas, J. B. 1967. (**cn**) Doane et al. 1936; Graham 1939b, 1952; Swaine 1918a: 110, 117; Syme & Nystrom 1988: 58. (**ec**) Bushing 1965: 461; Cross & Moser 1971; Furniss, R. L. & Carolin 1977: 392; Graham 1939b, 1952; Lindgren 1980a: 65; Lindquist, E. E. 1969c; Lindquist, O. H. & Syme 1981: 61; Reid 1955: 311, 1957b: 5, 1957c: 111; Schedl 1932: 1–2; Thomas, J. B. 1970a; Tomalak, Welch, & Galloway 1989a, 1989b. (**hb**) Baker, W. L. 1972: 262; Balogun 1970: 233; Bright 1976d: 160; Chamberlin 1939: 428; Doane et al. 1936; Furniss, R. L. & Carolin 1977: 392; Graham 1939b, 1952; Hopping, G. 1964b: 976; Lindgren 1980a: 65; Reid 1955: 311–312; Swaine 1918a: 110, 117; Wood, S. L. 1982b: 680. (**ds**) Beaulne 1956; Blatchley & Leng 1916: 639; Bright 1976d: 160; Chamberlin 1925, 1939: 428; Dodge 1938; Drooz 1985: 361; Evans, D. 1983: 33; Furniss, R. L. & Carolin 1977: 392; Hopping, G. 1964b: 976; Kleine 1934a: 151; Kusch 1967; Leng 1920: 341; Lindquist, O. H. & Syme 1981: 61; Syme & Nystrom 1988: 58; Wood, S. L. 1982b: 680. (**tx**) Blatchley & Leng 1916: 639; Bright 1967b: 676, 1976d: 153, 160; Chamberlin 1939: 428; Dodge 1938: 49–50; Evans, D. 1983: 33; Hoebeke 1978; Hopping, G. 1963c: 510, 1964b: 970, 973, 976; Kusch 1967: 10; Lindquist, O. H. & Syme 1981: 61; de Ruette 1970: 103; Swaine 1915b: 357–359, 1918a: 110, 117; Syme & Nystrom 1988: 58; Thomas, J. B. 1967; Titus, Meikle, & Harrison 1985: 77; Wood, S. L. 1982b: 680.

***perturbatus* (Eichhoff)** 1869a: 274 (*Tomicus*). Lectotype, sex?; "Illinois" [USA]; IRSNB, Brussels, designated by Lanier 1987a: 109.
Figures: Hopping 1965b: 536, Kusch 1967: 9.
Distribution: North America (Alaska/ Alberta, British Columbia, Manitoba, New Brunswick, Northwest Territories, Ontario, Quebec, Saskatchewan, Yukon in Canada/ Maine, Michigan, Minnesota, Montana in USA).
Hosts: *Picea glauca*, rare in *P. engelmannii*.
Notes: (1) The lectotype locality label is illegible.
References: (**ay**) Robertson 1961; Thomas, J. B. 1967. (**bv**) Baker, Hostetler, & Furniss 1977: 293; Furniss, M. M., Baker, & Hostetler 1976: 1300. (**cn**) Anonymous 1983c; Baker, Hostetler, & Laurent 1977; Baranyay & Stevenson 1966: 85; Beckwith 1972; Belyea & Prebble 1951; Brown, C. E. & Stevenson 1963: 97; Browne 1968b: 366; Chamberlin 1924; Craighead 1924: 28–91, 1927: 1–12; Downing 1957: 113; Graham 1952; Grant, J. 1969a: 177, 1969b: 183; Hofacker & Loomis 1982: 36, 1983: 38; Hofacker, Loomis, & Tucker 1984: 56; Holsten, Laurent, & Averill 1980: 65; Holsten, Werner, & Laurent 1980; Hopping, G. 1952; Keen 1938: 128, 1952c: 165; Kondo & Moody 1987: 108–109; Lindgren 1980a: 65; Lindquist, O. H. & Syme 1981: 61; McGuffin 1953: 117; McGuffin & Barker 1947: 57; Molnar et al. 1969: 117; Molnar, Harris, & Ross 1965: 102; Pierson 1927: 121; Reeks et al. 1945: 46; Ruppel 1967: 54; Smith, G. J. & Melvin 1974a, 1974b; Swaine 1913: 89, 1918a: 109, 115, 1924d: 9–10; Swaine et al. 1924: 21; Thomas, J. B. 1958: 393–404; Tripp & Blauel 1969: 104; Tripp, Robins, & Blauel 1970: 89; Werner 1988a, 1988b; Wood, C. S., Van Sickle, & Humble 1987: 21. (**ec**) Bushing 1965: 461; Craighead et al. 1927; Deyrup & Gara 1978: 275; Furniss, R. L. & Carolin 1977: 393; Gobeil 1936b; Graham 1952; Hunter & Davis 1963; Keen 1938: 128; Lindquist 1969c; Marsh 1979: 169; Mason, W. R. M. 1978; McAlpine

1964; Richerson & Borden 1972a; Swaine 1924d: 9; Thomas, J. B. 1958: 393; Thompson, W. R. 1943: 59; Tomalak, Welch, & Garroway 1989b, 1989d; Wichmann 1952b: 23; Werner & Holsten 1984. (**hb**) Baker, W. L. 1972: 262; Bright 1976d: 161; Browne 1968b: 366; Chamberlin 1939: 424, 1958: 171; DeLeon et al. 1934; Evans, J. 1952: 141; Furniss, R. L. & Carolin 1977: 393; Gara & Holsten 1975; Gobeil 1936a: 97–103, 1936b: 11–14, 1936c: 181–204; Graham 1952; Holsten, Werner, & Laurent 1980; Hopping, G. 1961b, 1965b: 533–535; Keen 1933b: 297, 1938: 128, 1952c: 165; Lindgren 1980a: 65; Pierson 1927: 121; Schmitz & Rudinsky 1968: 1–42; Simpson 1929b: 146; Swaine 1918a: 109, 115, 1924d: 9, 1929: 145–146; Swaine et al. 1924: 21; Watson 1927: 120, 1928: 613; Wolcott & Montgomery 1933: 167; Wood, S. L. 1982b: 677. (**ds**) Ashworth 1980; Ashworth & Brophy 1972: 2984; Baker, Hostetler, & Furniss 1977: 293; Baker, Hostetler, & Laurent 1977; Baranyay & Stevenson 1966: 85; Beaulne 1956; Beckwith 1972a; Bright 1976d: 161; Brown, C. E. & Stevenson 1963: 97; Browne 1968b: 366; Chamberlin 1939: 424, 1958: 171; Drooz 1985: 361; Evans, D. 1983: 33; Evans, D., Lowe, & Hunt 1978; Evans, J. 1952: 141; Furniss, R. L. & Carolin 1977: 392; Gara & Holsten 1975; Gast et al. 1989: 385; Gautreau 1974: 6; Gautreau & Melvin 1974; Gemminger & Harold 1872: 2691; Hagedorn 1910d: 56; Hatch 1930: 50; Henshaw 1885: 148; Hewitt 1914: 501–518; Hopping, G. 1965b: 533–535; Keen 1929a: 39, 1938: 128, 1952c: 165; Kleine 1913b: 128, 1934a: 151; Kusch 1967; Leng 1920: 341; Lindquist, O. H. & Syme 1981: 61; Morgan, A. V. & Morgan 1980; Orchard 1952: 85; Ruppel 1967: 54; Smith, G. J. & Melvin 1974a, 1974b; Smith, G. S. 1930; Still, Tidsbury, & Melvin 1974a, 1974b; Susut & Melvin 1974; Swaine 1909: 124, 1913: 89, 1919b: 9; Thomas, J. B. 1957: 4; Werner & Holsten 1984; Whitehouse 1920: 127–129; Wolcott & Montgomery 1933: 167; Wood, S. L. 1972a: 421, 1982b: 677. (**tx**) Beckwith 1972a; Benoit 1985: 137; Bright 1976d: 161; Chamberlin 1939: 424, 1958: 171; Dodge 1938: 48–49; Eichhoff 1869a: 274, 1878b: 248; Evans, D. 1983: 33; Fall 1926: 208; Hagedorn 1910a: 105; Hopping, G. 1963c: 512, 1965b: 533–535; Keen 1929a: 39; Kusch 1967: 9; Lanier 1987a: 109; LeConte 1876: 435; Lindquist, O. H. & Syme 1981: 61; Pardy 1974, 1977, 1983; Swaine 1909: 124, 1918a: 109, 115, 1919b; Thomas, J. B. 1957: 4, 1967; Titus, Meikle, & Harrison 1985: 78; Wood, S. L. 1960b: 66, 1972a: 421, 1977c: 386, 1979b: 135, 1982b: 677. (**ms**) Hopping, G. 1961b.

hudsonicus LeConte 1876: 366. Lectotype ♀; Hudson Bay Territory [Canada]; MCZ, Cambridge, designated by Wood 1982b: 677. Synonymy: Swaine 1918: 15, 109.

References: (**cn**) Hopkins 1904a: 25. (**hb**) Hopkins 1904a: 25; Schwarz 1894b: 255. (**ds**) Blatchley & Leng 1916: 639; Hagedorn 1910d: 54; Henshaw 1882: 269, 1885: 148; Hubbard & Schwarz 1878: 643; Kleine 1913b: 128, 1914b: 397, 1934a: 150; Leng 1920: 341; Swaine 1909: 123; Whitehouse 1920: 127–129; Wickham 1896a: 309. (**tx**) Blatchley & Leng 1916: 639; Hagedorn 1910a: 104; LeConte 1876: 363, 366; Swaine 1909: 123, 1918a: 15; Wood, S. L. 1982b: 677.

interpunctus Eichhoff 1878b: 241 (*Tomicus*). Syntypes, sex?; Sitka [Alaska]; Hamburg Museum, lost. Synonymy: Wood, S. L. 1977c: 386.

References: (**cn**) Anonymous 1960i, 1960j: 4; Bongberg 1957, 1962; Broun 1940b; Brown 1954; Browne 1968b: 365; Doane et al. 1936; Downing 1957: 117; Felt 1926: 249, 267, 1930a: 249, 267; Hatch 1938: 194; Keen 1938: 128, 1952c: 165; Kinghorn 1955a: 501–502; Prebble 1954; Randall 1952: 4; Rodary 1959: 852; Ruppel 1967: 54; Schuder 1969: 76; Swaine 1914: 23, 1918a: 110, 116. (**ec**) Keen 1938: 128; Rodary 1959: 852. (**hb**) Browne 1968b: 365; Chamberlin 1939: 430, 1958: 172–173; Doane et al. 1936; Felt 1926: 250, 267, 1930a: 249, 267; Keen 1938: 128, 1952c: 165; Swaine 1918a: 110, 116. (**ds**) Bongberg 1957; Bongberg & Bennett 1960: 1; Brown 1943: 8; Browne 1968b: 365; Chamberlin 1917: 325, 1925, 1939: 430, 1958: 172–173; Evans 1950: 107; Evans, D., Lowe, & Hunt 1978; Felt 1926: 250, 267, 1930a: 249, 267; Gautreau 1974: 5; Hagedorn 1910d: 55; Hopping, R. 1922, 1924b: 125–128; Keen 1929a: 39, 1938: 128, 1952c: 165; Kleine 1912a: 218, 1913b: 128, 1934a: 150; Leng 1920: 341; Patterson & Hatch 1945: 153; Ruppel 1967: 54; Schuder 1969: 76; Smith, G. S. 1929; Swaine 1909: 124. (**tx**) Chamberlin 1939: 430, 1958: 172–173; Eichhoff 1878a: 390, 1878b: 241, 246; Hagedorn 1910a: 105; Keen 1929a: 39; Swaine 1909: 124, 1918a: 110, 116–117; Wood, S. L. 1977c: 386, 1979b: 135.

***pilifrons* Swaine** 1912a: 353. Holotype ♀; Colorado [USA]; CNCI, Ottawa.

Notes: (1) Wood 1982b: 686 (subspecies established).

References: (**ay**) Hopping, G. 1964a: 117; Lanier & Kirkendall 1986: 87. (**cn**) Doane et al. 1936; Keen 1952c: 165; Massey 1956a: 20; Massey & Wygant 1954: 21; Price 1957: 94–95; Schuder 1969: 76; Swaine 1918a: 111, 119. (**ec**) Bushing 1965: 461; Davidson 1958, 1965: 461; Furniss, R. L. & Carolin 1977: 393; Kaya 1984; Knight 1961: 212; Lindquist 1969c; Marsh 1979: 212; Mason, W. R. M. 1978; Massey 1958: 28; Massey & Wygant 1954: 21; Poinar 1975: 162; Richerson, J. V. & Borden 1972a; Shook & Baldwin 1970. (**hb**) Chamberlin 1939: 430; Doane et al. 1936; Furniss, R. L. & Carolin 1977: 393; Hopping, G.

1964a: 117; Keen 1952c: 165; Massey & Wygant 1954: 21; Swaine 1918a: 111, 119. (**ds**) Chamberlin 1939: 430; Furniss, R. L. & Carolin 1977: 393; Hopping G. 1965d: 166; Keen 1952c: 165; Kleine 1913b: 128; Leng 1920: 341; Schuder 1969: 76; Shook & Baldwin 1970: 1345–1354; Wood, S. L. 1982b: 686. (**tx**) Bright 1967b: 676; Chamberlin 1939: 430; Hoebeke 1978; Hopping, G. 1963c: 510, 1965d: 161; Hopping, R. 1939: 168; de Ruette 1970: 103; Swaine 1912a: 353, 1917: 31, 1918a: 111, 119; Wood, S. L. 1957c: 397, 1960b: 67.

pilifrons pilifrons:

Figures: Hopping 1965d: 161, 163, 165.

Distribution: North America (W Colorado, Snowy Range in S Wyoming in USA).

Hosts: *Picea engelmannii*.

References: (**tx**) Wood, S. L. 1982b: 686.

***pilifrons utahensis* Wood** 1960b: 66. Holotype ♀; Logan Canyon, Utah [USA]; Wood Collection

Figures: Hopping 1965b: 536.

Distribution: North America (N Arizona, Colorado, S Idaho, Montana, Utah, W Wyoming in USA).

Hosts: *Picea engelmannii*.

Notes: (1) Wood 1982b: 688 (reduced to subspecies).

References: (**cn**) Flake & Germain 1970: 25; Frye 1971b: 25. (**ec**) Lindquist 1969c. (**hb**) Chamberlin 1958: 176; Wood, S. L. 1960b: 66. (**ds**) Chamberlin 1958: 176; Gast et al. 1989: 385; Hopping, G. 1965b: 534–539; Wood, S. L. 1948: 65, 1982b: 688. (**tx**) Chamberlin 1958: 176; Hopping, G. 1963c: 510, 1965b: 534–539; de Ruette 1970: 104; Wood, S. L. 1960b: 66, 1982b: 688.

***pilifrons sulcifrons* Wood** 1960b: 67. Holotype ♀; Santa Fe Ski Basin, New Mexico [USA]; CAS, San Francisco.

Figures: Hopping 1965d: 161, 163.

Distribution: North America (SW Colorado, New Mexico in USA).

Hosts: *Picea engelmannii, P. pungens*.

References: (**ay**) Hopping, G. 1964a: 117. (**cn**) Anonymous 1974e; Ostmark 1956: 8. (**hb**) Hopping, G. 1964a: 117. (**ds**) Anonymous 1974e; Hopping G. 1965d: 166; Wood, S. L. 1982b: 688. (**tx**) Hopping, G. 1963c: 510, 1963f: 213, 1965d: 161, 166; de Ruette 1970: 103; Wood, S. L. 1960b: 67, 1982b: 688.

***pilifrons thatcheri* Wood** 1975a: 29. Holotype ♀; Mt. Wheeler, Nevada [USA]; Wood Collection.

Distribution: North America (Mt. Wheeler in Nevada in USA).

Hosts: *Picea engelmannii*.

References: (**ds**) Wood, S. L. 1982b: 689. (**tx**) Wood, S. L. 1975a: 29, 1982b: 689.

***pini* (Say)** 1826: 257 (*Bostrichus*). Syntypes, sex?; probably Pennsylvania [USA]; Say Collection, lost.

Figures: Bright 1976d: 153, 203, 212, Dillon & Dillon 1961: 801, 813, Hopping 1964b: 973, Ives & Wong 1988: 80, Ryker & Rudinsky 1979: 204, Wygant & Lara 1967: 118.

Distribution: North America (SE Alaska/ Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland, Nova Scotia, Ontario, Quebec, Saskatchewan, Yukon in Canada/ Chihuahua in Mexico/ Arizona, California, Colorado, Connecticut, District of Columbia, Georgia, Idaho, Maine, Maryland, Massachusetts, Michigan, Minnesota, Montana, Nebraska, Nevada, New Hampshire, New Mexico, New York, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Utah, Vermont, Washington, West Virginia, Wisconsin, Wyoming in USA).

Hosts: *Pinus banksiana, P. contorta, P. jeffreyi, P. ponderosa, P. resinosa, P. strobus*, rare in other conifers.

Notes: (3) Sturm 1826: 76 (*dentatus*, nomen nudum, *pallipes*, nomen nudum, synonymy in LeConte 1876: 426, Eggers 1931c: 185).

References: (**ay**) Angst & Lanier 1979; Birch 1974b; Hopkins 1894g: 280; Mustaparta, Angst, & Lanier 1977, 1979; Mustaparta, Tommeras, & Lanier 1985; Mustaparta et al. 1984; Oester & Rudinsky 1975; Thomas, J. B. 1957; Thomas, J. B. & Krywienczyk 1966. (**bv**) Anderson, R. F. 1977: 17; Angst & Lanier 1979; Annila 1979: 12; Anonymous 1979a; Atkins 1966b: 954, 1967: 181; Bakke 1973; Baranchikov 1980, 1983: 12; Barr, B. A. 1969: 642; Billings, Gara, & Hrutfiord 1976: 177; Birch 1974b, 1978b; Birch & Light 1977; Birch, Light, & Mori 1977; Birch & Svihra 1979b; Birch & Wood 1975; Birch et al. 1980; Birgersson et al. 1984: 1049; Bletchly 1961: 16; Borden et al. 1981: 561; Callaham & Shifrine 1960: 146; Clemens 1916; Dethier 1947; Dewey, Ciesla, & Meyer 1974; Franklin 1968; Furniss, M. M. & Livingston 1979; Gardner 1957a; Gast, Stock, & Furniss 1988: 429; Geiszler, Gara, & Littke 1984; Goeden & Norris 1965b: 775; Gries et al. 1988: 429; Hertel, Hain, & Anderson 1969: 1084; Hosking & Knight 1975; Hunt & Borden 1988; Inscoe 1982; Inscoe & Beroza 1976: 147; Jacobson 1972; Kennedy, P. C. 1969; Klassen, Ridgway, & Inscoe 1982; Lanier & Burns 1978; Lanier et al. 1972; Light & Birch 1982; McMullen & Atkins 1962b: 1321; Miller, Borden, & Slessor 1989; Mustaparta 1979; Mustaparta, Angst, & Lanier 1977, 1979; Mustaparta, Tommeras, & Lanier 1985; Mustaparta et al. 1982, 1984; Oester & Rudinsky 1975; Orr 1935: 1021; Payne & Wood 1981: 492; Piston & Lanier 1974; Pitman 1966b; Plummer et al. 1976; Raffa & Klepzig 1989; Roelofs 1978; Rudinsky 1979a: 408; Sartwell, F. 1970; Schmitz, R. F. 1972, 1980, 1988; Schmitz, R. F. & Taylor 1969: 1–8; Seybert & Gara 1970: 947–950; Silverstein & Young 1976:

21; Swaby & Rudinsky 1976; Teale & Lanier 1988: 429; Thomas, J. B. 1970a: 47–48; Tumlinson, Mitchell, & Chambers 1976: 56; Vite, Bakke, & Renwick 1972: 1971; Vite & Pitman 1967: 683–701; Weber, R. & Schurig 1984; Wood, D. L. 1980b; Wood, D. L. & Vite 1961: 80; Wygant & Lara 1967; Young, J. C. et al. 1973. (**en**) Anderson, R. F. 1948: 596–602; Anonymous 1960j: 28, 1960q, 1962h, 1963j, 1963y, 1964h, 1965b, 1965f, 1965i, 1966f, 1967f, 1968g, 1968p, 1969m, 1970t, 1971e, 1972h, 1973c, 1974f, 1975e, 1975f, 1977i, 1979a, 1979f, 1980m: 30, 1981j, 1982b, 1983f, 1989b; Applejohn & Howse 1982a; Baker, W. L. 1972: 262; Balch 1945; Barnhill 1947: 222; Becker 1955d, 1959b, 1962, 1964a, 1964c; Becker, Abbott, & Rick 1956: 644; Berisford 1969a, 1969b: 691–692; Bess 1944: 14–16; Birch & Svihra 1979b; Blackman 1919: 89, 1950; Bousfield & Coulson 1978; Bousfield, Hagle, & Kohler 1988; Britton 1930; Brown, A. W. A. 1941: 23; Brown, C. E., Hopkins, & Robins 1966: 86; Brown, R. M. & Winter 1981; Browne 1968b: 367; Buffam 1968: 1465–1466; Byler et al. 1986; Chamberlin 1924, 1939: 425; Chambers 1946: 78; Chenier & Philogene 1989a; Chittenden 1899; Clark 1953: 1; Clemens 1916: 287–298; Collins & Connola 1958: 335–338; Comtois 1988: 182; Cottrell 1967: 99; Cottrell & Erickson 1978: 5; Coulson & Witter 1984: 534; Craighead 1927: 1–12; Curtis & Hadfield 1977a, 1977b; Curtis & Johnson 1975, 1978; Dewey & Clinton 1980; Dewey, Ciesla, & Meyer 1974; Doane et al. 1936; Dolph & Hadfield 1971; Dolph & Pettinger 1968: 30, 1969: 7, 1971: 5; Dooling, Dewey, & Ciesla 1973: 29; Drooz 1985: 359; Erickson & Wood 1979: 5; Felt 1901: 487, 1906: 334–376, 1913: 101, 1924: 265, 1926: 247, 265, 1930a: 245, 249, 267, 1935; Felt & Bromley 1942: 170, 1943: 326–327; Felt & Rankin 1932: 406; Fitch 1858; Foster & Hook 1972: 7; Friend 1940: 222–322; Frye 1971b: 25; Furniss, M. M. 1981; Furniss, M. M. & Livingston 1979; Gardiner 1957b; Gentry, G. R. et al. 1979: 779; Gibson et al. 1984, 1987; Gillette 1903: 117; Gillman & Bailey 1977: 7; Girault 1916: 291–308; Graham 1922a, 1924, 1939b, 1952; Gregg & Hadfield 1978; Hamel 1980: 774; Hanson, J. B. 1978: 31; Hanson, J. B., Hoffard, & Orr 1977: 51; Harrington 1881: 32; Harris 1841: 74, 1842: 74, 1852a: 78, 1862: 88, 1890: 87; Hawthorne 1965b; Helzner & Moyer 1979; Herrick 1935: 138, 248; Hofacker & Loomis 1982: 3, 1983: 3; Hofacker, Loomis, & Gilstrap 1988: 18; Hofacker, Loomis, & Tucker 1984: 5, 1987; Hofacker et al. 1989; Hoffman et al. 1988: 7; Holland & Tkacz 1984; Holsten, Werner, & Laurent 1980; Honing 1970: 21; Hopkins 1899b: 16, 1899c: 253, 341–422, 445; Hopping, G. 1951: 26, 1952; Howse et al. 1981: 45, 1982, 1983; Ives & Wong 1988;81; James et al. 1985; Johnson, D. W. & Minnemeyer 1976, 1977: 32; Johnson, P. C. 1967: 1–7; Kennedy, P. C. 1969; Klein, W. H. & Tegethoff 1970; Knapp 1985; Knapp et al. 1989: 10; Knopf, J. 1978, 1981; Knopf, J. et al. 1978: 31; Kohler, Dooling, & Bousefield 1985; Kondo & Moody 1987: 109; Kondo & Taylor 1985: 60; Lafrance 1921: 73; Landgraf 1966a: 27; Leach 1938: 24, 1940b: 219; Leach et al. 1937: 317; Lindgren 1980a: 65; Lindquist, O. H. & Syme 1981: 61; Livingston et al. 1988;4; Loomis, Hofacker, & Tucker 1985: 14, 1986; Lotan & Perry 1983; Lowe & Moyer 1980; Lucht 1966: 31; Lyle & Leveck 1956: 27; Lyon 1959: 1–2; MacAloney & Schmiege 1962; MacAloney & Secrest 1944: 12–13; MacDonald 1930: 188; Martin, J. L. 1965; Martineau 1985: 76; McGregor 1977b; McGuffin 1953: 117; Mitchell, R. G. & Sartwell 1974; Molnar, Harris, & Ross 1965: 102, 1967: 116; Moody 1988: 84; Mortenson, Emond, & Melvin 1974; Moyer 1977; Neal 1979: 799; Newton, M. & Holt 1971; Ollieu, Stipes, & Hoffman 1980: 26; Orr, L. W. 1925: 1021, 1934: 58–59, 1937: 29; Orr, P. W. 1966, 1980: 26; Orr, P. W., Pettinger, & Dolph 1965, 1966; Overhulser 1986; Packard 1877: 589–810, 1881: 166–170, 1890: 713–714; Parker, D. L. et al. 1977: 34; Parr 1943: 419; Payne & Wood 1981: 492; Pettinger & Dolph 1967: 32, 1969, 1970: 10, 1971: 7; Pettinger & Johnson 1973a: 1, 1973b: 13, 1974; Petty, J. et al. 1972: 5; Pierce, J. R. & Srago 1973: 17; Pierson 1923: 42, 1927: 108, 1953: 119, 121; Plumb 1958: 10; Raffa & Smalley 1988b, 1988c; Raimo & Sharon 1981; Reeks et al. 1945: 31; Renlund 1972: 2, 1975: 4, 1976: 5, 1979: 2; Richmond & McGuffin 1945: 42; Roelofs 1978; Rose, A. H. & Lindquist 1973: 92; Ross, D. A., Van Sickle, & Wood 1981: 89; Rudinsky 1959: 284–286, 1979a: 408; Ruppel 1967: 54; Ryker & Rudinsky 1979: 208; Salman 1938a: 615; Sartwell, C. 1971a; Sartwell, C., Schmitz, & Buckhorn 1971; Schedl 1928: 110; Schenefelt & Benjamin 1955: 60–61; Schenk & Benjamin 1964: 570–574; Schenk et al. 1957a: 840; Schmitz, R. F. 1972b; Schmitz, R. F. & Taylor 1969: 1–8; Schwandt et al. 1986; Sippell, Dance, & Rose 1967: 65; Sippell, Rose, & Larsen 1968: 60; Sippell et al. 1957: 50; Smith, A. 1981; Smith, G. J. & Melvin 1974a, 1974b; Smith, J. B. 1900: 363; Snowdon & O'Brien 1980: 59; Sterner & Davidson 1981: 17, 1983: 47; Stevens, Brewer, & Leatherman 1980: 25, 1982: 25; Stipe et al. 1987; Swaine 1918a: 110, 115, 1933: 30; Swaine & Craighead 1924: 1–27; Syme & Nystrom 1988: 58; Thier & Hoffman 1983; Thomas, J. B. 1958: 394, 1965a, 1970a, 1970b; Tunnock 1966: 22; Tunnock et al. 1984; Udine 1958: 11–12; Walsh 1867a: 103; Waters & Waterman 1957: 7; Weber 1943: 78; Weir, H. J. et al. 1984a: 116; Wenz 1985; Wilson, L. F. 1977: 70; Wilson, M. C., Schuder, & Provonsha 1982: 119; Wong, H. R. & Melvin 1973; Wood, C. S., Van Sickle, & Humble 1987: 13; Wood, C. S., Van Sickle, & Shore 1985;13; Wood, D. L. 1980b; Wood, R. O. 1969: 90; Wood,

R. O. & Doidge 1972: 21; Wygant & Lara 1967. (**ec**) Ashraf & Berryman 1969: 15; Batra 1959: 329–355; Bedard, W. D., Jr. 1966a: 936; Berisford 1969a, 1969b; Berisford, Kulman, & Pienkowski 1970: 484; Berisford et al. 1971: 237; Birch 1978b; Birch & Svihra 1979b; Borden et al. 1981: 561; Burks 1979: 799; Bushing 1965: 461; Callaham & Shifrine 1960: 146; Chamberlin 1939: 425; Chatelain & Schenk 1985; Ciesla, Dewey, & Tunnock 1971: 19; Cobb et al. 1968; Craighead et al. 1927; Davidson & Robinson-Jeffrey 1965; Felt 1906: 35; Furniss, M. M. & Livingston 1979; Furniss, R. L. & Carolin 1977: 390; Galoux 1947b, 1947d; Gardiner 1957a: 243–244, 256; Graham 1921, 1922: 99, 1924: 377–383, 1939a: 301–310, 1939b, 1952; Griffin, H. D. 1966: 1047–1048, 1968; Grissell 1979: 764; Heqvist 1959: 181; Hines, J. W. & Heikkenen 1977; Hirschmann 1978b; Hirschmann & Wisniewski 1982, 1983; Hunter & Davis 1963; Kabir & Giese 1966b: 897; Kinn 1971; Kudon 1979b; Kudon & Berisford 1980; Lanier 1967: 1134; Lanier et al. 1972; Leach 1940b: 219; Leach et al. 1934: 129, 1937: 317; Light, Birch, & Paine 1983; Lindquist 1969c, 1971; Livingston, W. H. et al. 1983; Marsh 1979: 158; Mason, W. R. M. 1978; Matthews 1970; McAlpine 1964; Mitchell, R. G. & Sartwell 1974; Morley 1939: 244; Pettey & Shaw 1986; Pierce, W. D. 1908: 387; Piston & Lanier 1974; Poinar 1975: 162; Powell, Wong, & Melvin 1972: 15; Price 1966: 241; Raffa & Smalley 1988, 1988b, 1988c; Reid 1955: 312, 1957b: 5, 1957c: 111–120, 1957d: 437; Rennerfelt 1951: 121; Rice 1968; Richerson & Borden 1972a; Rumbold 1931c: 864, 1936: 419; Salman 1938a: 615; Schedl 1932: 1–2; Schenk 1961: 3578; Schenk & Benjamin 1964: 570–574, 1969; Schenk et al. 1957a: 840; Schmitz, R. F. 1980, 1988a, 1988b; Schmitz, R. F. & Taylor 1969; Shcherbak 1985; Shenfeldt 1960: 542–546; Smetana 1971: 152; Stakman 1957: 245; Teale & Lanier 1988: 429; Tehon 1942: 238; Thomas, J. B. 1955: 341, 1958: 394, 1970a; Thompson, W. R. 1943: 59; Thompson, W. R. & Simmonds 1964: 23, 1965: 27; Tomalak, Welch, & Galloway 1989b: 2; Whitney 1971: 1502; Woodring 1966c: 123; Woodring & Moser 1970. (**hb**) Anderson, R. F. 1948; Angst & Lanier 1979; Annila 1971: 10; Anonymous 1979a; Baker, W. L. 1972: 262; Balogun 1970: 233; Birch 1974b; Blackman 1915, 1950; Borden 1967: 1164; Bright 1976d: 158; Bright & Stark 1973: 87; Browne 1968b: 367; Chamberlin 1939: 425; Chittenden 1890, 1899a; Ciesla & Bell 1968; Clemens 1916; Coulson & Witter 1984: 534; Dillon & Dillon 1961: 813; Doane et al. 1936; Drooz 1985: 359; Eidmann 1962: 161; Felt 1906: 35, 1926: 247, 267, 1930a: 245, 249, 267; Felt & Rankin 1932: 406; Fitch 1858: 722, 751; Furniss, R. L. & Carolin 1977: 390; Gobeil 1935; Graham 1939b, 1952; Harrington 1902a: 116; Harris 1841: 74, 1852: 78, 1862: 88; Herrick 1935: 138, 248; Holsten, Werner, & Laurent 1980; Hopkins 1894g, 1899b: 16, 1899c: 245, 253, 341, 422, 445; Hopping, G. 1961b, 1964b: 974; Ives & Wong 1988: 81; Johnson, P. C. 1967; Lafrance 1921: 73–74; Lanier et al. 1972; Lindgren 1980a: 65; MacAloney & Schmiege 1962; Martineau 1985: 76; Merkel & Kowal 1956: 4–5; Morley 1939: 244; Orr 1925: 1021–1022; Packard 1890: 713; Pierce, W. D. 1907: 292; Pierson 1927: 108; Plumb 1958: 10; Prebble 1933: 145–148; Reid 1955: 312–314, 1957d: 437; Ryker & Rudinsky 1979: 208; Sartwell, C. 1971a; Sartwell, C., Schmitz, & Buckhorn 1971; Sartwell, F. 1970; Schenk & Benjamin 1969: 480; Schmitz, R. F. 1972a, 1972b, 1988a, 1988b; Schwarz 1888a: 80, 1889d: 175; Seybert & Gara 1970; Stevens, Brewer, & Leatherman 1980: 25, 1982: 25; Swaine 1911b: 88, 1918a: 110, 115; Thomas, J. B. 1961: 384, 1970a; Wallace 1940: 305; Watson 1927: 121; Wilson, L. F. 1977: 70; Wolcott & Montgomery 1933: 167; Wong & Melvin 1973; Wygant & Lara 1967. (**ds**) Acciavatti & Weiss 1974; Adams & Moore 1963; Anonymous 1926c: 519, 1963j, 1963y, 1964h, 1965b, 1966f, 1967f, 1968g, 1968p, 1969m, 1973c, 1974f, 1975e, 1975f, 1977i, 1979f, 1979h: 3, 1980m: 30, 1981j, 1982b, 1983f; Atkinson et al. 1991: 158; Atwood 1945: 31; Beaulne 1956; Berisford, Kulman, & Pienkowski 1970: 484; Berisford et al. 1971: 237; Blackman 1950; Blatchley & Leng 1916: 639; Bongberg & Bennett 1960: 1; Bright 1971a: 126, 1976d: 158; Bright & Stark 1973: 87; Britton 1920a; Brown, C. E., Hopkins, & Robins 1960: 86; Brown, R. M. & Winter 1981; Browne 1968b: 367; Chamberlin 1917, 1925, 1939: 425; Chapuis & Candeze 1853; Chittenden 1890, 1899a; Choo, Woo, & Kim 1981: 201; Ciesla & Bell 1968: 235; Curtis & Johnson 1975; Dewey, Ciesla, & Meyer 1974; Deyrup 1981b: 6; Dodge 1938; Drake 1921: 201–205; Drooz 1985: 359; Evans, D. 1983: 34; Evans, D., Lowe, & Hunt 1978; Felt 1926: 247, 265, 1930a: 245, 249, 265; Felt & Bromley 1932: 406; Frost & Dietrich 1929; Furniss, M. M. & Furniss 1972; Furniss, M. M. & Livingston 1979; Furniss, R. L. & Carolin 1977: 390; Gast et al. 1989: 385; Gautreau & Melvin 1974: 14; Gemminger & Harold 1872: 2691; Hagedorn 1910d: 57; Henshaw 1885: 148; Hopkins 1893a: 139, 1893b: 212; Hopping, G. 1950a, 1964b: 974; Hubbard & Schwarz 1878a: 666; Kleine 1913b: 128; Knull 1931: 16; Kusch 1967; Lanier et al. 1972; Leach, Orr, & Christensen 1934: 315–341; Leng 1920: 341; Leonard 1928: 519; Lindquist, O. H. & Syme 1981: 61; Marchant & Borden 1976; Martin 1965: 40–43; Melsheimer 1806: 8, 1853: 87; Morgan, A. V. & Morgan 1980: 1110; Perris 1876: 254, 1877a: 414; Piston & Lanier 1974; Proctor 1946: 208; Provancher 1877: 570; Richmond & McGuffin 1945: 42; Ruppel 1967: 54; Schedl 1971f: 147; Schwarz 1888a: 80; Schwert et al. 1985; Smith, G. J. 1974a, 1974b; Smith, J. B. 1900: 363, 1910: 403; Snow 1883: 44;

Still, Tidsbury, & Melvin 1974a, 1974b; Susut & Melvin 1974; Swaine 1909: 123, 125, 1911b: 88; Syme & Nystrom 1988: 58; Thomas, J. B. 1955: 341; Walker 1912: 59; Wallace 1940: 305; Watson 1927: 120–121; Wickham 1896a: 309, 1896c: 168; Winter, T. G. 1983: 50; Wolcott & Montgomery 1933: 167; Wood, S. L. 1957c: 398, 1972a: 421, 1982b: 691; Wygant & Lara 1967. (**tx**) Benoit 1985: 137; Blatchley & Leng 1916: 639; Bright 1976d: 153, 158, 203, 212; Chamberlin 1939: 425; Chapuis & Candeze 1853; Clemens 1916; Dillon & Dillon 1961: 801, 813; Dodge 1938: 48, 50; Eggers 1931c: 185; Eichhoff 1878b: 252; Evans, D. 1983: 34; Ferrari 1867a: 47; Hagedorn 1910a: 105; Hopping, G. 1963b: 63, 1963c: 509, 1964b: 970, 973–974; Ives & Wong 1988: 80; Kirby 1837: 191; Kusch 1976; LeConte 1868: 163, 1876: 364, 426; Lindquist, O. H. & Syme 1981: 61; Muesebeck 1950: 133; Pardy 1974, 1977, 1983; Pardy, Stone, & White 1968; Perris 1877a: 414; Provancher 1877: 570; Ryker & Rudinsky 1979: 204, 208; Sartwell, C., Schmitz, & Buckhorn 1971: 3; Say 1826: 257, 319; Schedl 1932: 1; Schwarz 1889b: 149, 1889d: 175; Sturm 1826: 76; Swaine 1909: 123, 125, 1911a: 213–214, 1912: 353, 1918a: 110, 115–116; Syme & Nystrom 1988: 58; Thatcher 1957: 28; Thomas, J. B. 1957: 4, 1967; Thomas, J. B. & Krywienczyk 1966; Titus, Meikle, & Harrison 1985: 78; Wood, S. L. 1957c: 398, 1972a: 421, 1982b: 691; Wygant & Lara 1967: 118; Zimmerman 1868: 147. (**ms**) Chararas 1971a: 853; Chenier & Philogene 1989a; Eckstein 1900c; Eiber 1989; Gries et al. 1988; Plumb 1958: 10; Rose, A. H. & Lindquist 1973: 92; Schmitz, R. F. 1972a; Slessor et al. 1985; Weber, R. & Schurig 1984.

praefrictus Eichhoff 1868a: 401 (*Tomicus*). Holotype ♂; Amerique boreali; IRSNB, Brussels. Synonymy: LeConte 1868: 163, 1876: 365, Eichhoff 1878b: 252.

References: (**ds**) Leng 1920: 341; Swaine 1909: 125. (**tx**) Eichhoff 1868a: 401; Lanier 1987a: 107; LeConte 1868: 163, 1876: 365; Swaine 1909: 125.

oregonis Eichhoff 1869a: 274 (*Tomicus*). Holotype ♂; Oregon [USA]; IRSNB, Brussels. Synonymy: Hopping 1964b: 974.

References: (**ay**) Schonherr 1970b; Wood, D. L. 1961a: 187. (**bv**) Miller & Keen 1960: 91, 104; Orr 1925: 1022; Schonherr 1970b; Sugden & Ross 1960a; Wood, D. L. 1961b. (**cn**) Anonymous 1939: 644, 1940i: 850, 1958a: 8, 1960g, 1960i, 1960j: 6, 1960q, 1961e, 1961h, 1961s, 1962h, 1963e: 17, 1963j, 1963n; Blackman 1931c; Bongberg 1956a, 1962; Buckhorn 1957; Buckhorn & Orr 1961: 18, 1962: 17; Chamberlin 1924, 1939: 427; Currie 1905: 73, 100; Doane et al. 1936; Eaton 1956: 6; Essig 1926: 520, 1958: 520; Felt 1926: 249, 267; Gillette 1903: 117; Graham 1939b, 1952; Hall 1946: 54; Hatch 1938: 194; Hawthorne 1962, 1963, 1964; Hopkins 1902c: 10, 1904a: 17, 41, 1905: 77, 1906d: 254; Hornibrook 1936: 620–622; Hutson 1933: 291–304; Johnson 1940; Keen 1929: 49, 1933: 297, 1938: 115, 1952c: 146, 150; Keen & Salman 1942: 855; Leach 1940b: 223; Mathiesen 1952: 274; McComb 1955: 3; McGugan et al. 1959; Miller, J. M. 1929: 994; Miller, J. M. & Keen 1960: 91, 104; Orr, P. W. 1963a, 1963b; Orr, P. W., Silver, & Ross 1960: 97; Ostmark 1956: 8; Patterson 1923: 38; Price 1957: 97; Rosecrans 1947: 8; Rudinsky & Terriere 1959: 485–488; Schuder 1969: 78; Silver & Ross 1959: 88, 1960: 99, 1961: 99, 1962b: 119; Smith, G. J. & Melvin 1974b; Struble & Hall 1955: 13; Sugden & Ross 1960a, 1960b: 3; Swaine 1914: 23, 1918a: 110, 117; Tunnock 1963: 10; Wear & Buckhorn 1955: 13; Weaver 1934: 101; Whiteside 1957: 2–3, 18, 31–43; Wood, R. O. & Doidge 1972: 21. (**ec**) Blackman 1931c; Burks 1979: 824; Bushing 1965: 461; Callaham & Shifrine 1960; Chamberlin 1939: 427; Craighead et al. 1927; Davidson 1966; DeLeon 1934a, 1934b: 297–317; Edmunds 1973: 776; Gahan 1938; Graham 1939b, 1952; Haliburton 1943; Heqvist 1959: 181; Holst 1936; Keen 1938: 115; Keen & Salmon 1942: 855; Knight 1961: 357; Leach 1940b: 223; Lindquist 1969c; Lindquist & Bedard 1961; Lu et al. 1957: 336; Marsh 1979: 148; Massey 1957: 32; Mathiesen 1952: 274; Mathre 1964: 353–362, 1966; McAlpine 1964; Miller, J. M. 1929: 994; Miller, J. M. & Keen 1960: 11, 91, 104; Poinar 1975: 162; Rumbold 1936: 419; Rust 1933: 733–734; Shifrine & Phaff 1956: 52; Sugden & Ross 1960a, 1960b: 3; Thompson, W. R. 1943: 59. (**hb**) Blackman 1931c; Bongberg 1959a; Chamberlin 1939: 427, 1958: 171–172; DeLeon et al. 1934; Doane et al. 1936; Eaton 1956; Essig 1926: 520, 1958: 520; Felt 1926: 249, 267; Graham 1939b, 1952; Hopkins 1904a: 17, 41; Keen 1929: 49, 1933b: 297, 1938: 115, 1952c: 146, 150; McComb 1955: 3; Miller, J. M. & Keen 1960: 91, 104; Orr 1925: 1022; Pierce, W. D. 1907: 292; Reid 1956: 3; Struble & Hall 1955: 13; Swaine 1918a: 110, 117. (**ds**) Anonymous 1958a: 8, 1960: 10, 1963j, 1963y; Blackwelder 1947; Bongberg 1956a; Chamberlin 1917: 327–328, 1939: 427, 1958: 171–172; Cockerell et al. 1907; Currie 1905; Eaton 1956; Essig 1926: 520, 1958: 520; Felt 1926: 249, 267, 1930a: 249; Ferrer 1942; Gautreau 1974: 5; Gemminger & Harold 1872: 2691; Hagedorn 1910d: 56; Henshaw 1885: 148; Hopkins 1902c: 10; Hopping, G. 1950a; Hopping, R. 1922, 1924b; Keen 1929a: 39, 1929c: 49, 1938: 115, 1952c: 146, 150; Kleine 1912a: 217, 262, 268, 1913b: 128, 1914b: 403, 1934a: 151; Lange 1937: 173; Leng 1920: 341; McComb et al. 1953: 3; Patterson & Hatch 1945: 153;

Rosecrans 1947: 8; Ruppel 1967: 54; Schuder 1969: 78; Smith, G. J. & Melvin 1974b; Smith, G. S. 1929; Sugden & Ross 1960a, 1960b; Swaine 1909: 124, 1914: 23; Thatcher 1935: 261; Wickham 1896a: 309; Wood, S. L. 1948: 64, 1951a: 128. (**tx**) Benoit 1985: 137; Chamberlin 1939: 427, 1958: 171–172; Cushman 1931: 301–304; Eichhoff 1869a: 274, 1878b: 250; Hagedorn 1910a: 105; Hopkins 1905b: 77; Hopping, G. 1963c: 512, 1964b: 974; Keen 1929a: 39; Lanier 1987a: 109; LeConte 1876: 435; Swaine 1909: 124, 1918a: 110, 117; Thatcher 1957: 28; Wood, S. L. 1951a: 128. (**ms**) Bongberg 1959a; Hatch 1938: 194.

rectus LeConte 1876: 365 (*Tomicus*). Lectotype ♀; Oregon [USA]; MCZ, Cambridge, designated by Wood 1982b: 691. Synonymy: Swaine 1918a: 117.

References: (**ds**) Chamberlin 1917; Cockerell et al. 1907; Hagedorn 1910d: 58; Henshaw 1882: 269, 1885: 148; Kleine 1913b: 128; Leng 1920: 341; Snow 1907: 188; Swaine 1909: 126; Wickham 1896a: 309. (**tx**) Hagedorn 1910a: 105; LeConte 1876: 365–367; Schedl 1940a: 349; Swaine 1909: 126, 1918a: 117; Wood, S. L. 1982b: 691.

laticollis Swaine 1918a: 116. Lectotype ♂; Ottawa, Ontario, Canada; CNCI, Ottawa, designated by Bright 1967b: 675. Synonymy: Wood 1957c: 398.

References: (**cn**) Swaine 1918a: 110, 116. (**hb**) Chamberlin 1939: 427; Swaine 1918a: 110, 116. (**ds**) Beaulne 1956; Chamberlin 1939: 427; Leng 1920: 341. (**tx**) Bright 1967b: 675; Chamberlin 1939: 427; Hoebeke 1978; de Ruette 1970: 103; Swaine 1918a: 110, 116; Wood, S. L. 1957c: 398.

***plastographus* (LeConte)** 1868: 163 (*Tomicus*). Holotype ♂; California [USA]; MCZ, Cambridge.

Notes: (1) Lanier 1970: 415 (subspecies established).

References: (**ay**) Anonymous 1970q; Mankins, J. V. 1980; Oester & Rudinsky 1979; Thomas, J. B. 1967. (**bv**) Barr, B. A. 1969: 642; Eaton & Rodriguez 1967a: 25–26; Oester & Rudinsky 1979; Pitman 1966b. (**cn**) Anonymous 1960q, 1962h; Bongberg 1962; Browne 1968b: 367; Burke 1937: 28; Cottrell 1967: 99; Eaton & Rodriguez 1967a; Essig 1926: 520, 1958: 520; Herbert 1919: 337; Hopkins 1905: 75–76; Keen 1929: 49, 1938: 115, 1952c: 150; Lindgren 1980a: 66; Mankins, J. V. 1980; Molnar, Harris, & Ross 1967: 116; Powell 1905: 237–243; Ruhm 1964; Schwerdtfeger 1956b: 60, 1960b: 258; Swaine 1918a: 109; Van Dyke 1922: 180; Wood, R. O. & Doidge 1972: 21. (**ec**) Bedard 1966a: 936; Doane 1927; Furniss, R. L. & Carolin 1977: 390; Hirschmann & Wisniewski 1982, 1983; Keen 1938: 115; Kinn 1971; Lanier 1967: 1334–1335; Lindquist & Bedard 1961; Person 1940: 391; Rice 1968; Ruhm 1964; Schwerdtfeger 1960b: 258; Thompson, W. R. 1965: 27; Thompson, W. R. & Simmonds 1964: 24; Woodring 1966c. (**hb**) Anonymous 1970q; Bright 1976d: 160; Bright & Stark 1973: 89; Browne 1968b: 367; Chamberlin 1939: 423, 1958: 170–171; Eaton & Rodriguez 1967a; Essig 1926: 520, 1958: 520; Furniss, R. L. & Carolin 1977: 390; Johnson 1954a: 431; Keen 1929: 49, 1938: 115, 1952c: 150; Lanier 1967, 1970: 1406–1420; Lindgren 1980a: 66; Mankins, J. V. 1980; Powell 1905: 237–238; Schwertdfeger 1956b: 50; Swaine 1918a: 109; Trimble 1922, 1924: 382–390; Wood, S. L. 1982b: 694. (**ds**) Blackwelder 1947; Bright 1976d: 160; Bright & Stark 1973: 89; Browne 1968b: 367; Chamberlin 1925, 1939: 423, 1958: 170–171; Choo, Woo, & Kim 1981: 201; DeLeon 1938; Eaton & Rodriquez 1967a; Essig 1926: 520, 1958: 520; Evans, D. 1983: 34; Fall 1906: 202; Fall & Cockerell 1907: 217; Furniss, R. L. & Carolin 1977: 390; Gautreau & Melvin 1974: 14; Gemminger & Harold 1872: 2691; Gillette 1903: 117; Hagedorn 1910d: 57; Henshaw 1882: 269, 1885: 148; Hopping, G. 1963e: 1206; Hopping, R. 1922; Johnson 1954a: 431; Keen 1925c: 150, 1929a: 38, 1929c: 49 1938: 115, 1952c: 150; Kleine 1913b: 128, 1914b: 387, 1934a: 151; Lanier 1967; Leng 1920: 341; McGugan et al. 1959; Schedl 1963c: 159, 1971f: 147; Schwerdtfeger 1960b: 258; Swaine 1909: 125; Thomas, J. B. 1966; Wickham 1896a: 309; Wood, S. L. 1957c: 398, 1972a: 421, 1982b: 694. (**tx**) Blandford 1895b: 186–187, 1898c: 6; Bright 1976d: 153, 160; Chamberlin 1939: 423, 1958: 170–171; DeLeon 1938; Eggers 1929e: 50; Evans, D. 1983: 34; Hagedorn 1910a: 105; Hopkins 1905b: 75; Hopping, G. 1963b: 64, 1963c: 512, 1963e: 1206; Keen 1929a: 38; LeConte 1868: 163, 1876: 364; Mankins, J. V. 1980; Schedl 1955g: 43; Swaine 1909: 125, 1918a: 109–114; Thomas, J. B. 1967; Wood, S. L. 1957c: 398, 1972a: 421, 1982b: 694.

plastographus plastographus:

Figures: Bright 1976d: 153, Hopping 1963e: 1204.

Distribution: North America (British Columbia in Canada/ W California, Idaho, Oregon, Montana, Wyoming in USA).

Hosts: *Pinus contorta*, rarely in *P. ponderosa*.

References: (**ds**) Gast et al. 1989: 385. (**tx**) Bright 1976d: 153, 160; LeConte 1868: 163; Wood, S. L. 1982b: 694.

***plastographus maritimus* Lanier** 1970a: 1417. Holotype ♀; Rio del Mar, Santa Cruz Co., California [USA]; CNCI, Ottawa.

Distribution: North America (coastal California, Oregon in USA).

Hosts: *Pinus contorta, P. muricata, P. radiata, Picea sitchensis*.

Notes: (3) The status of this subspecies is

doubtful because extensive intergradation occurs in Oregon.

References: (**bv**) Ohmart & Voight 1982. (**cn**) Lindgren 1980a: 65. (**ec**) Ohmart & Voight 1982. (**hb**) Bright & Stark 1973: 90; Furniss, R. L. & Carolin 1977: 390; Lindgren 1980a: 65. (**ds**) Bright & Stark 1973: 90; Furniss, R. L. & Carolin 1977: 390; Lanier 1970: 1417; Ohmart & Voight 1982; Wood, S. L. 1982b: 694. (**tx**) Lanier 1970a: 1417; McNamara 1977: 196; Wood, S. L. 1982b: 694.

***robustus* (Knotek)** 1899: 15 (*Tomicus*). Syntypes, sex?; Dalmatia; not located.

Distribution: Africa (Algeria), Asia (Syria/ Turkey), Europe (Bulgaria/ Czechoslovakia/ Yugoslavia).

Hosts: *Pinus leucodermis, P. sylvestris,* uncommon in *Cedrus libonotica.*

Notes: (1) Eggers 1914: 40 (a variety of *erosus* Wollaston), Pfeffer 1955: 263 (a good species).

References: (**cn**) Chorbadzhievo 1929. (**ec**) Kleine 1908c: 214. (**hb**) Chorbadzhievo 1929: 147–186. (**ds**) Buresh & Lazarov 1956; Chorbadzhievo 1929: 147–186; Pfeffer 1936: 90, 1989a: 78. (**tx**) Eggers 1914: 40, 1921: 42; Knotek 1899: 15; Nunberg 1956c: 164; Pfeffer 1955a: 255; Schedl 1934f: 1645. (**ms**) Eggers 1910b.

erosus melanurus Reitter 1913a: 109. Syntypes, sex?; Mazedonien; NHMB, Budapest. Synonymy: Pfeffer 1955: 263.

References: (**tx**) Pfeffer 1955: 263; Reitter 1913a: 109; Schedl 1934f: 1645.

tridentatus Eggers 1921: 41. Lectotype ♂; Makri im Lycischen Taurus, Kleinasien; USNM, Washington, designated by Anderson & Anderson 1971: 34. Synonymy: Pfeffer 1955: 263.

References: (**cn**) Schimitschek 1944: 226. (**hb**) Schimitschek 1944: 226. (**ds**) Can 1964: 113; Schedl 1961b: 185. (**tx**) Anderson, W. H. & Anderson 1971: 34; Eggers 1921: 41–42; Nunberg 1956c: 164; Pfeffer 1955: 263; Schedl 1934f: 1645.

***sexdentatus* (Boerner)** 1767: 78 (*Dermestes*). Syntypes, sex?; Europe; not located.

Figures: Chararas 1962c: 190, Grune 1979: 146, Joly 1976b:figs. 145, 244–245, Li & Zhou 1980: 190, Lieutier et al. 1984: 28–29, Pfeffer 1989a:pl. 10, Yin, Huang, & Li 1984: 136.

Distribution: Asia (N Burma/ Heilongjiang, Jilin, Shanxi, Sichuan, Yunnan in China/ Japan/ Korea/ Thailand/ Turkey/ E USSR), Europe (Austria/ Belgium/ Bulgaria/ Corsica/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Hungary/ Italy/ Luxemburg/ Netherlands/ Norway/ Poland/ Portugal/ Romania/ Sardinia/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia).

Hosts: *Pinus* spp., rare in *Picea* spp.

References: (**ay**) Al-Rabiai 1972; Buning 1979; Chararas 1977b, 1981, 1983; Chararas, Berton, & Stephanopoulos 1974; Chararas, Chipoulet, & Courtois 1979; Chararas & Koutroumpas 1977; Chararas et al. 1972; Dudich 1921: 136–140; Dufrenoy 1920; Escherich 1923b: 449, 484, 536; Feytaud 1950a; Francke-Grosmann 1950; Fuchs 1911a; Lauge & Termier 1974; LeFay 1969; Lekander 1959b: 31; Lieutier 1982b, 1983, 1984b, 1984c, 1985; Lieutier, Jastrabsky, & Bonnafe 1984, 1985a, 1985b; Lieutier & Seureau 1981; Michalski 1962: 29–32; Nunberg 1950a: 135–136; Nusslin 1911a: 51, 156; Pignal, Chararas, & Bourgeay-Causse 1987; Scherb 1971; Schevyrew 1889a: 21; Schonherr 1970b; Sedlaczek 1902b: 244; Termier 1970a: 721–732, 1975; Termier & Lauge 1974, 1976; Wichmann 1912a: 10. (**bv**) Adlung 1958; Arefin 1983; Bakke 1968: 443–602, 1973; Barr, B. A. 1969: 642; Besceli & Ekici 1969; Bouhot, Lieutier, & Debouzie 1988: 439; Chararas 1966c, 1967a: 668–680, 1967b: 777–785, 1967c: 226–231, 1976b, 1977b, 1980a, 1982; Chararas & Berton 1967: 1471–1474; Chararas & Crosasso 1972a, 1972b; Chararas & Deschamps 1962; Chararas, Desveaux, & Kogane-Charles 1960: 921; Chararas et al. 1982: 1094; Dassler & Henker 1959: 74–76; Francke et al. 1986; Gavyalis & Jakaitis 1981; Grune 1979: 147; Haggstrom 1976; Hallgren, Lekander, & Lonner 1972; Inscoe 1982; Inscoe & Beroza 1976: 147; Jactel & Lieutier 1987; Jotland 1975a; Klassen, Ridgway, & Inscoe 1982; Kohnle, Kopp, & Francke 1986: 316; Kohnle et al. 1988; Leluan, Leluan, & Chararas 1987; Luitjes 1976; Meixner 1938: 1218; Nunberg 1950a: 136; Nuorteva 1956c: 22; Paiva, Pessoa, & Vite 1988; Perrot 1977; Rozhkov 1970: 150; Rutledge, Chararas, & Ducauze 1988; Schonherr 1970b; Schonherr, Vite, & Serez 1983; Schwerdtfeger 1981: 189; Serez & Schonherr 1985; Silverstein & Young 1976: 21; Vite, Bakke, & Renwick 1972: 1971; Wichmann 1912a: 101; Wood, D. L. 1961b. (**cn**) Agafonov & Kuklin 1979; Androic 1966: 48; Anonymous 1948k: 4, 1978e, 1978i, 1979p; Ass & Funtikow 1941; Baeta Neves 1943b, 1952a, 1957, 1958; Bakke 1960: 310; Berdennikova 1954: 85; Bernhard 1929: 413–414; Besceli 1963; Besceli & Ekici 1969; Blandford 1892a; Bogdanova 1986; Borodajewsky 1915: 1222–1247; Borodin 1915: 1–87; Boyer 1840; Browne 1968b: 367; Bruneau 1950; Carle, Vincq, & Bizet 1979; Chararas 1961b: 81, 1978; Chorbadzhievo 1929; Dagci 1949: 12, 281–282; Defne 1954: 80–91; Donaubauer 1960; Dufrenoy 1920: 65–70, 81–87; Dussel 1949; Eckstein 1926: 575; Egorov 1958: 1492; Escherich 1917: 97–115, 1923b: 449, 484, 536, 1937; Esterberg 1959; Fang, Wang, & Chi 1985; Fedorov 1930: 225–229; Ferreira & Ferreira 1986; Feytaud 1946: 7, 1950a, 1950b; Fice 1961: 173–204; Foltz, Corneil, & Reich 1985; Frohlich 1926:

101; Gabler 1955; Geisthardt 1939: 243–246; Gois 1944; Golovyanko 1926: 1–87; Gradojevic 1940; Grandi 1951; Gusev 1928: 144; Haget 1949; Haggstrom 1976; Hallgren, Lekander, & Lonner 1972; Hanson, H. S. 1937, 1940a, 1950: 18–26; Heqvist 1965; Hess 1914: 276, 1927: 1332; Hierholzer 1954a: 34a; Hoffmann 1952a: 104; Hrubik 1973; Hubault 1945; Ialzentkovski 1922: 7–9; Ishikura 1966; J. M. 1948: 463; Jablokoff 1953: 325; Jahn 1952a: 98, 1960b; Joly 1949b: 253, 1976; Judeich & Nitsche 1895: 494; Kailidis & Markalas 1988; Kamyshnyi 1925: 14–16; Kazanskii 1928: 861–915; Kharitonov 1924: 199–204; Kholodkovskii 1912: 313; Kobakhidze 1960: 1851; Koch 1913: 103; Koehler 1954: 177; Koehler & Zdanowicz 1954: 19–59; Koning 1939: 2015; Kontkanen 1932: 59; Kozikowsky 1929: 254; Kruel 1950: 6; Kurenzov 1935c: 189, 1948b: 143; Laidlaw 1947: 52; Lekander 1954b: 16, 1955a: 136; Lekander, M. 1951: 106; Lesne 1913: 213; Liu et al. 1989; Lozovoi 1949a: 246, 1950c: 306, 1961: 91–113, 1966; Lozovoi & Tropin 1965, 1967; Maksymov 1950: 502; Malazgirt 1966: 63; Marie 1924: 328–330; Maslov et al. 1980; Masnina 1957: 15–17; Mathiesen-Kaarik 1953: 6; Mayne 1926: 234–245; Metrevelli 1955: 99; Mokrzecki 1928: 273, 1933: 286; Muller 1912: 186; Nestertschuk 1930: 172; Neves et al. 1986; Niemeyer 1974: 289, 1975: 154, 1976: 135, 1982; Niemeyer & Thalenhorst 1974; Nosek 1952b: 96; Nusslin 1883: 152, 1913: 202; Palm 1948b: 214; Pierce, W. D. 1917: 69; Polozencev 1926: 1–5; Polozencev & Zolotov 1969; Polubojarinoff 1929: 45–52; Popovic 1931: 57; Prosoroff 1929: 17; R. P. 1948: 193; Rhumbler 1922: 310, 1927: 324; Romanyk 1963b: 159; Rudinsky 1965b; Rudnev 1966; Ruhm 1958: 308; Ryle 1951: 179; Saalas 1949: 344, 384; Salonen 1966; Sargos 1947; Sauvard, Lieutier, & Levieux 1988; Schimitschek 1932a: 23, 1936b: 76, 1937c: 57, 1938c: 2112, 1939b: 545–588, 1939d: 2112, 1944: 187, 1949b: 179, 1949c: 15, 1950: 10, 1952c: 59, 1955a: 76, 78, 1955b: 102, 1955c: 89, 1961a: 154; Schmidt 1881: 30; Schonherr, Vite, & Serez 1983; Schwerdtfeger 1944a: 176, 1950b: 49, 1957a: 183, 1968a; Sedlaczek 1921: 335; Serez & Schonherr 1985; Siemazko 1939: 1–54; Sinreich 1961: 166; Sitowski 1930: 1–13; Templin 1973: 105; Titova 1966; Tolskii 1927; Toth 1976: 138, 1985; Tragardh 1917; Tullgren 1916: 104; Vassiliev 1913: 1–99; Vorontzov 1968; Voute 1942: 12, 617; Wachtl 1901: 381; Wardle 1929: 325; Weber, H. 1926: 503; Wichmann 1927b: 352; Wilke 1931: 625; Wolff & Krausse 1922: 97; Yanovskii & Korotkov 1984; Zarco 1946a: 252, 1946b: 463–468; Zhang et al. 1958: 29; Zivojinovic 1963: 449. (**ec**) Acatay 1943b; Agafonov & Kuklin 1979; Apfelbeck 1916b: 429–439; Arnoldi 1953; Ass & Funtikow 1941; Baeta Neves 1943b; Bakke 1957, 1968a; Balazy & Michalski 1964b; Barbey 1927; Bovey 1970; Bramannis 1940; Chararas 1958b, 1959a, 1959c, 1959g: 215–233, 1966a: 3–37, 1966c, 1967a: 668–680, 1967b: 777–785, 1967c: 226–231; Chararas, Berton, & Stephanopoulos 1974; Chararas & Crosasso 1972a, 1972b; Chararas et al. 1982: 1094; Cooreman 1963: 45; Ditu 1974; Dufrenoy 1920; Escherich 1942: 656; Espanol 1967a; Fuchs 1929a, 1930, 1937; Fuhrer 1985; Galoux 1947b; Gauss 1954a: 423; Guillaume 1950; Gyorfi 1941b, 1943: 84; Haget 1950; Heliovaara & Lilja 1989; Heqvist 1963: 155, 1965: 23; Herald & Mercadier 1984; Hierholzer 1954a: 341; Hirschmann 1960; Hirschmann & Wisniewski 1982, 1983; Jamnicky 1957b: 13, 20; Joly 1949a: 7; Kaarik 1973; Kaya 1984; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1980a, 1980b, 1983; Kirshenblat 1948; Kleine 1908c: 214, 1909a: 48, 76, 1944: 69; Kobakhidze 1960: 1851; Kobzar 1968b; Kostenko 1929; Kostin 1964: 119; Kraemer 1950b: 380; Krivosheina 1974; Kurenzov 1934a: 50; LeFay 1969; LeFay et al. 1969: 2968–2970, 3130–3132, 1970; Levieux et al. 1989; Li & Zhou 1980: 71; Lieutier 1975, 1978, 1979a, 1979b, 1979c, 1980, 1981, 1982a, 1982b, 1984b, 1984c, 1984d, 1984e, 1985; Lieutier, Cheniclet, & Garcia 1989; Lieutier & Ferrell 1988a: 430, 1988b: 163; Lieutier, Jastrabsky, & Bonnafe 1985a, 1985b; Lieutier & Laumond 1978; Lieutier & Seureau 1981; Lieutier & Vallet 1982; Lieutier & Yart 1989; Lieutier et al. 1988, 1989; Lindquist, E. E. 1969c; Lozovoi 1948a: 70, 1948h: 313, 1949a: 246; Lozovoi & Tropin 1965, 1967; Luitjes 1976; Lukasheva 1986; Lundberg 1984; Mahunka 1968; Malakhova 1963; Maslov et al. 1980; Mathiesen-Kaarik 1953: 6, 1960c; Megalov & Bazhenov 1927: 1–29; Meyer 1934: 614; Michalski & Ratajczak 1989; Nelmes & Hussain 1972; Niemeyer & Thalenhorst 1974; Nikitiuk 1951: 59, 1952: 41; Nikitsky 1978; Nosek 1952b: 96; Novak 1952: 417; Nunberg 1930: 201; Nuorteva 1957b: 50, 1971; Nusslin 1927: 324; Palmen 1944: 195; Pfeffer 1923a: 332, 1928b: 6, 1943b: 179, 1960: 346; Pignal, Chararas, & Bourgeay-Causse 1988; Poinar 1975: 163; Polozencev & Zolotov 1969: 3–6; Polozencev, Zolotov, & Latys 1970; Pomotskaya 1979; Rafes 1962; Rudnev 1926: 32–69; Ruhm 1956b: 4, 1960: 203; Saalas 1917a: 18, 1949: 344, 384; Salonen 1966; Scheucher 1959: 263; Schimitschek 1941a: 305, 1941b: 59, 1948c: 129, 1950: 10, 1953b: 533, 1955a: 76, 78; Schvester 1957b: 138; Schwerdtfeger 1946a: 176, 1950b: 49, 1951a: 183; Sedlaczek 1935a: 161; Sitowski 1930: 5; Slankis 1969; Stiller 1938; Sukovatova, Milovidova, & Trubacheva 1987; Thompson, W. R. 1943: 59; Titova 1966; Toth 1979; Vosylyte 1978; Vosylyte & Blinova 1978; Wiackowski 1957a: 80; Wichmann 1955a: 105; Wilke 1931: 625; Woodring & Moser 1970; Yanovskii 1977b; Yanovskii & Korotkov 1984; Zinovjev 1957: 333. (**hb**) Acatay 1943b, 1963; Agafonov &

Kuklin 1979; Alkan 1946: 113, 1964: 345–401; Anonymous 1920: 127, 1942: 68–71, 1948k: 4; Apfelbeck 1916b, 1917; Arefin 1983; Awerkiew 1941; Baeta Neves 1943b, 1945; Bakke 1960: 310, 1968a; Barbey 1901: 10, 24, 81, 1913, 1942; Bargmann 1906; Beaver & Browne 1975: 291; Beffa 1949, 1961; Behlen 1826; Besceli 1963; Besceli & Ekici 1969; Bonnemaison 1953; Borodajewsky 1916: 1244–1247; Borowski 1958; Brandt 1948; Braun 1941c; Browne 1968b: 367; Bukowsky 1930; Byers 1984a; Cabral 1959; Cecconi 1924; Chararas 1961b: 81, 1961c: 91, 1962c: 189, 1966a, 1966c, 1967b, 1967c, 1977b, 1980a; Chararas & Berton 1967; Charvat 1950; Chorbadzhievo 1929; Dagci 1949; Dombrowsky 1887, 1892; Dufrenoy 1920; Eckstein 1897, 1926: 575; Eichhoff 1881a: 49, 212; Escherich 1923b: 449, 484, 536; Everts 1900, 1903: 762; Ferreira & Ferreira 1986, 1989; Feytaud 1946, 1950a; Fuchs 1904a, 1905c: 340, 1911b; Gabler 1955; Gillanders 1908; Gois 1944; Gornostaev 1916: 311; Grandi 1951; Gyorfi 1957; Hagedorn 1903a; Haget 1948; Hallgren, Lekander, & Lonner 1972; Hennings 1907c: 605, 1908a, 1908b, 1908d; Henschel 1895a: 186; Hess 1914: 276, 1927: 332; Hufnagl & Puzyr 1951: 109, 119; Joly 1949: 7, 1976a, 1976b; Jotland 1975a; Judeich & Nitsche 1895: 494; Juutinen 1978; Karpinski 1933b: 36; Karpinski & Strawinski 1948: 157; Keller 1907a: 180, 1913: 241; Kholodkovskii 1912: 313; Kleine 1908a: 98; Knotek 1894a: 558, 1897: 160, 1898b: 333; Kobzar 1968a; Kostin 1960: 135; Kraemer 1950b: 380; Krivolutskaya 1960; Kurenzov 1935a: 41, 1948b: 107, 1950d: 213; Lekander 1954b: 16, 1959b: 31; Lengerken 1939: 68, 1954: 89; Li & Zhou 1980: 71; Lieutier 1981; Lieutier & Ferrell 1988a: 430, 1988b: 163; Lieutier et al. 1984; Louzil 1961: 43; Lozovoi 1966; Lozovoi & Tropin 1965, 1967; Luitjes 1976; Lunardoni & Leonardi 1889: 460; Madon 1930: 112; Maksymov 1950: 502; Malakhova 1963: 89–94; Maloletenkov 1908: 99–113; Michalski 1959a: 290–291; Munro 1926: 69; Nikitiuk 1957: 51–55; Nuorteva 1956c: 22; Nusslin 1898: 281, 1906b: 14, 16, 1907: 613, 1913: 202, 1927: 324; Petrenko 1966; Pfeffer 1941b: 3, 1941c: 7; Platonoff 1942: 64; Postner 1974: 459; Rafes 1962; Rhumbler 1922: 310, 1927: 324; Rimski-Korsakov et al. 1949: 288; Rozhkov 1970: 150; Rupertsberger 1879: 231, 1880: 230; Saalas 1913a: 69, 89, 1949: 344, 384; Schedl 1981b: 92; Schevyrew 1905c: 192; Schimitschek 1944: 187, 1948c: 129, 1955a: 76, 78, 1955b; Schmidt 1881: 30; Schneider-Orelli 1947b: 102, 157; Schvester 1957b: 139; Schwerdtfeger 1944a: 176, 1957a: 183, 1968: 50–52, 1981: 189; Sedlaczek 1921: 335, 1935a: 161; Spessivtsev 1913a: 74; Stark 1926a: 337, 1952: 397; Termier 1970b; Toth 1985; Tragardh 1914: 93, 1930c: 471, 1931: 56, 1939b: 151, 201; Tschorbadjiev 1929: 174; Voute 1942: 617; Wachtl 1876a: 455, 1901: 381; Wang 1982; Weber, H. 1926: 513; Wichmann 1927b: 352; Winogradoff 1911: 147; Wolff & Krausse 1922: 97; Yang 1989c; Zinovjev 1957: 33.

(**ds**) Acatay 1943: 2, 1963; Acloque 1896; Ammann & Knabl 1913, 1923; Androic 1966: 48; Anonymous 1978i, 1978w, 1979p: 147; Atkinson 1921; Audras & Schaefer 1957; Aullo 1919: 19–28, 46–47; Baeta Neves 1941: 1–15, 1943: 235–261, 1945, 1952a; Bakke 1960: 310; Barthe 1896; Bau 1888; Beaver & Browne 1975: 291; Bedel 1888b: 401, 417; Beffa 1949; Behlen 1826; Belousov 1916, 1917: 335; Besceli 1963: 50–57; Besceli & Ekici 1969: 32; Bistrom & Vaisanen 1988: 42; Borchert 1951; Brakman 1966b: 207; Brancsik 1906; Browne 1968b: 367, 1972b: 19, 1981b: 598; Bruggemann 1878; Brundin 1934; Bukowsky 1930; Buresh & Lazarov 1956; Butovitsch 1963; Cabral 1959; Cecconi 1897; Champion 1894; Chararas 1961c: 95, 1966a; Charvat 1950; Cho 1957; Choo 1983: 95; Choo & Woo 1985: 165; Choo, Woo, & Nobuchi 1988a: 134; Chorbadzhievo 1924d, 1929; Chrystal 1937; Debatisse 1945; Defne 1954: 80–91; Donisthorpe 1933b; Dzhambazishvili 1961a: 751–757, 1253–1254, 1961b; Eder 1934; Eggers 1904, 1912f; Endrodi 1958a, 1958b, 1986: 217; Ericson & Sandin 1893; Ermisch 1953; Escalera 1919; Escherich 1923b: 449, 484, 536, 1932b; Esterberg 1928, 1959; Everts 1900, 1922: 654, 1925; Fauvel 1885; Fedorov 1930; Florov 1949: 117; Foster 1949; Fowler 1891; Fricken 1889: 345; Fuchs 1904a, 1905a, 1905c: 340; Gabler 1949b; Gaunitz 1928: 92; Gemminger & Harold 1872: 2691; Gobbi 1989: 61; Gornostaev 1917; Gouillard 1962; Grill 1895: 310; Grouzelle 1905; Gussmann 1919: 75; Gyorfi 1941b; Hagedorn 1903a, 1910d: 58; Hallett 1923a: 13–14, 1923b, 1923c; Hansen, V. 1939, 1956; Hellen 1947; Hennig 1954: 261, 263; Henschel 1895a: 186; Heyden 1881: 177, 1893: 177; Heyden, Reitter, & Weise 1883: 182, 1891: 672, 1906: 712; Hickin 1963; Hilden 1925; Hoffmann 1952a: 104; Horion 1951; Ishikura 1966; Jazentkovsky 1912: 289; Joblokoff 1953: 325; Joly 1949b: 253, 1976; Judeich & Nitsche 1895: 494; Kailidis 1985; Kailidis & Markalas 1988; Karpinski 1925: 217, 1926: 83, 1931: 35, 1933b: 36; Karpinski & Strawinski 1948: 157; Keler 1922b: 211, 1923: 41–45, 1925b: 273; Kempers 1902: 67; Kersten 1933: 76; Kevan 1949: 30; Klefbeck & Sjoberg 1960: 232; Kleine 1913a: 35, 1913b: 128, 1914b: 247, 250, 1934a: 151; Kloft & Hinks 1945: 218; Knotek 1892a: 37, 1894a: 558, 1898b: 333; Ko 1969: 279; Kobzar 1968: 29–36; Koltze 1901: 153; Kontkanen 1932: 59; Koschitsky 1900: 83; Kostenko 1929; Krivolutskaya 1960; Kurenzov 1934a: 50, 1935a: 41, 1935c: 189, 1936a: 111, 1936b: 350, 1938a: 59, 1940: 77, 1947c: 7, 1950: 213, 1965, 1967; Langhoffer 1915c: 158; Larroche & Torossian 1971; Leclercq 1971; LeFay et al. 1969, 1970; Lesne 1913: 213; Li, Dang, & Shi 1977: 71; Lindberg & Saris 1952: 59; Lloyd 1948: 47; Lomnicki

1886a: 243, 1913b: 148; Loyttyniemi 1975: Lucht 1987: 279; Luna de Carvalho 1947: 15; Lunardoni & Leonardi 1889: 460; Lundberg 1978a; Majzlan et al. 1987; Malazgirt 1966: 63; Mandl 1931: 25; Mequignon 1936: 15; Mokrzecki 1928: 273; Munster 1928: 290; Murayama 1937b: 373, 1939: 142, 1940a: 232, 1942a: 52; Negru 1966b: 403, 1968a: 457; Novak, P. 1952: 417; Nunberg 1928b: 88, 116, 1930: 200–208, 1954: 85; Nuorteva 1955b: 195, 1971: 65; Nusslin 1898: 281; Oliveira 1887: 328; Ortzen 1886: 280; Palmen 1946: 195; Pfeffer 1928b: 6, 1931b: 74, 1933: 3–54, 1935: 159, 1947e: 4, 1960: 346, 1984: 277, 1989a: 74; Pierce, W. D. 1917: 69; Pittioni 1943: 175; Plaza & Gil 1982: 250; Pomerantzev 1907b: 493; Postner 1974: 459; Rapp 1934: 730; Redtenbacher 1874: 377; Reitter 1894a: 80, 1916: 303; Revy & Siroki 1942: 82; Rimski-Korsakov et al. 1949: 288; Romanyk 1963b: 159, 1966: 87; Roubal 1941: 273; Rozhkov 1970: 150; Rudnev 1965b; Ruskov 1928c: 61; Ryle 1951: 179; Saalas 1913a: 69, 89, 1917a: 18, 1919: 1–415, 1931: 70; Saint-Albin 1949: 2; Sainte-Claire 1914: 473; Sainte-Claire & Mequignon 1938: 448; Sanonen 1966; Schedl 1950d: 17, 1952f: 87, 1953e: 22, 1959h: 100, 1960f: 172, 1967c: 72, 1971d: 43, 1971f: 147, 1980a: 28, 1981b: 92; Schewgultz & Tinelus 1930: 258; Schilsky 1909: 188; Schwarz 1886: 42; Schwerdtfeger 1981: 189; Seidlitz 1891a: 565, 1891b: 611; Sharp & Fowler 1893: 34; Shirskaya 1961; Sierpinski 1969a; Sokanovskii 1960; Sparre-Schneider 1889: 60; Stark 1926a: 337, 1926b: 105, 1926j: 127, 1931a: 27, 1931d: 549, 1952: 397; Stein & Weise 1877: 164; Stierlin 1898: 443; Stierlin & Gautard 1906: 205; Strand 1946: 603; Strand & Hanssen 1935: 70; Tragardh 1914: 93, 1917: 1–28, 1939b: 151, 201; Tredl 1907: 15; Tschorbadjiev 1929: 176; Ulanowski 1884: 6; Wachtl 1876a: 455; Wanka 1908: 231; Wegelius 1960: 107; Westhoff 1882: 239; Wichmann 1924: 16, 1927a: 76, 1955a: 105; Wiepken 1883: 89; Wilke 1931: 625; Winter, T. G. 1983: 50; Yanovskii 1974, 1977a, 1989: 64; Yanovskii & Dmitrienko 1983; Yanovskii & Tegshzhargal 1985: 412; Yin, Huang, & Li 1984: 135; Zinovjev 1955: 187; Zivojinovic 1960: 35; Zoufal 1920: 21. (**tx**) Acloque 1896; Alkan 1946: 113; Altman 1844; Balachowsky 1949a: 263; Barbey 1901: 10, 24, 81; Bedel 1888b: 401, 417; Beffa 1949, 1961; Behlen 1826; Blandford 1893d; Boerner 1767: 78; Cabral 1959; Ceballos 1945; Chararas 1962c: 190, 1966a: 14; Charvat 1950; Choo 1983: 95; Chorbadzhievo 1924d; Dombrowsky 1887, 1892; Duffy 1953; Eggers 1912f, 1915d: 96–97, 1921: 39–43, 1929e: 42; Eichhoff 1878b: 221, 1881a: 49, 212; Endrodi 1957b; Escherich 1923b: 449, 484, 536; Everts 1903: 762, 1922: 645; Fauvel 1885, 1889; Ferrant 1911; Fleischer 1927; Formanek 1907: 41; Fricken 1889: 345; Fuchs 1911a; Gabler 1949b, 1955; Gillanders 1908; Grune 1979: 146–147; Hagedorn 1910a: 105; Hansen, V. 1956; Henschel 1895a: 186; Heyden 1893: 177; Hopping, G. 1963c: 516; Iablokoff-Khnzorian 1961: 105; Joly 1976b:fig. 145, 244–245; Judeich & Nitsche 1895: 494; Karpinski & Strawinski 1948: 157; Knotek 1892a: 37; Koch 1913: 103, 1928: 80, 1932: 118; Kuhnt 1913: 1057; Kurenzov 1941a: 205, 1948b: 107; Lekander 1959b: 31; Letzner 1858: 1, 1891: 376; Lieutier et al. 1984: 28–29; Louzil 1961: 108; Lovendal 1889b: 55, 1898: 138; Lucht 1987: 279; Lunardoni & Leonardi 1889: 460; Meixner 1937: 1218; Murayama 1937b: 373–374, 1939: 142, 1940a: 232; Negru 1966b: 403; Nunberg 1954: 85; Nusslin 1911a: 51, 156; Olivier 1795b: 11; Pesson & Chararas 1969: 684; Pfeffer 1932b: 25, 1941b: 3, 1941c: 7, 1947c: 4, 1989a:pl. 10; Plaza & Gil 1982: 250; Portevin 1935: 336; Postner 1974: 459; Prell 1929: 90; Quaschik 1953: 35; Rabiai 1972: 1030–1031; Redtenbacher 1874: 377; Reitter 1894a: 80, 1913a: 104, 1916: 303; Rey 1892b: 30; Rhumbler 1922: 310, 1927: 324; Rupertsberger 1879: 231, 1880: 230; Saalas 1913a: 69, 89, 1914: 89, 1919: 1–415, 1949: 344, 384; Schedl 1934f: 1645, 1941a: 42, 1950a: 86–87, 1950d: 17, 1952f: 87, 1953e: 22, 1955g: 36, 1980a: 28, 1981b: 92; Scherb 1971; Schevyrew 1889a: 21; Schilsky 1888: 354; Schimitschek 1937c: 57, 1940: 84–113, 1955c: 89; Schlechtendal & Wunsche 1879: 125; Schwarz 1886: 42; Seidlitz 1891a: 565, 1891b: 611; Sokanovskii 1928: 667–668, 1960: 677; Spessivtsev 1913a: 72–74, 1922a: 482, 490, 1925a: 188, 1925b: 40, 1931: 70–71; Stark 1928: 377–378, 1952: 397; Stierlin 1898: 443; Tsai & Li 1959: 98; Wachtl 1895: 7; Weber, L. 1912: 31; Yin, Huang, & Li 1984: 135. (**ms**) Byers 1984a; Chararas 1971a: 853; Escherich 1932b; Foltz, Corneil, & Reich 1985; Fuchs 1911b; Kobzar 1968b; Kozikowsky 1929: 254; Lieutier 1984a; Lieutier et al. 1986; Merino-Rodriguez 1966: 44; Michalski 1959a: 290–291; Mori-Igarashi 1988; Schimitschek 1955b: 102; Schwappach 1924: 58; Sedlaczek 1902: 126, 1913: 455; Stark 1958: 228; Vorontzov 1968; Weber, L. 1912: 31; Winogradoff 1911: 147.

pinastri Bechstein 1818: 93 (*Bostrichus*). Syntypes, sex?; Deutschland; not located. Synonymy: Eichhoff 1878b: 222.

References: (**cn**) Kollar 1840: 361. (**hb**) Feisthamel 1835; Kollar 1840: 361. (**ds**) Beck 1817; Chapuis & Candeze 1853; Sturm 1826: 102; Villa & Villa 1833: 26. (**tx**) Balachowsky 1949a: 263; Bechstein 1818: 74, 93, 184; Bechstein et al. 1805: 93; Chapuis & Candeze 1853; Eichhoff 1878b: 222; Schedl 1950a: 86. (**ms**) Hartig 1834: 108.

stenographus Duftschmidt 1825: 88 (*Bostrichus*). Syntypes, sex?; Austria; not located. Synonymy: Eichhoff 1878b: 221.

References: (**ay**) Leisewitz 1906: 95; Schwerdtfeger 1929: 404. (**cn**) Blanchere & Robert 1889; Grunert 1883; Guse 1885; Hartig 1861: 324, 1877: 190; Hess 1898: 350, 1907: 250; Kauschinger 1893: 141; Keller 1903b: 52; Kholodkovskii

1912: 278; Koppen 1882: 234; Malakhova 1963: 89–94; Muller 1891: 52; Nordlinger 1870b: 262; Pomocnicze 1876: 155; Ratzeburg 1871c: 81; Schacht 1853: 311; Schuster 1918: 102. (**ec**) Kholodkovskii 1897: 118; Knoche 1907b: 476, 1908b: 204; Perris 1852: 497, 1854a: 89, 1854b: 606, 1856a: 173, 1857: 357, 1862: 177; Ratzeburg 1869a: 88; Schuster 1918: 102; Schwerdtfeger 1929: 404; Tragardh 1927a: 216. (**hb**) Altum 1881c: 298; Bach 1864; Blanchere & Robert 1889; Budge 1949; Budkov 1897; Dombrowsky 1892; Eckstein 1889; Furst 1888: 112; Gigglberger 1868; Girard 1873; Hartig 1861: 324, 1877: 190; Henschel 1876a: 104, 238; Hess 1898: 350, 1907: 250; Holmgren 1867: 113, 133; Karsch 1883: 141; Kauschinger 1883: 103, 1893: 141; Kholodkovskii 1889: 270, 1912: 278; Knoche 1905: 357, 1907b: 476, 1907e: 52, 1908a: 44; Nordlinger 1856: 18, 1870b: 262; Pauly 1894: 379; Perris 1852: 497, 1856a: 173; Ratzeburg 1837: 133, 153, 1839: 159, 186, 1871c: 81; Rodd 1897: 34; Schwerdtfeger 1929: 404; Taschenberg 1880: 220. (**ds**) Andersch 1851; Blanchere & Robert 1889; Brancsik 1871; Budkov 1897; Calwer 1884, 1893; Chapuis & Candeze 1853; Dejean 1821, 1825, 1837; Duftschmidt 1825; Eyquem 1891; Favre 1890; Forster 1849: 439; Gaubil 1849: 126; Gobang 1855: 745; Gozis 1875: 80; Gredler 1866: 374; Greyerz 1851; Heyden 1876: 300; Holmgren 1867: 113, 132; Kaltenbach 1874: 685; Kestercanek 1881a: 12; Koppen 1882: 234; Kotula 1873b: 80; Kraatz 1869: 59; Krol 1877: 34; Lacordaire 1866: 383; Lentz 1857: 139; Liegel 1886: 43; Lindemann 1884b: 264; Lokaj 1868: 64; Matthews & Fowler 1883: 42; Pacher 1865: 152; Perris 1876a: 254, 1877a: 414; Pfeffer 1950b: 73; Poppius 1900: 108; Ratzeburg 1837: 133, 153, 1839: 159, 186; Redtenbacher 1858: 834; Reitter 1869b: 154; Rye 1874: 205; Sahlberg 1900: 105; Schaschl 1854: 133; Schaum 1859: 96, 1862: 101; Schilsky 1909: 188; Schiodte 1873: 102; Schreiner 1897: 369; Seidlitz 1872: 395; Sharp & Fowler 1893: 34; Siebke 1875: 284; Stein 1868: 114; Stein & Weise 1877: 164; Stierlin & Gautard 1871: 293; Strauch 1861: 122; Sturm 1843: 230; Thomson 1865: 262, 1868: 222; Wachtl 1870: 259. (**tx**) Bach 1854, 1864; Balachowsky 1949: 263; Bertolini 1872; Blanchere & Robert 1889; Brancsik 1871; Calwer 1858; Chapuis & Candeze 1853; Dejean 1821, 1825; Dombrowsky 1892; Duftschmidt 1825: 88; Eichhoff 1864b: 42, 1877a: 386; Escherich & Escherich 1897; Ferrari 1867a: 42, 1867b: 114; Girard 1873; Henry 1892: 10–11; Henschel 1876a: 104, 238; Hopkins 1914: 119; Jacquelin du Val & Fairmaire 1868: 107; Lacordaire 1866: 383; Letzner 1858: 1, 1891: 376; Leunis 1886: 180; Motschulsky 1860a: 155; Nordlinger 1848: 235, 1856: 18; Perris 1877a: 414; Prell 1929: 90; Ratzeburg 1837: 133, 153, 1839: 159, 186; Redtenbacher 1849a: 357, 1849b: 26, 1858: 834; Saalas 1914: 89; Schedl 1934f: 1645, 1950a: 86; Seidlitz 1872: 395; Spessivtsev 1913: 72–74, 1922: 482; Taschenberg 1880: 220; Thomson 1865: 262, 1868: 222. (**ms**) Gotz 1877; Hartig 1834: 108.

sexdentatus junnanicus Sokanovskii 1959b: 94–95. Syntypes, sex?; Yunnan, China; Sokanovskii Collection.

References: (**tx**) Sokanovskii 1959b: 94–95.

***spinifer* (Eichhoff)** 1878b: 499 (*Tomicus*). Holotype, sex?; California [USA]; Hamburg Museum, lost.

Figures: Hopping 1963b: 65, 67.

Distribution: North America (California in USA).

Hosts: *Pinus sabiniana*.

References: (**cn**) Hrubik 1973. (**ec**) Furniss, R. L. & Carolin 1977: 387. (**hb**) Furniss, R. L. & Carolin 1977: 387; Wood, S. L. 1982b: 677. (**ds**) Furniss, R. L. & Carolin 1977: 387; Hagedorn 1910d: 59; Kleine 1913b: 128, 1914b: 390; Leng 1920: 341; Swaine 1909: 126; Wood, S. L. 1982b: 677. (**tx**) Eichhoff 1878a: 390, 1878b: 499; Hagedorn 1910a: 106; Swaine 1909: 126, 1918: 114; Wood, S. L. 1973c: 177, 1982b: 677.

sabinianae Hopping 1963b: 64 (*Orthotomicus*). Holotype ♂; Middletown, Lake Co., California [USA]; CAS, San Francisco. Synonymy: Wood 1973c: 177.

References: (**bv**) Barr, B. A. 1969: 642; Jacobson 1972. (**ec**) Berryman 1966a: 519; Hirschmann & Wisniewski 1982, 1983; Kinn 1971; Lindquist 1969c. (**hb**) Bright & Stark 1973: 83. (**ds**) Bright & Stark 1973: 83. (**tx**) Hopping, G. 1963b: 64–68; de Ruette 1970: 105; Wood, S. L. 1966b: 24, 1973c: 177.

***stebbingi* Strohmeyer** 1908: 69. Syntypes ♂; Himalaya occidentalis (Kulu); IPKE, Eberswalde.

Figures: Yin & Huang 1981: 563.

Distribution: Asia (Bhutan/ Xizang [Tibet] in China/ Himachal Pradesh, Kashmir, Punjab, Uttar Pradesh in India/ Nepal/ Pakistan).

Hosts: *Pinus excelsa, P. gerardiana P. griffithii*, rare in *Abies webbiana, Cedrus deodara, Picea morinda*.

References: (**ay**) Schmutzenhofer 1988. (**cn**) Schmutzenhofer 1988; Stebbing 1903a: 225, 1914: 562. (**ec**) Stebbing 1914: 562; Vitzthum 1921a: 58; Woodring & Moser 1970. (**hb**) Beeson 1922c: 496; Stebbing 1903a: 225, 1914: 562. (**ds**) Hagedorn 1910d: 59; Kleine 1913b: 128, 1914b: 271, 277; Pierce, W. D. 1917: 52; Schedl 1973d: 210; Schmutzenhofer 1988; Stebbing 1903a: 225. (**tx**) Eggers 1922d: 120; Hagedorn 1910a: 106; Holzschuh 1988: 481–485; Schmutzenhofer 1988; Stebbing 1914: 562; Strohmeyer 1908b: 69.

ribbentropi Stebbing 1909b: 25 (*Tomicus*). Syntypes, sex?; Jaunsar, Tehri Garhwas, Simla,

Bashahr, and Chamba States in North-West Himalaya Forests, India; FRI, Dehra Dun. Synonymy: Beeson 1922c: 496.

References: (**cn**) Beeson 1922c: 496; Chatterjee 1917b: 1–4; Pierce, W. D. 1917: 69; Stebbing 1914: 552; Troup 1916: 1–126. (**ec**) Stebbing 1914: 552. (**hb**) Stebbing 1909b: 25, 1911a: 6, 1914: 552. (**ds**) Pierce, W. D. 1917: 69; Yin & Huang 1981: 563. (**tx**) Beeson 1922c: 496; Stebbing 1908b: 8, 1909b: 13, 25, 1914: 552; Yin & Huang 1981: 563.

blandfordi Stebbing 1909b: 27 (*Tomicus*). Syntypes 3 ♀; Shinghar, Chilgoza forests, North Zhob, Baluchistan, Pakistan; FRI, Dehra Dun. Synonymy: Wood 1988b: 189.

References: (**cn**) Pierce, W. D. 1917: 74; Stebbing 1914: 561. (**ec**) Stebbing 1914: 561. (**hb**) Beeson 1922c: 496; Stebbing 1909b: 15, 27, 1914: 561. (**ds**) Pierce, W. D. 1917: 74. (**tx**) Stebbing 1909b: 27, 1914: 561; Wood, S. L. 1988b: 189.

schmutzenhoferi Holzschuh 1988: 481. Holotype ♂; West-Bhutan, Chamgang, 3000 m; NHMW, Wien. Synonymy: Wood 1992a: 83.

References: (**cn**) Schmutzenhofer 1988. (**tx**) Holzschuh 1988: 481–485; Schmutzenhofer 1988; Wood, S. L. 1992a: 83.

***tridens* (Mannerheim)** 1852: 357 (*Bostrichus*). Lectotype ♀; Sitka Island, Alaska; MZU, Helsinki, designated by Wood 1982b: 684.

Notes: (1) Wood 1982b: 684 (subspecies established).

References: (**ay**) Hopping, G. 1964a: 117; Oester & Rudinsky 1975, 1979. (**bv**) Hopping, G. 1962b; Moeck et al. 1985; Oester & Rudinsky 1975, 1979. (**cn**) Chamberlin 1924; Doane et al. 1936; Holsten, Werner, & Laurent 1980; Keen 1952c: 165; Kondo & Moody 1987: 107; Lindgren 1980a: 66; Moody 1988: 82; Ruppel 1967: 54; Schuder 1969: 76; Smith, G. J. & Melvin 1974a; Swaine 1918a: 111, 119. (**ec**) Furniss, R. L. & Carolin 1977: 393; Werner & Holsten 1984. (**hb**) Annila 1971: 11; Annila et al. 1972: 22; Bakke 1968b: 647; Bright 1976d: 163; Bright & Stark 1973: 94; Chamberlin 1939: 431, 1958: 174; Doane et al. 1936; Furniss, R. L. & Carolin 1977: 393; Holsten, Werner, & Laurent 1980; Hopping, G. 1962a, 1964a: 117, 1965d: 168; Keen 1952c: 165; Lindgren 1980a: 66; Moeck et al. 1985; Swaine 1918a: 111, 119; Wood, S. L. 1982b: 684. (**ds**) Bright 1976d: 163; Bright & Stark 1973: 94; Chamberlin 1939: 431, 1958: 174; Choo, Woo, & Kim 1981: 201; Evans, D. 1983: 34; Furniss, R. L. & Carolin 1977: 393; Gautreau 1974: 6; Gemminger & Harold 1872: 2691; Hagedorn 1910d: 60; Hamilton 1894a: 35–36; Henshaw 1885: 148; Hopping, G. 1965d: 168; Hopping, R. 1922; Keen 1929a: 39, 1952c: 165; Kleine 1912a: 218, 1913b: 128, 1934a: 150; Kusch 1967; Leng 1920: 341; Patterson & Hatch 1945: 153; Ruppel 1967: 54; Schedl 1969a: 203; Schuder 1969: 76; Smith, G. J. & Melvin 1974a; Smith, G. S. 1930; Still, Tidsbury, & Melvin 1974a: 13; Swaine 1909: 124, 126; Werner & Holsten 1984; Wickham 1896a: 309; Wood, S. L. 1972a: 420, 1982b: 684. (**tx**) Bright 1976d: 154, 163; Chamberlin 1939: 431, 1958: 174; Eichhoff 1869a: 274, 1878b: 240–241; Evans, D. 1983: 34; Hagedorn 1910a: 106; Hopping, G. 1962b: 506, 1963a: 116, 1963c: 512, 1963f: 213, 1965d: 160, 163, 168; Hopping, R. 1939: 169; Keen 1929a: 39; Kusch 1967: 9; LeConte 1857: 22, 1868: 164, 1876: 363, 366, 1878: 240; Mannerheim 1852: 357, 1853: 273; Swaine 1909: 124, 126, 1915: 359, 1917: 30–31, 1918a: 111, 119; Wood, S. L. 1969c: 115, 1972a: 420, 1982b: 684. (**ms**) Hopping, G. 1961a: 1052.

tridens tridens:

Figures: Bright 1976d: 154, Hopping 1963f: 215, 1965d: 165, 167, Kusch 1967: 9.

Distribution: North America (Alaska/ British Columbia in Canada/ N California, Oregon, Washington in USA), only on the coastal margin.

Hosts: *Picea sitchensis*, uncommon in *P. glauca*.

References: (**tx**) Mannerheim 1852: 357; Wood, S. L. 1982b: 684.

interruptus Mannerheim 1852: 357 (*Bostrichus*). Lectotype ♀; Sitka Island, Alaska; MZU, Helsinki, designated by Wood 1982b: 684. Synonymy: Wood 1969c: 115.

References: (**ay**) Hopping, G. 1964a: 117. (**bv**) Hopping, G. 1962b. (**cn**) Chamberlin 1924; Doane et al. 1936; Hatch 1938: 194; Keen 1938: 128, 1952c: 165; Ruppel 1967: 54; Schuder 1969: 78; Swaine 1918a: 111, 118. (**ec**) Keen 1938: 128. (**hb**) Chamberlin 1939: 429, 1958: 174; Doane et al. 1936; Hopping, G. 1964a: 117; Keen 1938: 128, 1952c: 165; Swaine 1918a: 111, 118. (**ds**) Blatchley & Leng 1916: 639; Chamberlin 1917, 1925, 1939: 429, 1958: 174; Gautreau & Melvin 1974: 14; Gemminger & Harold 1872: 2690; Hagedorn 1910d: 55; Hamilton 1894a: 35; Henshaw 1885: 148; Hopping, G. 1965d: 160; Hopping, R. 1922; Hubbard & Schwarz 1878b: 643; Keen 1929a: 39, 1938: 128, 1952c: 165; Kleine 1912a: 218, 1913b: 128, 1914b: 397, 1934a: 150; Leng 1920: 341; Murayama 1957a: 37; Ruppel 1967: 54; Schedl 1969a: 203; Schuder 1969: 78; Swaine 1909: 124; VanDyke 1924: 26; Wickham 1896a: 309. (**tx**) Blatchley & Leng 1916: 639; Chamberlin 1939: 429, 1958: 174; Eichhoff 1869a: 274, 1878b: 238; Fall 1926: 208; Hagedorn 1910a: 105; Hopping, G. 1963c: 514, 1965d: 160–161; Keen 1929a: 39; LeConte 1857: 22, 1868: 164, 1876: 366; Mannerheim 1852: 357, 1853: 234; Swaine 1909: 124, 1918a:

111, 118; Wood, S. L. 1969c: 115, 1982b: 684. (**ms**) Hatch 1938: 194.

***tridens engelmanni* Swaine** 1917: 30. Lectotype ♀; Rogers Pass, British Columbia [Canada]; CNCI, Ottawa, designated by Bright 1967b: 675.

Figures: Hopping 1965d: 163, figs. 10–11, Kusch 1967: 9.

Distribution: North America (Alaska/ Alberta, British Columbia, Northwest Territories, Yukon in Canada/ N California, N Idaho, Montana, Oregon, Washington, NW Wyoming in USA), occurs inland away from the coast.

Hosts: *Picea engelmannii, P. glauca, P. sitchensis*.

Notes: (1) Wood 1982b: 684 (reduced to subspecies).

References: (**ay**) Hopping, G. 1964a: 117. (**cn**) Keen 1938: 128, 1952c: 165; Swaine 1918a: 111, 120. (**ec**) Keen 1938: 128; Lindquist 1969c. (**hb**) Chamberlin 1939: 431; Furniss et al. 1979: 1357; Hopping, G. 1961b, 1964a: 117; Keen 1938: 128, 1952c: 165; Swaine 1918a: 111, 120; Wood, S. L. 1982b: 684. (**ds**) Chamberlin 1925, 1939: 431; Gast et al. 1989: 385; Hopping, G. 1965d: 162; Hopping, R. 1922; Keen 1929a: 39, 1938: 128, 1952c: 165; Kleine 1934a: 150; Leng 1920: 341; Patterson & Hatch 1945: 153; Wood, S. L. 1957c: 397, 1982b: 684. (**tx**) Bright 1967b: 675; Chamberlin 1939: 431, 1958: 174; Hopping, G. 1963c: 514, 1963f: 213, 1965d: 161, 162; Hopping, R. 1939; Keen 1929a: 39; Kusch 1967: 9; Swaine 1917: 30, 1918a: 111, 120; Wood, S. L. 1957c: 397, 1977c: 386, 1982b: 684. (**ms**) Hopping, G. 1961b.

yohoensis Swaine 1917: 31. Lectotype, ♀; Yoho Valley, British Columbia [Canada]; CNCI, Ottawa, designated by Bright 1967b: 676. Synonymy: Wood 1977c: 386.

References: (**ay**) Hopping, G. 1964a: 117. (**cn**) Keen 1938: 128; Smith, G. J. & Melvin 1974a, 1974b; Swaine 1918a: 111, 120. (**ec**) Keen 1938: 128. (**hb**) Chamberlin 1939: 431, 1958: 175; Hopping, G. 1961b, 1964a: 117; Keen 1938: 128; Swaine 1918a: 111, 120. (**ds**) Chamberlin 1925, 1939: 431, 1958: 175; Hopping, G. 1965d: 168; Hopping, R. 1922; Keen 1929a: 39, 1938: 128; Kleine 1934a: 151; Kusch 1967; Leng 1920: 341; Smith, G. J. & Melvin 1974a, 1974b; Still, Tidsbury, & Melvin 1974a: 13; Susut & Melvin 1974. (**tx**) Bright 1967b: 676; Chamberlin 1939: 431, 1958: 175; Hoebeke 1978; Hopping, G. 1961b: 1052, 1963c: 514, 1963f: 213, 1965d: 161, 168; Hopping, R. 1939: 169; Keen 1929a: 39; Kusch 1967: 9; de Ruette 1970: 104; Swaine 1917: 31, 1918a: 111, 120; Wood, S. L. 1977c: 386.

dubius Swaine 1918a: 119. Holotype ♂; Rogers Pass, British Columbia [Canada]; CNCI, Ottawa. Synonymy: Wood 1957c: 397.

References: (**cn**) Keen 1938: 128, 1952c: 165; Schuder 1969: 76; Swaine 1918a: 111, 119. (**ec**) Keen 1938: 128. (**hb**) Chamberlin 1939: 430; Keen 1938: 128, 1952c: 165; Swaine 1918a: 111, 119. (**ds**) Chamberlin 1925, 1939: 430; Hopping, R. 1922; Keen 1929a: 39, 1938: 128, 1952c: 165; Kleine 1934a: 150; Leng 1920: 341; Schuder 1969: 76. (**tx**) Bright 1967b: 675; Chamberlin 1939: 430; Hoebeke 1978; Keen 1929a: 39; de Ruette 1970: 102; Swaine 1918a: 111, 119; Wood, S. L. 1957c: 397.

semirostris Hopping, G. 1963f: 213. Holotype ♀; Kenai Peninsula, Alaska; CNCI, Ottawa. Synonymy: Wood 1977c: 386.

References: (**ay**) Hopping, G. 1964a: 117. (**cn**) Beckwith 1972; Smith, G. J. & Melvin 1974b. (**hb**) Hopping, G. 1964a: 117. (**ds**) Beckwith 1972a; Hopping, G. 1965d: 170; Kusch 1967; Smith, G. J. & Melvin 1974b; Still, Tidsbury, & Melvin 1974a: 13. (**tx**) Beckwith 1972, 1976a; Hopping, G. 1963b: 65, 67, 1963f: 213, 215, 1965d: 170; Kusch 1967: 9; de Ruette 1970: 103; Wood, S. L. 1977c: 386.

amiskwiensis Hopping, G. 1963f: 216. Holotype ♀; Amiskwi River, Yoho Nat. Pk., British Columbia [Canada]; CNCI, Ottawa. Synonymy: Wood 1977c: 386.

References: (**ay**) Hopping, G. 1964a: 117; Thomas, J. B. 1967. (**cn**) Beckwith 1972; Smith, G. J. & Melvin 1974a, 1974b. (**hb**) Hopping, G. 1964a: 117. (**ds**) Beckwith 1972a; Bright 1964a: 170; Evans, D., Lowe, & Hunt 1978; Gautreau 1974: 5; Kusch 1967; Smith, G. J. & Melvin 1974a, 1974b; Still, Tidsbury, & Melvin 1974a: 13. (**tx**) Beckwith 1972a; Hopping 1963b: 215, 1963f: 215–217, 1965d: 160–166; Kusch 1967: 9; de Ruette 1970: 102; Thomas, J. B. 1967; Wood, S. L. 1977c: 386.

***typographus* (Linnaeus)** 1758: 355 (*Dermestes*). Syntypes, sex?; Europa; not located.

Figures: Bakke 1960: 306, Balachowsky 1949a: 9, 16, 264, Barbey 1925: 61, Brandt 1960:pl. 28, Chararas 1961c: 95, Duffy 1953: 11, Grune 1979: 148, Nobuchi 1974:pls. 2–3, Pfeffer 1989a:pls. 1, 10, 14, Postner 1974: 453, Schwerdtfeger 1981: 191, Tsai & Li 1959: 101.

Distribution: Africa (Algeria), Asia (Heilongjiang, Jilin in China/ Japan/ Korea/ Kuril Islands/ Turkey/ Kamchatka, Sakhalin Island, Siberia in E USSR), Europe (Austria/ Bulgaria/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Hungary/ Italy/ Luxemburg/ Norway/ Poland/ Portugal/ Romania/ Sardinia/ Sweden/ Switzerland/ W USSR/ Yugoslavia).

Hosts: *Picea* spp., rare in *Pinus* spp., *Larix* sp.

References: (**ay**) Anderbrandt 1988b; Beal 1927; Berlese 1909; Bombosch 1952; Chararas 1956a: 113–213, 1956c, 1977b; Chararas, Courtois, & Debris 1961; Chararas & Koutroumpas 1977;

Chararas et al. 1963: 383–395; Courtois, Chararas, & Debris 1961b; Courtois et al. 1965; Crowson 1938; Dicken 1981; Doganlar 1984; Escherich 1914: 113, 170, 311, 1923b: 429, 485, 575; Feytaud 1950a; Francke-Grosmann 1959; Fuchs 1911a; Gries 1985; Hallberg 1982a, 1982b, 1984; Hansen, T. E., Viik, & Luik 1980a, 1980b; Hennequy 1804: 175; Imhoff 1856: 228; Koizumi & Yamaguchi 1967; Kuhn 1949a: 245; Leisewitz 1906: 95; Lekander 1959b: 50, 1959d: 91; Leufven, Bergstrom, & Falsen 1984; Marcus 1930: 644; Merker & Wild 1954: 451; Moeler-Racke 1952: 247, 259; Mustaparta et al. 1984; Negru 1968b: 802; Novak, V. et al. 1976; Nunberg 1928a: 141, 1950a: 138; Nusslin 1911a: 61, 150, 155, 254, 338; Reichenbach-Klinke 1952: 462, 1953: 338; Robertson 1961; Rudinsky 1979b; Scherb 1971; Schevyrew 1889a: 21; Schneider-Orelli 1913: 32, 1947: 3, 510–542; Schoenischen 1921: 47; Schonherr 1958: 227–228, 1970b; Schroder 1901: 461, 1902: 85; Schwerdtfeger 1929: 336; Sedlaczek 1902b: 244, 1907: 82; Skirkevicius et al. 1984; Tommeras 1985; Tommeras, Mustaparta, & Gregoire 1984; Vogel 1986, 1988; Wichmann 1912a: 10; Zoch 1965; Zumr, Nemec, & Stary 1985; Zumr & Soldan 1981. (**bv**) Abgrall 1986; Adlung 1958, 1960: 430, 1979; Adlung, Schicke, & O'Svath 1986; Anderbrandt 1985; Anderbrandt & Schlyter 1989; Anderbrandt, Schlyter, & Birgersson 1985; Anderbrandt, Schlyter, & Lofqvist 1988a, 1988b; Annila 1971a: 11, 1975: 8; Annila & Petaisto 1978; Anonymous 1973d, 1974u, 1977s; Arefjev 1970, 1974; Austara 1978; Austara, Bakke, & Midtgaard 1984, 1986; Austara & Pettersen 1977; Bakke 1969: 309–310, 1970b, 1971b, 1973, 1976, 1977, 1979c, 1981a, 1981c, 1981d, 1982, 1987; Bakke & Austara 1973, 1978; Bakke, Austara, & Pettersen 1977; Bakke & Riege 1982; Bakke & Saether 1978; Bakke, Saether, & Austara 1989; Bakke & Vite 1987; Balazy 1968; Becker, P. & O'svath 1981; Bengtsson 1975a; Berryman 1988; Bicevskis & Ozols 1981; Birgersson 1989; Birgersson & Bergstrom 1989; Birgersson & Leufven 1988; Birgersson et al. 1984, 1988; Bombosch 1978, 1983, 1987, 1988; Bombosch & Johann 1985; Bombosch, Johann, & Ramisch 1982; Bombosch et al. 1985; Borden 1968; Borsodi, Gal, & Kiss 1985; Butovitsch 1971; Byers 1983b, 1984b, 1989a, 1989b; Byers, Anderbrandt, & Lofqvist 1989; Chararas 1962f, 1976b, 1977b, 1980a, 1982; Chararas & Deschamps 1962; Chararas, Desveaux, & Kogane-Charles 1960: 921; Chararas et al. 1982: 1094; Christiansen 1981, 1985; Christiansen & Bakke 1988, 1989; Christiansen & Huse 1980; Dickens 1978, 1981; Du 1987; Dubbel et al. 1985; Duelli, Studer, & Naf 1986; Egger, A. & Ferenczy 1980, 1981; Ehnstrom 1975; Eidmann 1965b, 1983, 1987; Eidmann et al. 1986, 1987; Ellefsen 1980e, 1981; Furniss, M. M. & Livingston 1979; Gal et al. 1985; Gavelis & Jakaitis 1981, 1987; Gries 1985; Gries et al. 1989; Grijpma & Schuring 1984; Grune 1979: 149; Haggstrom 1976; Hallgren, Lekander, & Lonner 1972; Hansen, K. 1983; Harding & Ravn 1985; Helland, Hoff, & Anderbrant 1984; Heuer & Vite 1984a; Hierholzer 1951b; Hilker 1984; Horntvedt & Christianssen 1979; Inscoe 1982; Ivanchenko et al. 1979; Jacobson 1972; Jahn 1981, 1982; Jakaitis & Gavelis 1984; Johann 1986, 1986b: 115; Johnson 1960a: 17; Jotland 1975a, 1975b; Karlsen, Froyen, & Skattebol 1976; Kevdina 1897: 108; Klassen, Ridgway, & Inscoe 1982; Klimetzek & Adlung 1977; Klimetzek & Franke 1980; Klimetzek & Kopp 1983; Klimetzek et al. 1979, 1986: 270; Kohnle et al. 1988; Konig, E., Vite, & Bogenschutz 1981; Krawielitzki et al. 1977; Krol & Bakke 1985, 1988; Kuchava 1976; Lanne et al. 1989; Lebedeva, Vasilyeva, & Scherbakova 1975; Leluan, Leluan, & Chararas 1987; Leufven & Birgersson 1987; Leufven et al. 1984; Lie & Bakke 1981; Lindmo 1973; Lindstrom et al. 1989; Luitjes 1976; Madziara-Borusiewicz & Strzelecka 1977; Magema, Gaspar, & Severin 1982; Maksymov 1980; Maksymov, Jansen, & Jaggi 1982; Martinek 1957b: 281; McGregor & Miller 1989; Meixner 1937: 1214; Merker 1960, 1965a; Mihkelson & Ounap 1983; Miller, M. C. et al. 1989; Mozolevskaya, Lebedeva, & Galaseva 1979; Mulock & Christiansen 1986; Mustaparta et al. 1984; Naumann-Etienne 1978a; Nef 1989; Niemeyer 1985b; Niemeyer, Schroder, & Watzek 1983; Niemeyer & Watzek 1977; Novak, V. 1967, 1972a; Novak, V. & Svihra 1970; Nunberg 1950a: 138; Nuorteva 1956c: 23; Okstad 1979b; O'Sullivan 1979; Ozols, G. E. & Bicevskis 1971, 1976; Ozols, G. E., Bicevskis, & Galvans 1973; Prell 1925b: 166, 1926: 70, 1930c: 627, 1931: 364; Ravn 1985; Regnander 1975c, 1978; Regnander & Solbreck 1981; Richert & Kohnle 1984; Rozhkov 1970: 154; Rudinsky 1979a: 411, 1979b; Rudinsky, Novak, & Svihra 1970, 1971a, 1971b; Rudinsky & Vite 1956: 259; Sanders 1984; Sauerwein 1981; Schlyter 1984, 1988; Schlyter & Anderbrandt 1988: 409, 1989; Schlyter & Birgersson 1989; Schlyter, Birgersson, & Leufen 1989; Schlyter, Byers, & Lofqvist 1987; Schlyter & Lofqvist 1986; Schlyter et al. 1987, 1988; Schmutzenhofer 1985b; Schneider-Orelli 1947c: 89; Schopf 1985; Schwerdtfeger 1981: 191; Selander & Nuorteva 1980; Shepherd 1965: 213; Sherman et al. 1983; Silverstein & Young 1976: 21; Simionescu 1967a, 1967b, 1968, 1978; Skirkevicius et al. 1984; Smelyants & Vasechko 1973; Svihra 1972e, 1974b; Tischenko, Vasilyeva, & Lebedeva 1982; Tischenko et al. 1978; Tomescu et al. 1979, 1982; Tommeras 1989; Tommeras, Madsen, & Mustaparta 1989; Tommeras & Mustaparta 1984a, 1984b, 1987; Tommeras, Mustaparta, & Gregoire 1984; Uchida & Nakashima 1961; Valenta, Gavelis, & Jakaitis 1978, 1979; Vasechko 1971a, 1971b, 1978a, 1978b;

Vasileva & Minor 1975; Vasileva et al. 1976; Vaupel & Dubbel 1985; Vaupel, Dimitri, & Vite 1981; Vite 1980; Vite, Bakke, & Renwick 1972: 1971; Vite & Gara 1961: 175; Weslien 1984; Weslien & Bylund 1988; Wichmann 1912a: 10, 1953a: 107, 1967; Winter, K. 1980; Worrell 1983b; Yoshida et al. 1986; Zolubus 1987; Zotova 1987; Zumr 1981, 1982e, 1983a; Zumr & Landa 1985. (**cn**) Aalde 1979; Abgrall 1986; Abgrall & Schvester 1987; Acloque 1914; Adam 1970; Adlung 1960: 430–435, 1979; Adlung, Schicke, & O'Svath 1986; Akselsen 1979; Alexandrov 1958; An 1979; Androic 1966: 49; Annila 1969: 161–208; Anonymous 1874a: 380, 1874d, 1874g: 116, 1901b: 97, 1947j: 68, 1948k: 1, 1950e: 99, 1952g: 212, 1971p, 1972i, 1974i, 1974u, 1976j, 1977r, 1977t, 1978i, 1978m, 1979j, 1979k, 1979p, 1979t, 1979u, 1980b, 1980i, 1984b, 1985d, 1988i; Antoine 1935: 264; Arefjev 1974; Arnberg, Lekander, & Wastenson 1973; Ass & Funtikow 1941: 157–159; Austara 1972, 1975, 1978a, 1978b; Austara et al. 1983; Badoux 1918; Baisch 1954: 324; Bakke 1960a: 306, 1960b: 357, 1966, 1978b, 1979a, 1981b, 1981c, 1981d, 1985a, 1985b, 1987, 1988a, 1988b, 1989; Bakke & Riege 1982; Bakke & Saether 1978; Bakke, Saether, & Kvamme 1983; Bakke & Strand 1981; Balazy 1968; Bambulovic 1930: 446; Barbey 1914: 41–81, 1922b, 1925: 61; Barlow 1966; Barth 1878; Becker 1950; Becker, P. & O'Svath 1981; Bedel 1888b: 401, 417; Bedus 1946; Beeson 1918: 114–124; Bejer-Petersen 1959a, 1978, 1981; Bengtsson 1975a, 1975b; Berdennikova 1949; Bernhard 1875; Bernhard 1928: 413, 1929; Berryman 1987, 1988; Berryman & Stenseth 1989; Berryman, Stenseth, & Isaev 1987; Berwig 1950; Berwig & Schuhly 1964: 17–20; Bevan 1964b, 1987: 113; Birgersson & Leufven 1988; Bjorkhem et al. 1977; Blanchere & Robert 1889; Blondein 1874a, 1874b, 1875, 1876; Bohm 1932, 1947; Bombosch 1952: 675–678, 1954: 239, 1972, 1978, 1987, 1988a, 1988b; Bombosch, Johann, & Ramisch 1982; Borcea 1924: 221–260, 1930: 271; Borodajewsky 1930: 249–251, 805–811, 1931: 157–159; Brahms 1950; Brammanis 1960: 326; Browne, F. G. 1968b: 368; Browne, J. M. B. & Bevan 1966; Bruneau 1950; Brutovsky & Ulcakova 1982; Buchholz 1948, 1949; Butovitsch 1938: 1–36, 1939: 1922–1929, 1941a: 297–360, 1977; Butovitsch & Spaak 1939: 1–120; Buttiker 1948; Byers, Anderbrandt, & Lofqvist 1989; Caesar 1854; Capek 1966; Carron 1951; Chararas 1957e, 1958: 1653–1654, 1960a: 30, 1961b: 70, 1961c: 94, 1962f; Charvat 1951; Chorbadzhievo 1929; Christiansen 1970, 1981, 1985; Christiansen & Bakke 1988, 1989; Christiansen & Horntvedt 1983; Chrystal 1922, 1949b: 3–11; Cogho 1876a, 1876b; Cook & Hain 1988b; Corboud 1965; Courtois, Chararas, & Charitos 1960: 797; Crooke 1962a; Damjanovic 1955; Dammes 1857; Dedek & Pape 1988; Dedek et al. 1988; Delfin 1977, 1980; Demme 1947a, 1947b, 1948, 1949; Desfarges 1951; Deslarzes, Nedic, & Cherix 1987; Dimitri 1981, 1985; Dimitri et al. 1986; Dobrodejev 1924: 70–76; Doebner 1940: 90–91; Donaubauer, Eggers, & Ferenczy 1979; Dotterl 1923; Drenski 1930; Dubbel, Vaupel, & Dimitri 1985; Dubbel et al. 1985; Dudich 1946; Duelli, Studer, & Naf 1986; DuMerle 1988; Dzhambazishvili 1959: 709; Eckstein 1903, 1915, 1917, 1926: 572, 1935; Egger, A. 1987; Egger, A. & Ferenczy 1980, 1981; Ehnstrom 1985; Ehnstrom et al. 1974; Eickstedt 1949; Eidmann 1964, 1965c, 1970a, 1973, 1983, 1984, 1985a, 1987; Eidmann & Klingstrom 1976: 251; Ellefsen 1980a, 1980d; Elsner 1963: 97–103; Elton 1951; Elton & Voute 1950; Escherich 1914: 113, 170, 311, 1917: 97–115, 1923b: 429, 485, 575, 1932a, 1936; Esterberg 1959; Everaerts, Gregoire, & Merlin 1988; F. F. 1900: 15; Fang, Wang, & Chi 1985; Feytaud 1946, 1950a; Findlay 1959: 1–7; Finger 1829; Fischbach 1875; Flechtner 1948; Fleischer 1875c, 1877a; Florov 1949: 121; Foltany 1968: 153–155; Fomel & Quillenuse 1935: 335; Foslie 1980b; Fraenkel 1932: 145; Francke-Grosmann 1954a; Franz 1947a, 1947b, 1948a, 1948b, 1948c, 1948d: 2–8, 1948e, 1948f, 1948g: 38–48, 1949b, 1954; Frie 1954; Froggatt 1899; Frohlich 1927: 101, 1947; Funke 1870, 1875a; Furuta et al. 1985; Fystro & Bakke 1962; Gabler 1947a, 1949a, 1949c, 1955; Gail 1905; Galoux 1947: 12, 1948b, 1948c, 1948d: 61–71, 1948e; Gasste 1976; Gavelis & Jakaitis 1987; Gavelis, Jakaitis, & Valenta 1984; Georgescu et al. 1957: 357, 456; Georgijevic 1962: 107–195; Giric 1969: 44–45, 53–56; Girits 1963; Gmelin 1787a; Goldenstern 1950; Gonet 1948; Goryacheva & Andreeva 1961: 162–164; Gradojevic 1933: 789–790, 1938, 1940; Grandi 1951; Granit 1945; Gregor 1948a, 1948b; Gries et al. 1989; Grijpma & Schuring 1984; Gronnow 1948; Grosmann 1931b; Grossmann 1953; Grunert 1883; Grunnow 1948; Guiese et al. 1958; Guse 1878a, 1883, 1884, 1885, 1893; Gusev 1928: 144; Gyorfi 1946: 195, 1950: 384–400, 1954: 169–182, 1959; Hadorn 1948a; Haggstrom 1976; Hallgren, Lekander, & Lonner 1972; Hammer 1828; Hanson, H. S. 1940a, 1950, 1951; Hartig 1811: 320, 327, 1820: 320, 327, 1832: 280, 285, 1861: 325, 330, 1877: 192; Hartl & Mills 1983; Hasek 1961: 5; Heidenreich 1951; Helland, Anderbrandt, & Hoff 1989; Helland, Hoff, & Anderbrandt 1984; Hensler 1947; Heqvist 1965; Herlein 1878; Hess 1898: 332, 1907: 238; Hess & Beck 1914: 269, 1927: 325; Hierholzer 1951a, 1951b, 1954a: 329; Hirits 1963: 83–86; Hirschmann & Ruhn 1954a; Hoffmann 1950: 193, 1952a: 104; Hohenlohe-Langenburg 1949b: 13–15; Hopkins 1894c, 1894d, 1908c: 155; Hrubik 1973; Hufnagl 1949, 1951, 1952; Husson 1955: 535; Ihssen 1949, 1950; Inouye 1954: 167–180, 1955; Inouye & Nobuchi 1959: 35–42; Inouye & Yamaguchi 1955: 72–94, 1955a: 212, 235, 1959: 1,

27; Isaev, Khlebopros, & Nedorezov 1980: 194; Ishikura 1966; J. M. 1948: 460; Jablokoff 1953: 325; Jaensch 1938: 47; Jager 1985; Jahn 1952a: 98, 1952b: 149, 1959: 220, 1961: 7–13; Jahn & Sinreich 1959: 1; Jahrel 1829; Jakaitis & Gavelis 1985, 1987; Jamnicky 1953: 128–130, 166–170, 203–220, 1954: 14–17, 1956d; Janaczek 1922; Jansen 1979; Jaros 1949; Jemmett 1913: 1–44; Joly 1949b: 253,1976; Jondelius et al. 1973; Jotland 1975b; Judeich 1875b: 74, 1886: 63; Judeich & Nitsche 1895: 506; Juutinen 1960: 8; Kaisch 1884; Kakuliya 1967: 439–443; Kalab 1955: 27–31; Kalandra 1944, 1948a, 1948c, 1953a; Kamp 1950; Kangas 1939, 1958a: 195, 1958d: 164, 1966b; Karner & Kliefoth 1976; Karsch 1884: 50; Kataev 1968: 125; Kauschinger 1893: 131, 137; Kautsch 1921: 197, 1927: 165–167; Kazanskii 1928: 861–915; Keller 1903b: 46; Kellner 1880: 421, 1881: 368; Kemner 1913: 191–210; Keskinalemdar, Alkan, & Aksu 1987; Kholodkovskii 1912: 277, 311; Kilsbergarn 1980; King, C. J. 1979; Kirchner 1860: 91; Klauser 1954: 286; Kleiber 1930: 183; Kleiser 1859: 98; Klimesch 1923a: 165, 1923b: 130, 1924: 131, 1931: 40; Klimetzek 1978a, 1978b; Klopfer 1897: 31; Koberg 1969: 102–110; Kobzar 1968: 29–31; Koch 1906: 159, 1913: 111; Koehler 1958: 29; Kohnle 1984; Kohnle & Klimetzek 1984; Koizumi 1968: 110–116; Kollar 1840: 257, 357; Kolmodin 1915: 1–28, 217; Kolubajiv & Kalandra 1954: 27–44; Konig, E. 1950: 60, 1957: 99; Konig, E., Vite, & Bogenschutz 1981; Koning 1939: 2015; Kono & Tamanuki 1939: 88–96; Konopka 1871: 35; Kontkanen 1932: 59; Kopp 1949: 16; Koppen 1882: 233; Kosugi 1954: 146; Kovacevic 1924: 21–22, 1952: 64, 1957: 67; Kozikowsky 1929: 253; Krol 1980a; Krol & Bakke 1986: 437, 1988; Kruel 1950: 6; Kudela 1946b: 349; Kudler, Pivetz, & Jancarik 1956: 100–105; Kudler et al. 1956: 100; Kuhn 1949: 245–350, 1949b: 64; Kungle 1954: 473; Kurenzov 1935c: 187, 195; Kurir 1947a: 161, 1947b: 162, 1948a: 29; Laidlaw 1947: 52; Landmark 1981; Lantelme 1948: 242, 1950: 195; Lanz 1975; Lauenstein 1966; Laus 1947: 7; Leach et al. 1937: 337; Leiska 1973; Lekander 1951b: 9–22, 1952a: 679, 1952b: 5, 1954b: 12, 1955a: 135, 1955b: 18, 1966, 1974b; Lekander & Langstrom 1975; Lekander & Rennerfelt 1955: 15; Lekander, M. 1951: 54; Letzner 1855: 142; Leufven & Birgersson 1987; Lie & Bakke 1981; Lignitz 1875: 232; Lindelow 1984; Lindelow & Iacobaeus 1985; Lindelow & Weslien 1986; Lindgren 1980a: 66; Lindgren et al. 1983: 310; Lindmo 1973; Loeffler 1854: 172; Lohrenz 1907: 45; Lorber & Novak 1967: 60–64; Loyttyniemi et al. 1979; Lozovoi 1966: 1–90; Lozovoi & Tropin 1965, 1967; Lucas 1929: 501; Lugger 1899a; Luitjes 1957: 138; Lunden 1980; Madelin 1948: 460; Maksimovic & Boskovic 1962; Maksimovic & Milanovic 1964, 1966; Maksymov 1950: 554, 1968: 128–131, 1980; Maksymov, Jansen, & Jaggi 1982; Malenotti 1924: 1–60; Marcu 1926c: 67; Marie 1924: 328–330; Martinek 1952: 17–26, 1953a: 368, 1953b: 316, 1955: 125, 1956: 411–426, 1961, 1964, 1974; Mathiesen 1951: 205, 1952: 275; Mathiesen-Kaarik 1953: 6, 22; Matusevich & Maslov 1982; McFadden et al. 1982; McLaughlin 1971; Melnikova 1960: 19–45; Merker 1949a: 54, 1949b: 21, 1949c: 10, 1949d: 1, 1950b, 1952: 213–233, 1953: 138–144, 1955: 245, 1956a: 1–6, 1956b: 321, 1956d: 173, 1957: 1–140, 1958: 314, 1965: 1562–1570, 1967: 13–24, 1969; Merker & Adlung 1957: 122–123, 1958: 325–334; Merker & Muller 1951: 16–20; Merker & Sattler 1952: 135–143; Metelmann 1951: 17–19; Meves 1887: 31, 1896: 154; Micklitz 1875b: 29; Milan 1952: 171–175; Mills & Schlup 1989; Mills, Schlup, & Fischer 1984; Mokrzecki 1925c: 43, 1928: 273, 1933: 275–289; Mracek 1985; Mrkva 1960: 409–418; Muller 1891: 52, 1912: 186; Mulock & Christiansen 1986; Mumford 1960: 29, 1962: 27; Nagasawa et al. 1968: 46–54; Nakashima & Suzuki 1965: 527; Nauman-Etienne et al. 1977; Nechleba 1928: 125–126; Nef & Janssens 1986; Nestertschuk 1930: 172; Niemetz 1952: 263; Niemeyer 1974: 289, 1975: 151, 1976: 138, 1978, 1982, 1985a, 1985c; Niemeyer, Schroder, & Watzek 1983; Niemeyer & Thalenhorst 1974; Niemeyer & Watzek 1977, 1982; Nilssen 1978a; Nilsson, A. 1984; Nilsson, S. 1974a: 32; Nishiguchi 1956: 69–73, 1962b; Nordlinger 1870b: 261; Nosek 1951: 106, 1952b: 96; Novak, V. 1955: 355–374, 1959b: 64, 1967, 1971, 1972a; Novak, V. & Flek 1954: 288; Novak, V., Hrozinka, & Stary 1976: 37; Novak, V. & Srot 1977; Nuorteva 1955b: 195–196, 1955c: 1, 1957a: 352; Nusslin 1912a: 293, 1913: 204; Odening 1948: 363; Ohnesorge 1953: 437, 1955: 278; Okstad 1979a, 1979c, 1979d, 1979e; Olofsson 1980; Opperman 1985; O'Sullivan 1979; Otto 1979, 1985; Ow 1947: 178, 1948: 153, 1949: 50; Packard 1890: 23; Palm 1948b: 214; Pawlowitsch 1883: 10; Peklo 1946: 329; Persson 1980; Pfeffer 1932: 1–23, 1940c: 273, 1942: 447–462, 1946a: 55, 1947b: 148, 1948a: 799, 1949: 145–159, 1950c: 1, 1952a: 159, 1952b: 1, 1957: 196–207, 1959: 555–560; Pierce, W. D. 1917: 66; Platzer 1957: 16; Pomocnicze 1876: 159; Pompe 1877b: 383, 1883: 187; Popovic 1931: 57; Postner & Wellenstein 1954: 431; Prace 1967: 185–211; Pschorn-Walcher 1966; Quaschik 1953: 3; Ragnander & Solbreck 1981; Rakhov 1961: 207–213; Ratzeburg 1871c: 81; Ravn 1985; Reay 1969: 50; Reckmann 1949: 11, 256; Regnander 1957a, 1957c, 1976, 1977; Regula 1955: 120; Reichstadt 1936a: 196, 1936b: 92; Reisch 1960; Rhumbler 1927: 324; Richter 1965a: 339–344, 1965d: 49–54, 1967: 821–825, 1973; Richter & Kohnle 1984; Rieck 1949a: 90, 1949b: 104–112; Risberg 1985; Risberg & Regnander 1984; Rodary 1959: 849; Rode et al. 1984; Rodzianko 1915: 1–15; Roediger 1988; Ronfeld 1922: 249; Rosenfeld 1919: 29–37, 1926: 37; Roth 1948: 281; Rrossinagg

1979; Rudinsky 1960a, 1979a: 411, 1979c; Rudnev 1966; Ruhm 1958: 286; Ryle 1951: 179; Ryvkin 1951: 80–81; Saalas 1949: 344, 385; Sadovnikova 1980; Sajevyc 1928: 328; Sauerwein 1981; Sauerwein & Vite 1978; Sauvard, Lieutier, & Levieux 1988; Schacht 1853: 311; Schedl 1928: 110, 1936a: 522, 1938b: 317, 1951n: 1; Schennikov 1979; Schevyrew 1905b: 1108; Schimitschek 1931: 460–491, 1932a: 22, 1932c: 231, 1935a: 196, 1935b: 149, 1937c: 57, 1938a: 301, 1938b: 115, 1939b: 546, 1947g: 171, 189, 1948a, 1948b: 2, 1948c: 129–139, 1948d, 1948g: 16–26, 1949b: 159, 1949c: 14, 1950: 10, 1951e: 27, 1952a: 194, 1955a: 58, 62, 63, 1955b: 102, 1955c: 89, 1956: 340, 1957: 250–254, 1961a: 154; Schimitschek & Wienke 1966a, 1966b; Schindler 1948a: 247, 1969b: 136, 1969c: 1077–1078; Schlyter 1988; Schmidl 1875: 98; Schmidt 1881: 39; Schmutzenhofer 1976, 1985b; Schneeberg 1925: 495; Schneider-Orelli 1938: 289, 1948a: 76, 1948b: 72; Schneider-Orelli & Kuhn 1948: 511; Schneider-Orelli & Maksymov 1949: 171; Schollmayer-Lichtenberg 1923: 353; Schonwiese 1937: 53, 1949: 185; Schulz 1873: 170; Schulze-Henne 1958: 359; Schuster 1918: 102; Schwappach 1904: 79; Schwappach et al. 1929: 186; Schwarz 1938b: 144, 1938c: 288; Schwerdtfeger 1944a: 170, 179, 1946a: 37, 1946b: 62, 1948b: 134, 1948c: 57–61, 1948d, 1948f: 152, 1949c: 382, 1950a: 61, 1950b: 60, 1954: 278, 1955b: 1, 1956a: 36, 1957a: 185, 1966: 243–244; Sedlaczek 1921: 335, 1933: 307, 1936: 200; Seitner 1923c: 270; Selander & Nuorteva 1980; Sember 1929: 666; Severin 1902a: 81; Shavliashvili & Zharkov 1985; Shestakov 1927: 536–538; Shiraki 1952; Shirskaya 1961; Shishov 1928b: 673–676; Shkarednyi 1981; Siemaszko 1939: 1–54; Sierpinski 1954: 85–90, 1958: 68; Simionescu 1967a: 466, 1968: 22–26, 1970: 126–133; Sinreich 1958: 197, 1961: 165, 1962; Sitowski 1930: 1–13; Slander 1947c: 19, 1948: 4, 1953: 51, 1958: 150–158; Smeljanez 1969: 33–37; Soyka 1936: 133; Spaic 1955: 454, 1956: 88; Spiecker 1948: 233; Sponeck 1817: 316; Springer 1936: 201–202, 1936b: 178; Stebbing 1903: 229; Strobl 1947: 160, 1948: 58, 1948a: 5; Strohmeyer 1950: 21; Svihra 1968a: 104–107, 1968b: 363–374, 1970b, 1972a, 1972b, 1972c, 1972d, 1972f, 1973a, 1973b, 1974a,1974b, 1974c, 1974d, 1976b; Svihra & Rudinsky 1970; Szmidt 1960: 83; Tamanuki 1940: 261–263; Templin 1973: 104; Thalenhorst 1947: 65–67, 1948c: 23–25, 288, 1949a: 68, 1949c: 40, 1949d: 262–267, 1953: 16, 1955: 576; Thaler 1902: 277; Thielmann 1949: 256; Thurmer 1885: 389; Titova 1966; Tomic 1957: 207–210; Torrent & Romanyk 1967: 81, 1968; Tragardh 1917: 28, 1918c: 102, 1919: 154–174, 1920: 1–6, 1924: 311–338, 1927c: 79, 1936a: 145, 1938a: 12, 1941: 120; Tragardh & Butovitsch 1936: 555, 1937: 292, 1938: 192; Trauboth 1985; Trebra 1783: 78; Trofimov 1979; Troitskii 1968: 40–43; Tubeuf 1933: 193–242; Tullgren 1916: 104; Uchida & Nakashima 1961: 150–168; Ulrich 1951b: 234, 1954a: 179, 1954b: 491; Vajda 1949: 271; Vappula 1965: 153; Vasechko 1964; Vassiliev 1913: 1–99; Vaupel 1986; Vaupel, Dimitri, & Vite 1981; Vaupel & Dubbel 1985; Viebig 1948: 175; Villasenor 1966; Vite 1950: 121, 1956: 59, 1961, 1965b: 438–439, 1984a, 1989; Vorontzov 1968; Voute 1950b: 1, 1960: 946; Wachtl 1883b: 319, 1901: 379, 381; Wagner 1950: 274, 1954a: 95, 1954b: 227, 1954c: 167, 1954d: 191; Wahl & Muller 1931: 1–70; Walker, C. & King 1974; Wardle 1929: 322; Weber, H. 1926: 574; Weiser 1954: 217–224, 1963b; Weiss 1922: 71; Welander 1916: 521; Wellenstein 1942: 337–347, 1951a: 1, 1952a: 688, 1952b: 39, 1954: 11; Weslien 1966; Weslien & Byland 1989; Weslien & Lindelow 1989; Weslien et al. 1989; Westerboer & Bernard 1963: 530; Whistling 1949: 224; Wichmann 1927b: 350; Wilczok 1975; Wilke 1931: 583, 620–657; Witzall 1949: 6; Wolff & Krausse 1922: 99; Wolfle 1948a: 56, 1948b: 259, 1949: 479, 1951: 169; Worrell 1983b; Yanagisawa 1952: 103–116; Yogo 1958: 143–146; Yoshida et al. 1986; Zehnder 1948: 286; Zhuravlev & Osmolovskii 1949: 52; Zieger 1948a: 376, 1950a: 89, 91, 1950b: 35, 1953: 317; Zinovjev 1958: 379–393; Zolk 1935: 258–294; Zumr 1981, 1982e, 1987b; Zumr & Landa 1985; Zwolfer 1949: 399, 1960, 1962, 1963. (**ec**) Aichele 1949; Alexandrov 1958; Alfken 1924; An 1979; Anderbrandt 1986, 1988c; Anderbrandt & Schlyter 1989; Anderbrandt, Schlyter, & Birgersson 1985; Andreev 1988; Annila 1969, 1971: 12, 1975: 11, 1977; Annila & Perttunen 1964: 42; Annila & Petaisto 1978; Antoine 1935: 264; Apfelbeck 1916b: 429–439; Arambourg 1964: 115; Arefjev 1974; Arnoldi et al. 1955: 722; Ass & Funtikow 1941; Aubert 1947: 80; Austara, Pettersen, & Bakke 1977; Austara et al. 1983; Badoux 1918; Baisch 1954: 324; Bakke 1956a: 40–42, 1960: 307, 1979a, 1983b; Bakke & Austara 1973, 1978; Bakke, Austara, & Pettersen 1977; Bakke & Kvamme 1978, 1981; Bakke & Pettersen 1977; Balazy 1962, 1965a, 1965b: 303–331, 1968: 657–687; Balazy & Kielczewski 1965: 7–18; Balazy & Michalski 1960, 1962b, 1964a; Balazy et al. 1964: 17, 1967: 201–205, 1977; Baltensweiler 1985; Barbey 1927; Batra 1963a; Bedus 1946; Belanowskii 1930; Bender 1948; Beran 1933, 1936; Berryman 1987, 1988; Berwig & Schuhly 1964; Biermann 1977; Birgersson 1989; Boas 1901; Bombosch 1954: 239; Boucek 1958; Boucek et al. 1953: 145–158; Bovery 1970; Brammanis 1938, 1940: 257–340; Brauns 1940: 257–340, 1950a; Brehm 1829; Butovitsch 1939, 1941, 1971, 1977; Buttner 1956; Byers 1989; Callaham & Shifrine 1960: 146; Carpelan 1944; Chararas 1956b, 1957a, 1957d, 1958b, 1958c, 1959a, 1959b: 1407–1410, 1959c: 113–129, 1959d: 135–167, 1959e, 1959g: 214–233, 1960b: 30, 1960c: 82–96, 1961: 49–109, 1962f; Chararas et al. 1982: 1094; Christiansen 1985, 1988: 439; Christiansen

& Bakke 1988, 1989; Christiansen & Horntvedt 1983; Christiansen & Huse 1980; Cooreman 1963: 46; Courtois, Chararas, & Debris 1961a: 2608–2609; Davidson 1958; Davidson, Franke-Grosmann, & Kaarik 1967; de Jong & Grijpma 1986; de Jong & Sabelis 1988; DeLeon 1935a, 1935c; Eck 1978; Ehnstrom 1963a; Eidmann 1965c, 1974b; Elliot & Morley 1907; Escherich 1942: 621, 651, 656; Felix, Uhrenholdt, & Parmeter 1971: 1697; Filipascu 1960; Finger 1829; Fleischer 1875c, 1877a; Forsse 1987; Forsslund 1941; Francke-Grosmann 1931, 1959, 1967: 928–932; Frickhinger 1921; Fry 1989: 17; Fuchs 1914a, 1914b: 688–692, 1929a, 1937, 1938; Fuhrer 1985; Furniss, M. M. 1968: 1384–1389; Furniss, M. M. & Livingston 1979: 370; Furniss, M. M., Solheim, & Christiansen 1988: 430; Gabler 1947b: 113–115, 1953a: 55–62; Gahan 1938; Gal et al. 1985; Galoux 1947b, 1947c, 1947d, 1948a; Gauss 1954a: 423; Gauss & Wellenstein 1950; Gavelis, Jakaitis, & Valenta 1984; Gavelis & Valenta 1976; Georgijevic 1962; Geschwind 1918: 387–395; Giraud 1872; Giraud & Laboulbene 1877: 414, 427–428; Giric 1963; Graham, M. W. R. 1969: 880; Graham, S. A. 1920, 1921; Gries & Sanders 1984b; Grossmann 1930: 56–102, 1931a; Grunwald 1986; Guillaume 1950; Guse 1883; Gyorfi 1941b, 1943: 84, 1952b, 1962; Haarlov & Bejer-Petersen 1952; Hadorn 1948a; Haeselbarth 1967; Hammer 1826; Hansen, K. 1983; Hansen, T. E., Viik, & Luik 1980a, 1980b; Harding & Ravn 1985; Hartig 1832: 280, 285; Hartl & Mills 1983; Hase 1948; Heliovaara & Lilja 1989; Henningsson & Lundstrom 1974; Henze 1943; Heqvist 1955b, 1957a, 1957b: 42, 1963: 155, 1965: 23; Heuer & Vite 1984a; Hierholzer 1954a: 329; Hirschmann 1960, 1971a, 1971b; Hirschmann & Ruhm 1953, 1954b, 1983; Hirschmann & Wisniewski 1982, 1983; Hirschmann & Zirngiebl-Nicol 1961; Holst 1937; Horntvedt 1983, 1988; Hubault 1923a; Ighii 1939: 191; Ilmnadze 1978; Inouye 1954: 168; Inouye & Nobuchi 1959b: 38, 41; Inouye & Yamaguchi 1955a: 212, 235, 1955b; Inouye et al. 1955: 68; Jahn & Sinreich 1960a: 119; Jakaitis 1979a: 145; Jakaitis & Valenta 1979; Jamnicky 1953, 1954, 1957b: 13, 18, 1957c, 1961b: 271; Johnson, Wright, & Orr 1961: 3; Joly 1949a: 7; Jong & Grijpma 1986: 121; Kakuliya 1971; Kalandra 1948: 33–38, 1960, 1962; Kangas 1939, 1946b: 21, 1954a: 48, 1954b, 1958a: 195, 1958c: 93; Kapuscinski 1948: 72, 1950: 150; Karpinski 1932a: 100; Karsch 1884: 50; Kaya 1984; Kendrick 1962: 779; Kholodkovskii 1897: 118; Kielczewski 1966, 1976; Kielczewski & Balazy 1966, 1967: 161–163; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1977a, 1978, 1980a, 1980b, 1983; Klauser 1954: 286; Kleine 1908c: 214, 1909a: 48, 76, 1944: 69; Knoche 1907b: 476, 1908b: 245; Kohnle 1984; Kokueva 1900: 569; Kolmodin 1915: 217; Kolubajiv 1954: 12, 40, 1958: 81–89; Kolubajiv & Kalandra 1954: 30; Komarek 1925b: 858; Komarek et al. 1931: 1–256; Korenchenko 1980a; Kosarievskaya & Mamajev 1962: 450; Kostin 1964: 123; Koyama 1963; Kraemer 1950b: 376, 1953: 172–175; Krivosheina 1974; Krol 1980a; Kuhn 1949a: 245; Kurenzov 1934a: 51, 1964: 20; Kvamme 1985: 50; Langewald 1989; Lavaszy 1941: 195; Leach et al. 1937: 357; Leufven, Bergstrom, & Falsen 1984, 1988; Leufven & Nehls 1986: 237; Leufven et al. 1984; Lie & Bakke 1981; Lieutier 1978, 1979a, 1979c; Lieutier et al. 1988; Lindmo 1973; Lindquist 1969c; Lindquist & Bedard 1961; Lindquist & Hunter 1965; Lovaszy 1941: 194–204; Lovendal 1890a: 145; Lozovoi & Tropin 1965, 1967; Lu et al. 1957: 336; Luik 1977, 1986; Luik, Khansen, & Viik 1980; Luitjes 1976; Lundberg 1984; MacLeod 1954: 59; Madziara-Borusiewicz & Strzelecka 1977; Mahunka 1968; Mahunka & Moser 1980, 1982; Martinek 1977; Mathiesen 1951: 205, 1952: 275; Mathiesen-Kaarik 1953: 6, 22, 1960c; Matusevich & Maslov 1982; McAlpine & Morge 1970: 1564; McLaughlin 1971; Melnikova 1958: 240–244, 1960; Merker 1952: 1, 1956a: 168, 1960, 1965a; Merker & Adlung 1957: 122, 1958: 325; Merker & Wild 1954: 453; Meyer 1918: 178; Michalski & Ratajczak 1989; Mills 1985, 1986; Mills & Schlup 1989; Mills, Schlup, & Fischer 1984; Moore 1973: 54; Moser, Eidmann, & Regnander 1989; Moser & Bogenschutz 1984a, 1984b; Moser, Perry, & Solheim 1989; Mozolevskaya, Lebedeva, & Galaseva 1979; Muesebeck 1936: 11; Naumann-Etienne et al. 1977; Nechleba 1928b: 126, 1928c: 111, 1929a: 26; Nef & Janssens 1986; Niemeyer & Thalenhorst 1974; Nikitiuk 1951: 60, 1952: 41; Nishiguchi 1959: 271, 1962b, 1970; Nosek 1951: 106, 1952b: 96, 1959b: 87; Novak, P. 1952: 417; Novak, V. 1957: 423–436; Nunberg 1930: 201; Nunberg & Wiackowski 1958: 130; Nuorteva 1956a: 17, 1957a: 352, 1957b: 52, 1959d: 193, 1967a, 1968a, 1971: 69; Nusslin 1927: 324; O'Conner & Moser 1985; Ogibin 1973a, 1973b, 1973c, 1974; Okolow 1963; Okstad 1979b; Olofsson 1980; Otto 1985; Palmen 1946: 195; Peklo 1946: 329; Peklo & Satava 1949: 336; Peklo et al. 1950: 190; Perris 1956a: 178; Pettersen 1976a, 1976b; Pfeffer 1923a: 332, 1932a: 7, 1943b: 179, 1950c: 1, 1957a: 196, 1959: 2; Pfeffer & Prihoda 1950: 1; Pohl-Apel & Renner 1987; Poinar 1975: 164; Prell 1925b: 166, 1926: 70; Prossinagg 1979; Purrini 1977a, 1978a; Purrini & Weiser 1985; Quaschik 1953: 3; Ramade & Lieutier 1974; Ratzeburg 1869a: 59, 78; Ravn 1985; Redikortzev 1947: 247; Reid 1955: 316; Reisch 1972; Rennerfelt 1951: 133; Richter, D. 1973; Rodary 1959: 849; Rondani 1873: 140; Rosenfeld 1919: 30; Ruhm 1956b: 4, 1957: 351; Rumbold 1936: 419; Rummukainen 1954: 16; Ruschka 1924: 6–16; Saalas 1917a: 18, 1928: 649, 1930: 118, 1949: 344, 385, 1951: 13; Sachtleben 1952: 137; Salt 1963; Samsinak 1960; Schaar-

schmidt 1959: 782; Schedl 1936f: 149; Scheucher 1959: 263; Schimitschek 1930a: 258, 1931b: 462, 1932c: 231, 1935a: 196, 1936a: 559, 1948c: 129, 1948d: 12, 1948e: 97, 1950: 10, 1952a: 194, 1953b: 43, 526, 1955a: 58, 62–63, 1957: 252, 1964c: 140, 1964e, 1967; Schindler 1950: 503; Schlup 1987; Schneider-Orelli 1913: 32; Schopf 1989; Schoyen 1947: 293; Schroeder & Eidmann 1986; Schuster 1918: 102; Schwenki 1961: 132; Schwerdtfeger 1929: 336, 1944a: 170, 177, 1950a: 61, 1950b: 60, 1957a: 185, 1967: 343–344; Sedlaczek 1908: 53, 1921: 334–339, 1933: 307, 1935a: 154; Seitner 1923a: 1, 1924: 2; Sellenschlo 1986; Shepherd 1966: 515; Shifrine & Phaff 1956: 41; Silvestri 1911: 395; Simionescu 1967a: 255–259; Simon 1981; Sitowski 1930: 2, 1933: 383–388; Sittig 1948: 233; Slander 1958: 151; Slobodianiuc 1973; Smelyanets 1969; Smetana 1958: 95; Sokanovskii 1936: 74; Solheim 1986; Stammer 1933: 152, 1934: 197; Stark 1925b: 80; Steiner 1920: 381; Stolina 1959: 216; Stora 1938: 20; Struble 1930b: 116; Sunfor 1979; Svihra 1967: 213–214, 1968b, 1974d; Szczepanski 1960a: 409; Tenkacova & Mituch 1987; Thalenhorst 1949b: 194, 1949d: 262, 1958: 1–126; Thompson, W. R. 1943i: 59; Thompson, W. R. & Simmonds 1964: 24, 1965: 25; Thomson, H. M. 1960: 353; Titova 1966; Tommeras & Mustaparta 1984b; Tragardh 1925a: 171, 1927a: 208, 1936a: 145, 1941: 120; Tsankov & Rosnev 1978; Tvermyr 1967: 485; Uchida & Nakashima 1961; Ulrich 1948: 244, 1954a: 179; Van Zwaluwenburg 1928: 14; Vasechko 1971b; Vietinghoft 1924: 328; Vite 1952a: 101, 1952b: 197, 1955: 1333–1336; Vitzthum 1923: 151; Voute 1957: 174; Wagner 1954a: 95, 1954b: 227, 1954d: 191; Webb 1945: 70; Weiser 1954: 217, 1955: 374, 1961a: 328, 1963a: 315, 1969; Westerboer 1963: 349; Wettstein 1951: 44, 55; Wiackowski 1957a: 80, 1958: 174; Wichmann 1952b: 23, 1953a: 107, 1953b: 57–63, 1954b: 60–66, 1954d: 433, 1955a: 94, 104, 1956: 58, 1957c: 64, 1958: 231–235, 1962b: 23, 1967; Wild 1953: 121–176; Wilke 1931: 583, 620–657; Wingfield, van Wyk, & van Wyk 1989; Winter, K. 1980; Wisniewski 1979b; Woodring & Moser 1970; Wulker 1923: 435; Yamaguchi & Koizumi 1967: 113–134; Yasumatsu & Watanabe 1965: 69; Zabek & Zareba 19..: 59; Zinecker 1957: 99; Zinovjev 1957: 330, 1958: 382; Zumr 1983a, 1985b, 1986b. (**hb**) Adeli 1964: 395; Altum 1879c, 1881c: 287, 1883b, 1883c, 1883d, 1888b, 1889c; An 1979; Anderbrandt 1985, 1986, 1988a, 1988b, 1989; Anderbrandt & Lofqvist 1988; Anderbrandt & Schlyter 1989; Anderbrandt, Schlyter, & Birgersson 1985; Anderbrandt, Schlyter, & Lofqvist 1988a, 1988b; Annila 1969, 1971, 1977; Annila & Nuorteva 1977; Annila & Petaisto 1978; Anonymous 1948k: 1, 1950a: 99, 1972b, 1973d; Apfelbeck 1916b, 1917; Arnberg, Lekander, & Wastensson 1973; Austara & Midtgaard 1986; Austara & Pettersen 1977; Austara, Pettersen, & Bakke 1977; Bach 1864; Bakke 1960, 1976; Bakke & Austara 1973; Bakke, Austara, & Pettersen 1977; Bakke & Pettersen 1977; Bakke & Riege 1982; Bakke & Strand 1981; Balachowsky 1963a: 1243; Balazy 1968; Barbey 1901: 24, 82, 1913, 1922b, 1925: 61, 1942; Bargmann 1897, 1899; Becker 1950; Beffa 1949, 1961; Behlen 1826; Bejer-Petersen 1957, 1976; Beran 1936; Berg 1827; Berryman 1988; Berryman, Stenseth, & Isaev 1987; Bielz 1851; Biermann 1977; Blanchere & Robert 1889; Block 1776; Boas 1923: 344, 1933: 268–280; Bonnemaison 1953; Borcea 1924; Borgmann 1907: 513–518, 1908: 133–134; Borodajewsky 1928, 1929b, 1930a, 1930c; Botterweg 1982, 1983; Brandt 1948, 1960: 135; Braun 1941c; Brehm 1829; Browne, F. G. 1968b: 368; Browne, J. M. B. & Bevan 1966; Budge 1949; Budkov 1897; Butovitsch 1930b, 1939; Byers 1984a; Byers & Lofqvist 1989; Cecconi 1906, 1924; Cederholm 1981; Chararas 1956c, 1957e, 1958a, 1962c: 164, 1977b, 1980a; Charvat 1950, 1951; Chevandier 1851b; Chittenden 1890; Chorbadzhievo 1929; Christiansen & Bakke 1988; Cogho 1874a, 1875b, 1875c, 1875d, 1876a, 1876b; Dombrowsky 1887, 1892; Duelli, Studer, & Naf 1986; Eckstein 1889, 1897, 1915, 1917, 1926: 572, 1928, 1935, 1936, 1939b, 1939c; Eckstein, F. 1939; Eichhoff 1881a: 49, 219, 1882a: 241, 1882e: 321, 1883e: 50, 1889: 154; Eidmann 1965b, 1974b, 1983; Eidmann & Klingstrom 1976: 251; Escherich 1914: 113, 170, 311, 1923b: 429; Eulefeld 1905; Everts 1900; Feisthamel 1835; Feytaud 1946, 1950a; Fishbach 1875; Fisher 1931; Fleischer 1875c, 1877a; Floericke 1924; Flohrer 1948; Forsse 1987, 1989; Forsse & Solbreck 1985; Franz, J. 1948e: 426, 1950: 51, 1954; Franz, M. 1877; Froggatt 1889; Fuchs 1904a, 1905c: 339, 1907: 12, 48, 1911b; Funke 1875a, 1875b; Furst 1888: 109; Furuta et al. 1985; Gabler 1948a, 1948b, 1955; Galoux 1947a, 1948a; Girard 1873: 8; Gmelin 1787a; Gornostaev 1916: 311, 1917: 308–315; Grandi 1951; Gries 1984a, 1985; Guse 1883; Gyorfi 1957; Hagedorn 1903a; Hallgren, Lekander, & Lonner 1972; Hammer 1826; Hansen, T. E., Viik, & Luik 1980a, 1980b; Harding & Ravn 1985; Hartig 1811: 320, 327, 1820: 320, 327, 1832: 280, 285, 1861: 325, 330, 1877: 192; Helland, Anderbrandt, & Hoff 1989; Helland, Hoff, & Anderbrant 1984; Helmbacher 1924; Henneguy 1804: 175; Hennings 1907a: 327, 1907b: 221–222, 1907c: 603, 1908a, 1908b, 1908c: 220, 1908d; Henschel 1876a: 45, 238, 1895a: 187; Herlein 1878: 93–98; Hess 1898: 332, 1907: 238; Hess & Beck 1914: 269, 1927: 325; Hierholzer 1951a; Holmgren 1867: 113, 129; Hufnagel 1887: 512; Hufnagl & Puzyr 1951: 108, 110; Inouye 1954: 168; Inouye et al. 1955: 68; Itzerott & Wellenstein 1954: 467; Jaensch 1938: 47; Jamnicky 1961b: 271; Jansen 1979; Jester 1817; Johnson & Pettinger 1961b: 2; Joly 1949a: 7, 1976; Jong & Sabelis 1989; Jotland 1975a; Judeich

1875b: 74, 1876b: 254, 1880: 156, 1886: 63; Judeich & Nitsche 1895: 506; Kalandra 1960: 345–364, 1962, 1966; Kangas 1940b, 1954b; Karner & Kliefoth 1976; Karpinski 1933b: 37; Karpinski & Strawinski 1948: 157; Karsch 1883: 141; Kauschinger 1883: 97, 101; Keller 1907a: 179; Kellner 1875a: 641, 1876a: 40, 1876b: 191, 1880: 421, 1881: 368; Keskinalemdar, Alkan, & Aksu 1987; Kholodkovskii 1889: 263, 1912: 277, 311; Kirkendall & Stenseth 1989; Knoche 1905: 354, 1907a: 219, 1907b: 476, 1907c: 75, 1907d: 285, 1907e: 50, 1908a: 44; Knotek 1894a: 558, 1897: 151, 1898b: 326; Kobzar 1968a; Koch 1909: 319; Kollar 1840: 257, 357; Komarek 1925a: 101, 1950: 110; Konig, E. 1957: 99; Kostin 1960: 135; Kraemer 1950b: 376, 1953: 463; Krivolutskaya 1956: 836, 1960; Kuhn 1949: 245; Kurenzov 1935a: 42, 1948b: 107, 1950d: 214; Landin 1952: 24, 99; Lekander 1959a: 84, 1959b: 50; Lengerken 1939: 68, 1954: 89; Lentz 1857: 139; Liese 1950: 140; Lindelow 1984; Lindelow & Weslien 1986; Lindemann 1881a: 233, 1882b: 189; Lindgren 1980a: 66; Loeffler 1854: 172; Lohrenz 1907: 45; Loos 1913: 411; Louzil 1961: 46; Lovendal 1890a: 145; Lozovoi 1966; Lozovoi & Tropin 1965, 1967; Lugger 1899a; Luik 1977, 1986; Luik, Khansen, & Viik 1980; Luitjes 1976; Lunardoni & Leonardi 1889: 461; Lunden 1980; Luyk 1977; MacDougall 1900b: 328, 1925: 1–37; Madon 1930: 99; Magema, Gaspar, & Severin 1982; Makashimi & Suzuki 1965; Maksymov 1950: 554; Mandel 1953: 172–175; Marcu 1926c: 67, 1930: 327–336; Marcus 1930: 609–677; Martinek 1955: 125, 1956: 615, 1957a: 696, 1957b: 281; Maslov & Demakov 1982; Masutti 1981; Melnikova 1960; Merker & Adlung 1957: 122, 1958: 325; Mills 1986; Mills & Hartel 1984; Morstatt 1924: 21; Mozolevskaya, Lebedeva, & Galaseva 1979; Munro 1926: 69; Nakashima & Buzuki 1965: 66; Naumann-Etienne 1978a; Nilssen 1984; Nishiguchi 1962a, 1970; Nordlinger 1856: 17, 1870a: 186, 1870b: 261; Nosek 1959b: 87; Novak, V., Hrozinka, & Stary 1976: 37; Nunberg 1946b: 3; Nuorteva 1956c: 23, 1967a, 1968a, 1970; Nusslin 1898: 275, 1904: 2, 1905a: 84, 1905b: 451, 1906a: 50, 1906b: 4, 1906c: 344, 1907: 608, 1913: 204, 1927: 324; Ogibin 1973a, 1973b, 1973c, 1974; Ohnesorge 1953: 437, 1955: 278; Oken 1836: 1677; Okstad 1979d; Orest 1927: 59; Ow 1948: 153; Packard 1890: 23; Pauly 1894: 376, 1906: 160; Perris 1856a: 178; Pettersen & Austara 1975; Pfeffer 1932: 1–23, 1941c: 2, 5, 1952a: 159, 1989a: 76; Polster 1948a: 164, 1948b: 361; Postner 1974: 455; Prell 1930c: 627, 1931: 364, 1949: 1–49; Quaschik 1953: 3; Qui & Huo 1958: 264; Ratzeburg 1837: 131, 139, 1839: 158, 169, 1871c: 81; Ravn 1985; Regnander 1975a, 1975c, 1977; Reh 1900a: 94; Reid 1955: 316, 1956: 16; Rey 1892a: 18; Rhumbler 1927: 324; Rimski-Korsakov et al. 1949: 264; Roediger 1988; Rozhkov 1970: 154; Rupertsberger 1879: 231, 1880: 231; Saalas 1913a: 67, 89, 1916: 91–95, 1919: 1–415, 1949: 344, 385, 1951: 13; Sanders 1984, 1987b; Sandhall 1975; Sauerwein 1981; Schedl 1935c: 40; Schevyrew 1905b: 1108, 1905c: 192; Schimitschek 1930a: 258, 1938a: 301, 1948c: 129, 1955a: 58, 62–63; Schindler 1950: 503; Schlup 1987; Schlyter 1984; Schlyter & Cederholm 1981; Schlyter et al. 1984; Schmidt 1881: 30; Schnaider 1954: 171; Schnaider & Sierpinski 1955: 60; Schneider-Orelli 1913: 32, 1947b: 157, 1947e: 89; Schopf 1985, 1989; Schwappach et al. 1929: 186; Schwenke 1962: 137; Schwerdtfeger 1929: 336, 1944a: 170, 179, 1957a: 185, 1981: 191; Sedlaczek 1921: 335, 1935a: 154; Segolson 1975; Seitner 1923a: 1, 1923b: 149; Severin 1902a: 81; Shepherd 1966: 515; Shishov 1928a: 673; Shkarednyi 1981; Silvestri 1911: 395; Simionescu 1967b, 1968, 1978; Simon 1981; Slander 1958: 151; Solbreck 1985; Spessivtsev 1913a: 75, 1921b: 222, 1923: 206, 1934: 207, 1938: 160; Stanek 1969: 257; Stark 1927a: 15, 1952: 402; Stebbing 1903a: 229, 1909b: 13, 1911a: 2; Stenseth & Kirkendall 1989; Stolina 1970; Svihra 1970a, 1972e, 1974b, 1974d; Taschenberg 1880: 220; Thalenhorst 1958: 1–126; Tragardh 1914: 93, 1927c: 79, 1930c: 469, 1931: 56, 1939b: 135, 203; Tragardh & Butovitsch 1935: 1–268; Trauboth 1985; Trebra 1811: 11; Tredl 1908b: 137; Tschorbadjiev 1925: 57–61, 1929: 174; Uchida & Nakashima 1961; Vasechko 1971a, 1971b, 1978a, 1978b; Vite 1952a: 101; Vite & Pitman 1967: 683–701; Voute 1950b: 1; Wachtl 1876a: 452, 1901: 379, 381; Wang 1982; Weber 1926: 574; Weslien & Bylund 1988; Weslien & Lindelow 1989; Wichmann 1927b: 350; Winter, K. 1980; Wolff & Krausse 1922: 99; Zinecker 1957: 99; Zinovjev 1957: 330, 1958: 382; Zumr 1982a, 1982b, 1982c, 1982d, 1982e, 1983a; Zumr & Soldan 1981. (**ds**) Acloque 1896, 1914; Alfken 1924: 365; Ammann & Knabl 1913, 1923; Andersch 1851; Androic 1966: 48; Anonymous 1928c: 202, 1976j, 1977r, 1978i, 1979p; Arru, Covasse, & de Bellis 1966: 32; Audras & Schaefer 1957; Bain 1974: 17; Bakke 1960a: 306, 1960b: 357; Bakke & Kvamme 1977; Balachowsky 1943a, 1944b; Balazy & Michalski 1960; Balogun 1970: 226; Barbey 1922b; Barthe 1896; Bau 1888; Beck 1817; Bedel 1888b: 401, 417; Beffa 1949; Behlen 1826; Bejer-Petersen & Jorum 1977: 28; Belousov 1916, 1917: 335; Benick 1921; Benz 1985; Berg 1827; Berryman 1988; Bielz 1887; Blanchere & Robert 1889; Boas 1923: 344; Borcea 1924; Borchert 1951; Brakman 1954, 1966b: 206; Brancsik 1871, 1906; Brandis 1890: 185; Browne 1968: 368; Brundin 1934; Bucking 1932; Budkov 1897; Buresh & Lazarov 1956; Calwer 1884, 1893; Carpelan 1944; Cecconi 1902, 1906; Chapuis & Candeze 1853; Chararas 1961b: 70, 1961c: 94; Charvat 1950; Chittenden 1890; Cho 1955, 1957; Choo 1983: 95; Choo & Woo 1985: 165; Chorbadzhievo 1924d, 1929; Christiansen & Bakke 1988;

Christiansen & Huse 1980; Chrystal 1937; Credler 1868; Crooke 1955c, 1962; Crooke & Bevan 1957; Debatisse 1945; Dejean 1821, 1825, 1837; Duftschmidt 1925; Dzhambazishvili 1959, 1961b: 1253; Eder 1934; Eggers 1904, 1912f; Eidmann 1974b; Elton 1951; Elton & Voute 1950; Endrodi 1958a, 1958b; Ericson & Sandin 1893; Escalera 1919; Escherich 1923b: 429, 485, 575, 1932b; Esterberg 1928, 1959; Everts 1900, 1925; Favre 1890; Feige 1918; Ferguson 1920; Fleischer 1921b; Forster 1849: 439; Fowler 1891; Frey 1937; Fricken 1889: 343; Fuchs 1904a, 1905a, 1905c: 339, 1907: 12, 48, 1913, 1920: 109–222; Gabler 1949b; Gail 1906; Gaubil 1849: 126; Gaunitz 1928: 92; Gauss & Wellenstein 1900; Gemminger & Harold 1872: 2691; Geschwind 1918; Gobang 1855: 745; Goeze 1777: 130; Gornostaev 1917; Gozis 1875: 80; Gradojevic 1933; Gredler 1866: 373, 1869: 73; Greyerz 1851; Grill 1895: 310; Grouzelle 1905; Guse 1893; Gyllenhal 1827: 620; Gyorfi 1941b, 1962: 212; Hagedorn 1903a, 1910d: 60; Hansen, V. 1939, 1956, 1964: 465; Heikertinger 1954; Heinemann 1908a; Hellen 1947; Heller 1881: 173; Hennig 1954: 257; Henschel 1895a: 187; Heyden 1876: 300; Heyden, Reitter, & Weise 1903: 182, 1906: 712; Hickin 1963; Hiksch 1930; Hlawa 1870; Hoffmann 1952a: 104; Holdhaus & Deubel 1910: 181; Holmgren 1867: 129, 113; Holzel 1946: 81; Horion 1949, 1951; Hubault 1923b; Ihssen 1939: 336; Ishikura 1966; Jablokoff 1953: 325; Jablonski 1869: 285; Jahn & Sinreich 1960: 119; Jamnicky 1960a; Jazentkovsky 1912: 290, 1922: 7–9; Jenistea 1933: 123, 1934: 61; Joly 1949b: 253, 1976; Judeich & Nitsche 1895: 506; Kadyro 1988: 43, 1989; Kaltenbach 1874: 685; Karpinski 1925: 217, 1926: 83, 1931: 35, 1932a: 100, 1933b: 37, 1948b: 231; Karpinski & Strawinski 1948: 157; Keler 1922b: 211, 1923: 41–45, 1925b: 273; Kellner 1876b: 191; Kestercanek 1881a: 12; Kevan 1946: 241, 1949: 30; Kiefer et al. 1942: 529; Klefbeck & Sjoberg 1960: 232; Kleine 1912a: 128, 212, 262, 264, 268, 1913a: 35, 1913b: 128, 1914b: 248, 257, 1934a: 151; Kloft & Hinks 1945: 218; Knotek 1892a: 37, 1894a: 558, 1898b: 326; Ko 1969: 280; Koltze 1901: 153; Kolubajiv 1934: 64; Komarek 1925b: 858–865, 1950: 113; Kontkanen 1932: 59; Koppen 1882: 233; Kovacevic 1957: 67; Kraatz 1869: 59; Krausse 1910: 171, 1911: 67; Krivolutskaya 1956: 836, 1960, 1983; Kudela 1946a: 332; Kuhn 1949a: 245; Kurenzov 1934a: 57, 1935a: 42, 187, 195, 1936a: 111, 1936b: 351, 1938a: 59, 1950: 214, 1951b: 19, 1964: 20, 1965, 1967; Kurir 1947c: 7; Lacordaire 1866: 383; Langhoffer 1915c: 158; Leclercq 1971; LeConte 1846: 162; Lekander 1955b: 18; Lennon & Douglas 1892; Letzner 1855: 142; Li, Shi, & Ao 1984: 48; Liegel 1886: 43; Liese 1950: 140; Lindberg & Saris 1952: 59; Lindemann 1883: 189–194, 1884b: 264; Linnaniemi 1935: 46; Lokaj 1868: 64; Lomnicki 1886a: 243, 1913b: 148; Loos 1913: 411, 1919: 283–288; Lovendal 1890c: 211; Lucht 1987: 279; Luitjes 1957: 138; Lunardoni & Leonardi 1889: 461; Lundberg 1974: 92, 1979: 31; Lundblad 1950c: 117; Marchant & Borden 1976; Matthews & Fowler 1883: 42; Meinert 1887: 70; Mequignon 1936: 15, 25; Merker 1956b: 321; Meves 1888a: 12; Michalski 1957: 167; Miller 1868: 27; Mokrzecki 1923: 1–32, 1925: 1–7, 1928: 273; Muller 1776: 56; Mumford 1960: 29, 1962: 27; Munro 1921: 88; Munster 1928: 290; Murayama 1929b: 2, 1929c: 23, 1930a: 4, 1930b: 15, 1936b: 117, 1937b: 371–374, 1939: 142, 1942a: 56, 1948: 6, 1950b: 1294, 1954b: 171, 1957a: 37; Nakane et al. 1963: 383; Negru 1966b: 403, 1968a: 457; Neuzilova 1956: 273–275; Nobuchi 1966d: 36; Normand 1937: 269; Novak, P. 1952: 417; Nunberg 1927a: 213, 1928a: 88, 116, 1954: 85, 1955a: 30; Nuorteva 1955a: 30, 1955b: 195, 1956b: 168, 1971: 68; Nusslin 1898: 275; Orest 1926c: 67; Pacher 1853: 49, 1865: 152; Palm 1946: 122, 1948a: 76, 91; Palmen 1946: 195; Penecke 1927: 235; Perris 1876a: 254, 1877a: 414; Pfeffer 1924b: 472, 1931b: 75, 1936: 90, 1942c: 447, 1947e: 2, 1950b: 73, 1989a: 76; Pierce, W. D. 1917: 66; Pittioni 1943: 175; Platonoff 1940: 11, 1943: 141; Plaza & Gil 1982: 250; Pomerantzev 1907b:x, 423, 493; Poppius 1900: 108; Postner 1974: 455; Prediger 1888: 272; Rapp 1934: 731, 1969: 345–348; Ratzeburg 1837: 131, 139, 1839: 158, 169; Redtenbacher 1858: 834, 1874: 377; Reitter 1869b: 154, 1894a: 80, 1916: 303; Revy & Siroki 1942: 82; Rimski-Korsakov et al. 1949: 264; Roemer 1879: 40; Roubal 1941: 273; Rozhkov 1970: 154; Ruskov 1928c: 61; Ryle 1951: 179; Saalas 1913a: 67, 89, 1917a: 18, 1930: 118, 1931: 69; Sahlberg 1900: 105; Sainte-Claire & Mequignon 1938: 448; Schaschl 1854: 133; Schaufuss 1915: 1248; Schaum 1859: 96, 1862: 101; Schedl 1952f: 87, 1953e: 22, 1964a, 1980a: 28 1981b: 91; Scheerpeltz & Winkler 1930: 258; Schenfelt 1960: 542–546; Schilsky 1909: 188; Schimitschek 1938a: 301, 1938b: 115; Schiodte 1873: 102; Schreiner 1897: 369; Schwerdtfeger 1981: 191; Seidl 1876: 4; Seidlitz 1872: 395, 1891a: 565, 1891b: 611; Sharp & Fowler 1893: 34; Shiraki 1952; Siebke 1875: 284; Simionescu 1967a: 466; Sokanovskii 1936: 74, 1960; Spahr 1981; Sparre-Schneider 1889: 61; Stanionyte, Jakimavicius, & Jonaitis 1979: 110; Stark 1926b: 105, 1926j: 127, 1927b: 90, 1931a: 28, 1931d: 550, 1952: 402; Stebbing 1903a: 229; Stein 1868: 114; Stein & Weise 1877: 164; Stephens 1829a: 145, 1830: 358, 1839: 207; Stierlin 1898: 443; Stierlin & Gautard 1871: 293, 1906: 206; Straby 1969: 7; Strand 1946: 604; Sturm 1826: 102, 1843: 230; Szmidt 1960: 83; Thomson 1859: 147, 1865: 363, 1868: 222; Townson 1803: 192; Tragardh 1914: 93, 1939b: 135, 203; Tredl 1907: 15, 1908b: 137; Tschorbadjiev 1929: 174; Uchida & Nakashima 1961; Vappula 1965: 153; Villa & Villa 1833: 26; Villasenor 1966; Virkki

1960: 3–16; Vite 1961; Wachtl 1870: 259, 1876a: 452; Walker, C. & King 1974; Wegelius 1960: 107; Westhoff 1882: 239; Wichmann 1924: 16–18, 1927a: 77, 1953: 202, 1955a: 94, 104, 1956: 58–62, 1957: 64–72, 433–440; Wiepken 1883: 89; Wilke 1931: 583, 620–657; Wilken 1864: 373; Winter, T. G. 1983: 50, 1985; Yanovskii 1977a, 1989: 64; Yanovskii & Dmitrienko 1983; Yanovskii & Tegshzhargal 1985: 413; Yin, Huang, & Li 1984: 131; Zetterstedt 1828: 342, 344, 1840: 192; Zinovjev 1955: 187; Zivojinovic 1950: 299–310, 1960: 25; Zivojinovic & Petrovic 1955: 248–257; Zoufal 1920: 21. (**tx**) Acloque 1896; Altman 1844; Bach 1854, 1864; Bakke 1960: 306; Balachowsky 1943a: 169, 1944b, 1949a: 265; Balogun 1970: 230; Barbey 1901: 23, 84; Bevan 1987: 113; Bechstein 1818: 74; Bechstein et al. 1805: 85; Bedel 1888b: 401, 417; Beffa 1949, 1961; Behlen 1826; Bejer-Petersen 1957; Bergroth 1884; Bertolini 1872; Blanchere & Robert 1889; Boas 1923: 344; Brancsik 1871; Brandt 1960:pl. 28; Calwer 1858; Castelnau 1840; Ceballo 1945; Chapuis & Candeze 1853; Chararas 1956c, 1961c: 95, 1962c: 164; Charvat 1950; Choo 1983: 95; Chorbadzhievo 1924d; DeGeer 1775; Dejean 1821, 1825; Doebner 1876; Dombrowsky 1887, 1892; Duffy 1953: 11; Duftschmidt 1825; Eggers 1912f: 29, 1929e: 42, 1933a: 101, 1944c: 141; Eichhoff 1864b: 42, 1872d: 138, 1877a: 387, 1877b: 118, 1878b: 243, 1881a: 49, 219, 1883a: 112, 137; Endrodi 1957b; Erichson 1836: 63; Escherich 1923b: 429, 485, 575; Escherich & Escherich 1897; Fabricius 1775, 1787: 36, 1792: 365, 1801: 385; Fankhouser 1912a; Fauvel 1889; Ferrant 1911; Ferrari 1867a: 42, 47, 1867b: 114; Fleischer 1927; Flohrer 1948; Formanek 1907: 41; Fricken 1889: 343; Fuchs 1911a, 1913; Gabler 1949b, 1955; Gebien 1907: 197; Germar 1824; Girard 1873; Gmelin 1790: 1601; Goeze 1777: 130; Grune 1979: 148–149; Gyllehnal 1813: 351, 1827: 620; Hagedorn 1910a: 106; Hansen, V. 1956, 1964: 465; Henry 1892: 10, 11; Henschel 1876a: 45, 238, 1882a: 97–98, 1895a: 187; Herbst 1793: 81; Hess 1875; Hopkins 1914: 124, 1915c: 220, pl. 9, fig. 2, pl. 10, fig. 2; Hopping, G. 1963c: 514; Houlbert 1922a: 12, pl. 1; Jablonsky 1785: 81; Jacquelin du Val & Fairmaire 1868: 107; Jansen 1979: 17; Joly 1976; Judeich & Nitsche 1895: 506; Kalina 1970: 130; Karpinski & Strawinski 1948: 157; Keler 1927a: 226; Kirby 1837: 191; Knotek 1892a: 37; Koch 1913: 111, 1928: 76, 87, 1932: 141; Krivolutskaya 1956: 836, 1958: 179; Kuhnt 1913: 1057; Kurenzov 1941a: 208, 1948b: 107; Lacordaire 1866: 383; Latreille 1807: 276; Lekander 1959b: 50; Letzner 1891: 376; Leunis 1886: 180; Lindemann 1875c: 155, 1881a: 233; Linnaeus 1758: 355, 1767: 143; Louzil 1961: 108; Lovendal 1889b: 55, 1890c: 211, 1898: 141; Lucas 1920: 345; Lucht 1987: 279; Lunardoni & Leonardi 1889: 461; Marsham 1802: 57; Meixner 1937: 1214; Motschulsky 1860a: 155; Muller 1776: 56; Murayama 1929c: 29–30, 1930b: 15, 19, 31, 1937b: 371, 374, 1950b: 1294, 1954b: 171; Nakane et al. 1963: 383, pl. 192; Negru 1966b: 403; Niisima 1907: 609–613, 1909: 146; Nobuchi 1966d: 36, pl. 52, 1974:pls. 2–3; Nordlinger 1848: 234, 1856: 17, 1870a: 186; Novak, V., Hronzinka, Stary 1976: 37; Nunberg 1928a: 141, 1930: 200–208, 1954: 85; Nusslin 1911a: 61, 150, 155, 254, 338; Olivier 1795b: 7; Panzer 1795a: 285; Paykull 1800: 145; Perris 1877a: 414; Pfeffer 1932b: 26, 1941c: 2, 5, 1947e: 2, 1955a: 243, 1989a: pl. 1, 10, 14; Plaza & Gil 1982: 250; Portevin 1935: 337; Postner 1974: 455; Prell 1929: 90; Quaschik 1953: 35; Ratzeburg 1837: 131, 139, 1839: 158, 169; Redtenbacher 1849a: 357, 1849b: 26, 1858: 834, 1874: 377; Reitter 1894a: 80, 1913a: 104, 1916: 303; Rey 1892b: 30; Rhumbler 1927: 324; Roemer 1789: 40; Rudnev 1966: 120; Rupertsberger 1879: 231, 1880: 231; Saalas 1913a: 67, 89, 1914: 304–306, 1949: 344, 385; Sahlberg 1836: 143; Sandall 1975: 84; Say 1826: 319; Schedl 1928: 109–111, 1934f: 1645, 1937: 521–557, 1946a: 6, 1950a: 79, 1952f: 87, 1953e: 22, 1980a: 28, 1981b: 91; Scherb 1971; Schevyrew 1889a: 21; Schilsky 1888: 354; Schimitschek 1937c: 57, 1955c: 89; Schlechtendal & Wunsche 1879: 125; Seidlitz 1872: 395, 1891a: 565, 1891b: 611; Sokanovskii 1929: 521–526, 1936: 73–74, 1954: 19, 1960: 677; Spessivtsev 1913a: 74–75, 1921: 219–223, 1922a: 483, 491, 1922b: 221–223, 1923: 200–214, 1925a: 188, 1925b: 17, 1929: 678–687, 1931: 72–73; Stanek 1969: 257; Stark 1925: 78–81, 1927: 101, 1931: 339–343, 1952: 402; Stebbing 1909b: 13; Stephens 1829a: 145, 1829b: 12, 1830: 358, 1838: 207; Stierlin 1898: 443; Sulzer 1776: 21; Taschenberg 1880: 220; Teplouchow 1890: 254; Thomson 1859: 147, 1865: 363, 1868: 222; Tsai & Li 1959: 101; Uchida & Nakashima 1961:pl. 2; Villers 1883a: 6; Wachtl 1882: 34, 1883a: 6, 1895: 7; Weber, L. 1912: 31; Westwood 1840: 39; Yin, Huang, & Li 1984: 131; Zetterstedt 1828: 342, 344, 1840: 192. (**ms**) Anonymous 1971p, 1972i, 1974i, 1977s, 1978m, 1979t; Bakke 1978b; Bakke & Strand 1981; Barth 1878; Berryman & Baltensweiler 1981; Bevan 1964b; Borgmann 1908; Brandt 1960: 135; Buddenberg 1882; Butovitsch 1941; Byers 1984a, 1984b; Chararas 1959d, 1971a: 853; Cheskis et al. 1979; Crooke & Bevan 1960; DeGryse 1934: 480; Denssing 1874; Doganler 1984; Eggers 1940e: 63; Elsner 1963; Escherich 1932b; Fuchs 1911b; Gabler 1949a; Gries 1984a; Gries & Sanders 1984b; Guse 1878a; Hartig 1834: 108, 112; Heinemann 1908a; Helland, Hoff, & Anderbrant 1984; Henschel 1880c: 60; Henze 1943; Holst 1937; Ivanchenko et al. 1979; Kalandra 1971: 105; Kangas 1958c: 93; Keler 1956: 283, 1963: 316; Kirkendall & Stenseth 1989; Knoche 1907d: 285; Kozikowsky 1929: 253; Landin 1953: 24, 99; Lanne et al. 1989; Lebedeva, Vasilyeva, & Scherbakova 1975; Lekander 1959a: 84; Lieutier 1984a; Lovendal

1890a: 145; Lucas 1920: 345; Lundholm 1989; Martinek 1974; Maslov & Demakov 1982; McFadden et al. 1982; Merino-Rodriguez 1966: 44; Moser, J. C. & Bogenschutz 1984a; Mracek 1985; Naumann-Etienne et al. 1977; Okstad 1979c; Quisumbing & Kydonieus 1982: 229; Regnander 1975b; Regnander & Solbreck 1981; Reh 1900a: 94; Ritter 1929: 555; Rohrl 1914a: 131; Sadovnikova 1980; Sandhall 1975; Schedl 1938b: 317; Schennikov 1979; Schimitschek 1955b: 102; Schlyter, Lofqvist, & Byers 1987; Schwappach 1924: 57; Schwenke 1961: 132; Schwerdtfeger 1925: 184, 1946b: 62; Sedlaczek 1902a: 126, 1907: 82, 1913: 455, 1936: 200; Sinreich 1962; Sunfor 1979; Thalenhorst 1960: 605; Tischenko et al. 1978; Ulrich 1948: 244; Vasilyeva & Minor 1975; Vasilyeva et al. 1976; Vite 1950: 121; Vorontzov 1968; Weber, L. 1912: 31; Wellenstein 1951a: 1; Wichmann 1961: 333; Winter & Burdekin 1987.

octodentatus Paykull 1800: 146 (*Bostrichus*). Syntypes, sex?; Sweden; not located. Synonymy: Thomson 1865: 363.

References: (**tx**) Gyllenhall 1827: 353; Hartig 1834: 108; Paykull 1800: 146;
Schedl 1950a: 79; Thomson 1865: 363; Zetterstedt 1840: 192.

typographus japonicus Niisima 1909: 147. Syntypes, sex?; Japan: Hokkiedo, Iburi Prov. Tomakomai, Ishikari, Jozankei, Uriu, Hopporo; Nobuchi Collection, Ibaraki. Synonymy: Sokanovskii 1954: 19.

Notes: (1) This form has been treated variously as a variety, form, or geographical race by most authors. Its status as a subspecies is doubtful.

References: (**ay**) Koizumi & Yamaguchi 1967. (**bv**) Furuta 1989; Kobayashi et al. 1984; Koizumi 1969, 1977; Koizumi & Yamaguchi 1967; Yamaguchi 1963; Yamaguchi & Chikara 1967; Yamaguchi et al. 1963. (**cn**) Anonymous 1980g; Furuta & Takahashi 1984; Inouye 1954: 167–180, 1963: 160–164; Inouye & Yamaguchi 1955: 72–94; Kobayashi et al. 1984; Koizumi 1969, 1977; Nishiguchi 1957: 69–78; Tamanuki 1933: 1–54, 1940a: 262; Yamane 1981: 471; Yanagisawa 1952: 105; Zhang et al. 1958: 28. (**ec**) Arnoldi et al. 1955: 721; Kabir & Giese 1966a: 891; Kamijo 1981; Nishiguchi 1959: 270–274, 1960b: 279–284, 1960c: 64–73; Yamaguchi 1959: 147–153, 1963; Yamaguchi & Chikara 1967; Yamaguchi & Koizumi 1969: 39–47; Yamaguchi et al. 1963. (**hb**) Furuta 1989; Koizumi & Yamaguchi 1967; Krivolutskaya 1965: 241, 1973: 141; Nishiguchi 1960b; Yamaguchi 1963; Yamaguchi & Chikara 1967; Yamaguchi et al. 1963: 53–135. (**ds**) Anonymous 1980g; Kleine 1913b: 128, 1934a: 150; Kono 1938b: 65; Kono & Tamanuki 1939: 88, 95; Krivolutskaya 1956: 826–839, 1965: 240, 1973: 141; Kurenzov 1957b: 19; Murayama 1936: 113–120, 1937: 373; Nobuchi 1974: 52. (**tx**) Hagedorn 1910a: 105; Niisima 1909: 147, 1910a: 2, 1929: 376–381; Nobuchi 1974: 52, pl. 2–3; Schedl 1934f: 1645, 1950a: 81; Sokanovskii 1954: 19. (**ms**) Yamane 1981: 471.

***ussuriensis* Reitter** 1913a: 107. Syntypes, sex?; Ostsibirien: Ussuri; NHMB, Budapest.

Distribution: Asia (Ussuri in E USSR).

References: (**hb**) Spessivtsev 1921b: 222; Stark 1952: 400. (**ds**) Stark 1952: 400. (**tx**) Reitter 1913a: 107; Schedl 1934f: 1645, 1950a: 78; Stark 1952: 400.

***woodi* Thatcher** 1965: 493. Holotype ♀; Beaver Creek, Logan Canyon, Utah [USA]; USNM, Washington.

Figures: Hopping 1965b: 536, Kusch 1967: 10, Thatcher 1965: 494–495.

Distribution: North America (Alberta in Canada/ N Arizona, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming in USA).

Hosts: *Pinus flexilis, P. strobiformis*).

References: (**bv**) Barr, B. A. 1969: 642. (**cn**) Anonymous 1968g, 1969h. (**ec**) Furniss, R. L. & Carolin 1977: 393; Lindquist 1969c. (**hb**) Furniss, R. L. & Carolin 1977: 393; Wood, S. L. 1982b: 680. (**ds**) Anonymous 1968g, 1969h; Bright 1976d: 162; Furniss, R. L. & Carolin 1977: 393; Gast et al. 1989: 385; Hopping, G. 1965b: 540; Kusch 1967; Wood, S. L. 1972a: 420, 1982b: 680. (**tx**) Bright 1976d: 162; Hopping, G. 1965b: 540; Kusch 1967: 10; Thatcher, T. O. 1965: 493–495; Wood, S. L. 1972a: 420, 1982b: 680.

Tribe Dryocoetini Lindemann

Dryocoetoideae
References: Lindemann 1876: 165.

Dryocoetinae
References: Nusslin 1911: 432.

Dryocoetini
References: Lucas 1920: 24; Murayama 1957a: 589; Reitter 1913a: 28; Wood, S. L. 1978a: 113, 1982b: 67, 1986a: 70.

Dryocoetina
References: Balachowsky 1949a: 175; Nunberg 1954: 16.

Thamnurinae
References: Nusslin 1911: 377, 433.

Thamnurgina
References: Balachowsky 1949a: 163; Nunberg 1954: 16; Reitter 1913a: 27.

Taphrorychini
References: Reitter 1913a: 29.

Taphrorychina
References: Nunberg 1954: 17.

Taphrorychinina
References: Balachowsky 1949a: 187.

Genus *Tiarophorus* Schreiner

TIAROPHORUS SCHREINER 1882: 246. Type-species: *Tiarophorus elongatus* Schreiner, monobasic.

Hypaspistes Hagedorn 1908: 374. Type-species: *Hypaspistes camerunus* Hagedorn, monobasic, preoccupied by Waterhouse 1886.
References: (**tx**) Hagedorn 1908: 374, 1909a: 377; Schedl 1961k: 738, 1962r: 94.

Orthaspistes Hagedorn 1909a: 733. Type-species: *Hypaspistes camerunus* Hagedorn. Synonymy: Eggers 1927: 196.
References: (**tx**) Eggers 1920: 124, 1927a: 196; Hagedorn 1909a: 733; Nunberg 1967a: 67; Schedl 1952i: 9, 1961k: 738, 1962r: 94.

Pseudothamnurgus Eggers 1912b: 115. Type-species: *Thamnurgus scrutator* Pandelle, subsequent designation by Schedl 1961k: 738. Synonymy: Schedl 1952i: 9.
References: (**tx**) Balachowsky 1949a: 172; Eggers 1912b: 115; Gardner 1934: 1–17; Peyerimhoff 1949: 300; Reitter 1913a: 84; Schedl 1952i: 9, 1958k: 142, 1961k: 738, 1962r: 94; Wichmann 1913: 116–118.

Keys: Wichmann 1913: 116–118.

References: (**hb**) Wood, S. L. 1986a:&3. (**ds**) Hagedorn 1910d: 68; Wood, S. L. 1986a: 73. (**tx**) Eggers 1920: 124, 1927: 196; Gardner 1934: 2–3, 10; Hagedorn 1909a: 733, 1910a: 89, 109–110; Hopkins 1914: 130, 133, 1915c: 226; Nunberg 1961a: 343, 1967a: 63–70; Reitter 1913a: 84, 89–90; Schedl 1939i: 382–383, 1952i: 9, 1957e: 865–883, 1958k: 142–143, 1961k: 738, 1962r: 95, 1965e: 349–379; Schreiner 1882: 246; Wichmann 1913: 116–121; Wood, S. L. 1986a: 73.

***camerunus* (Hagedorn)** 1908: 374 (*Hypaspistes*). Syntypes 2, ♂ ♀; Kamerun; MNB, Berlin.
Figures: Nunberg 1967a: 68.
Distribution: Africa (Cameroon).
Hosts: (1) Schedl 1962r: 94 (to *Tiarophorus*).
References: (**ds**) Hagedorn 1910d: 77; Kleine 1913b: 145, 1914b: 312; Schedl 1965g: 20, 1972e: 281. (**tx**) Eggers 1920: 124; Hagedorn 1908: 374, 1909a: 733, 1910a: 115; Hopkins 1914: 123, 126, 132; Nunberg 1967a: 64, 68; Schedl 1961k: 738, 1962r: 94.

***capucinus* Schedl** 1965e: 369. Holotype ♂; Ghana, Bobiri F. R.; Schedl Collection in NHMW, Wien.
Distribution: Africa (Ghana).
Hosts: *Millettia* sp.
References: (**ds**) Schedl 1965e: 369, 1972e: 282, 1979c: 52.

***decellei* Browne** 1973a: 285. Holotype ♂; Zaire: Yangambi; MRCB, Tervuren.
Distribution: Africa (Zaire).
Hosts: *Strombosia* sp.
References: (**tx**) Browne 1973a: 285.

elongatus Schreiner 1882: 247. Syntypes, sex?; Guinea ora Afric; Schedl Collection in NHMW, Wien.
Figures: Schedl 1961k: 740.
Distribution: Africa (Ghana/ Guinea).
Hosts: *Albizzia gummifera*.
References: (**hb**) Roberts 1969: 129. (**ds**) Hagedorn 1910d: 68; Kleine 1913b: 138, 1914b: 307; Schedl 1961k: 740, 1962h: 59, 1962k: 1079, 1964j: 41, 1965e: 352, 1967e: 214, 1971g: 192, 1972e: 282, 1979b: 415. (**tx**) Hagedorn 1910a: 110; Hopkins 1914: 130, 133; Schedl 1939i: 383, 1961k: 740, 1962k: 1079, 1965e: 369, 1979c: 90; Schreiner 1882: 247.

***gardneri* Schedl** 1957e: 874. Holotype, sex?; Kenya, Londiani; BMNH, London.
Distribution: Africa (Kenya).
Hosts: *Olea* sp., *Polyscias kikuyuensis*.
References: (**ds**) Schedl 1961k: 741. (**tx**) Schedl 1957e: 874, 1959q: 705, 1961k: 741, 1979c: 103.

***hyaspistis* Schedl** 1941d: 399. Holotype, sex?; Spanisch Guinea, Nkolenlangan; Schedl Collection in NHMW, Wien.
Distribution: Africa (Eqatorial Guinea).
References: (**ds**) Schedl 1964j: 41. (**tx**) Schedl 1941d: 399, 1961k: 741.

***intermedius* Schedl** 1954e: 77. Lectotype, sex?; Gold Coast, Mpraeso, Sunyani; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 127.
Distribution: Africa (Ghana).
Hosts: *Baphia pubescens*, *Cola caricifolia*, *Lonchocarpus sericeus*.

Notes: (3) Schedl 1961k: 660 (treated in *Dryocoetes*).
References: (**ds**) Schedl 1961k: 660; Thompson, G. M. 1963: 69. (**tx**) Nunberg 1961a: 344; Schedl 1954e: 50, 77–78, 1961k: 660, 1979c: 127.

***mediterraneus* (Eggers)** 1910f: 560 (*Dryocoetes*). Syntypes 1 ♂, 1 ♀; France; 1 ♂ Dodero Collection, 1 ♀ Eggers Collection, in NHMW, Wien.
Figures: Balachowsky 1949a: 168, 170, 174.
Distribution: Africa (Algeria), Europe (France).
Notes: (1) Wichmann 1913: 119 (to *Tiarophorus*). Schedl 1979c: 150 (citation of holotype invalid). (3) Balachowsky 1949a: 175 (treated in *Pseudothamnurgus*).
References: (**bv**) Grune 1979: 95. (**cn**) Grandi 1951. (**hb**) Grandi 1951; Postner 1974: 427. (**ds**) Grune 1979: 95; Kleine 1913b: 135; Postner 1974: 427; Sainte-Claire & Mequignon 1938: 446; Schaufuss 1915: 1240. (**tx**) Balachowsky 1949a: 175; Eggers 1910f: 560, 1912b: 116–117; Grune 1979: 95; Hopkins 1914: 128; Postner 1974: 427; Reitter 1913a: 89; Schedl 1934f: 1642, 1979c: 150; Teocchi 1971: 74; Wichmann 1913c: 117, 119.

***nitidicollis* (Reitter)** 1887b: 197 (*Dryocoetes*). Holotype ♀; Marokko (Casablanca vidi Wichmann 1913: 120); NHMB, Budapest.
Distribution: Africa (Morocco).
Notes: (3) Reitter 1890: 175 (treated in *Lymantor*).
References: (**ds**) Kleine 1913b: 135, 1914a: 18; Hagedorn 1910d: 64; Lovendal 1890c: 209; Reitter 1894a: 67. (**tx**) Hagedorn 1910a: 93; Lovendal 1890c: 209; Peyerimhoff 1949: 301; Reitter 1887b: 196, 1890: 175, 1894a: 67, 1913a: 89–90; Schedl 1934f: 1642, 1964m: 309; Wichmann 1913c: 120–121.

***normandi* (Eggers)** 1910e: 37 (*Thamnurgus*). Holotype ♀; Terni, provinciae algericae oraniensis loco; Normand Collection.
Distribution: Africa (Algeria/ Senegal).
Hosts: *Callotropis* sp.
References: (**ds**) Kleine 1913b: 135, 1914a: 16; Schedl 1962k: 1073. (**tx**) Balachowsky 1949a: 175; Eggers 1910e: 37, 1912b: 116–117, 1914: 40; Hagedorn 1910a: 93; Peyerimhoff 1949: 300; Reitter 1913a: 89; Schedl 1934f: 1642, 1964m: 309; Wichmann 1913c: 117–118.

elegans Wichmann 1913c: 118 (*Pseudothamnurgus*). Syntypes 2 ♂; Otay, Alger; 1 in Pic Collection, 1 in Wichmann Collection. Synonymy: Balachowsky 1949a: 175.
References: (**ds**) Kleine 1913b: 135, 1914a: 16. (**tx**) Balachowsky 1949a: 175; Eggers 1936c: 37; Peyerimhoff 1949: 300; Schedl 1934f: 1642; Wichmann 1913c: 117–118.

***praeruptus* (Eggers)** 1925: 158 (*Pseudothamnurgus*). Lectotype ♀; Tenasserim (Birma); USNM, Washington, designated by Anderson & Anderson 1971: 26.
Distribution: Asia (Burma).
References: (**tx**) Anderson, W. H. & Anderson 1971: 26; Eggers 1925: 153, 158, 1936c: 37.

***scrutator* (Pandelle)** 1883: 136 (*Thamnurgus*). Holotype, sex?; Hautes-Pyrenees, Sos, Aude; not given.
Figures: Balachowsky 1949a: 168, 174 (adult), Grune 1979: 94, Teocchi 1971: 74.
Distribution: Europe (Belgium/ France/ Spain).
Hosts: *Corylus* sp., *Malus* sp., *Ostyra* sp., *Quercus* sp.
References: (**bv**) Grune 1979: 95. (**cn**) Grandi 1951. (**ec**) Kleine 1908c: 216. (**hb**) Grandi 1951. (**ds**) Arnoldi et al. 1955: 702; Grune 1979: 95; Hagedorn 1910d: 65; Heyden, Reitter, & Weise 1891: 673; Kleine 1913b: 135, 1934a: 154; Leclercq 1971; Reitter 1894a: 67; Sainte-Claire & Mequignon 1938: 446; Schaufuss 1915: 1240; Tredl 1907: 17. (**tx**) Balachowsky 1949a: 175; Eggers 1912b: 116–117; Eichhoff 1883a: 136; Grune 1979: 94–95; Hagedorn 1910a: 93; Hoffmann 1942: 73; Pandelle 1883: 136; Portevin 1935: 332; Postner 1974: 426; Reitter 1894a: 67, 1906a: 31, 1913a: 89; Schedl 1934f: 1642, 1961k: 738; Teocchi 1971: 74; Wichmann 1913c: 117–119.

Genus *Dolurgocleptes* Schedl

DOLURGOCLEPTES SCHEDL 1965c: 61. Type-species: *Dolurgocleptes malgassicus* Schedl, monobasic.
References: (**hb**) Wood, S. L. 1986a: 73. (**ds**) Wood, S. L. 1986a: 73. (**tx**) Schedl 1965c: 61; Wood, S. L. 1986a: 73.

***malgassicus* Schedl** 1965c: 62. Holotype, sex?; Madagascar-Est, dct. Sambava, Marojejy, Andassy II, 1550 m; IRSM, Madagascar.
Distribution: Madagascar.
References: (**tx**) Schedl 1965c: 61–62, 1972d: 147, 1979c: 147.

Genus *Triotemnus* Wollaston

TRIOTEMNUS WOLLASTON 1864: 264. Type-species: *Triotemnus subretusus* Wollaston, monobasic.
Cladoctoporcus Schedl 1975e: 454. Type-species: *Cladoctoporcus scrofa* Schedl, original designation. Synonymy: Wood 1984b: 229.
References: (**tx**) Schedl 1975e: 454; Wood, S. L. 1984b: 229.
References: (**hb**) Wood, S. L. 1986a: 73. (**ds**) Wood, S. L. 1986a:&3. (**tx**) Balachowsky 1949c: 101; Eggers 1912: 116; Eichhoff 1868d: 421, 1878b: 41, 102–103; Ferrari 1867: 4, 8; Hagedorn 1908: 371, 1909b: 138, 1910a: 71, 76, 1910d: 37; Hopkins 1914: 131, 135, 1915c: 226; Peyerimhoff 1949: 300; Schedl 1934f: 1638, 1958j: 240, 1961k: 648, 1964m: 306; Wollaston 1864: 264, 1865: 245; Wood, S. L. 1986a: 73.

***aethiopicus* Eggers** 1936b: 31. Syntypes ♂♀; Abyssinia: Jem-Jem Foret, ca. 8000 feet; BMNH, London.
Distribution: Africa (Ethiopia).
Hosts: (?) *Euphorbia abyssinica*.

References: (**ds**) Schedl 1961k: 649. (**tx**) Eggers 1936b: 31; Schedl 1961k: 649, 1979c: 13.

***antoinei* Peyerimhoff** 1949: 299. Syntypes 301, sex?; Morocco: Casablanca et Zenata; MNHN, Paris.
Distribution: Africa (Morocco).
References: (**tx**) Peyerimhoff 1949: 299, 301.

***grangeri* (Peyerimhoff)** 1919: 253 (*Lymantor*). Syntypes 98, sex?; Dounia du Mazafran, North Africa; MNHN, Paris.
Figures: Balachowsky 1949c: 1–2, Peyerimhoff 1919: 253.
Distribution: Africa (Algeria).
Hosts: *Bupleurum fruticosum, B. spinosum.*
Notes: (1) Peyerimhoff 1949: 300 (to *Triotemnus*).
References: (**hb**) Peyerimhoff 1919: 253. (**ds**) Kleine 1934a: 156; Peyerimhoff 1919: 253; Schedl 1964a. (**tx**) Balachowsky 1949a; Peyerimhoff 1919: 253, 1949: 300–301; Schedl 1934f: 1642.

***lepineyi* Balachowsky** 1949c: 98. Syntypes, sex?; Tizi-N'Test (Haut Atlas), Maroc, vers 2200 m; MNHN, Paris.
Figures: Balachowsky 1949c: 98, pl. I.
Distribution: Africa (Morocco).
Hosts: *Bupleurum spinosum.*
References: (**ds**) Schedl 1971n: 350. (**tx**) Balachowsky 1949c: 98.

***longicollis* Peyerimhoff** 1925: 11. Syntypes, sex?; Morocco: Oued el-Akhdar pres Demnat; MNHN, Paris.
Figures: Peyerimhoff 1925: 11, Schedl 1961k: 648 (antenna).
Distribution: Africa (Morocco).
Hosts: *Euphorbia beaumeriana, E. euchinus, E. resinifera.*
References: (**hb**) Peyerimhoff 1926: 388. (**ds**) Kleine 1934a: 140; Peyerimhoff 1925: 11, 1926: 388; Schedl 1964a. (**tx**) Balachowsky 1949c: 102; Eggers 1936b: 31; Peyerimhoff 1925: 11, 1949: 300–302; Schedl 1934f: 1638, 1961k: 648.

***pilicornis* Wood** 1992a: 87. Holotype ♂; Chikalda, Malghat, C.P., India; Wood Collection.
Distribution: Asia (Karnataka, Madhya Pradesh, Maharashtra in India).
Hosts: *Euphorbia* spp.
References: (**tx**) Wood, S. L. 1992a: 87.

***scrofa* (Schedl)** 1975e: 454 (*Cladoctoporcus*). Holotype ♂; Madras: Andippatti Hills, 9 km a l'est d'Andippatti; MHNG, Geneve.
Distribution: Asia (Karnataka, Maharashtra, Tamil Nadu, Uttar Pradesh in India/ Sri Lanka).
Hosts: *Euphorbia antiquorum, E.* spp., rare in *Opuntia* sp.
Notes: (1) Wood 1986a: 73 (to *Triotemnus*).
References: (**tx**) Schedl 1975e: 454, 1979c: 223; Wood, S. L. 1984b: 229, 1986a: 73.

***striatus* Eggers** 1936c: 37. Holotype ♂; Natal: Malvern; BMNH, London.
Distribution: Africa (Natal in South Africa).
References: (**tx**) Eggers 1936c: 37–38; Schedl 1961k: 650.

***subretusus* Wollaston** 1864: 265. Holotype, sex?; Gomeram; BMNH, London.
Distribution: Africa (Canary Islands), Europe (Spain).
Hosts: *Euphorbia canariensis.*
References: (**en**) Souphieff & Scherbinovskaja 1937: 28. (**hb**) Peyerimhoff 1926: 388. (**ds**) Gemminger & Harold 1872; Hagedorn 1910d: 37; Kleine 1913b: 116; Lacordaire 1866: 376; Peyerimhoff 1923a: 47, 1925: 11, 1926: 388; Schedl 1964a, 1971d: 425; Schedl, Lindberg, & Lindberg 1959: 17; Souphieff & Scherbinovskaja 1937: 28; Uyttenboogaart 1937: 117. (**tx**) Balachowsky 1949c: 102; Eggers 1936b: 31; Eichhoff 1878b: 105; Hagedorn 1910a: 76; Hopkins 1914: 131; Lacordaire 1866: 376; Peyerimhoff 1923a: 47, 1949: 302; Schedl 1934f: 1638; Schedl, Lindberg, & Lindberg 1959: 17; Wollaston 1864: 265, 1865: 245.

***villiersi* Schedl** 1958j: 240. Lectotype ♀; Nigeria; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 268.
Distribution: Africa (Nigeria).
Hosts: *Euphorbia* sp.
References: (**ds**) Schedl 1961k: 650. (**tx**) Schedl 1952j: 9, 1954e: 72, 1958j: 240–241, 1961k: 650, 1979c: 268.

Genus *Thamnurgus* Eichhoff

THAMNURGUS EICHHOFF 1864: 40. Type-species: *Bostrichus euphorbiae* Kuster, subsequent designation by Hopkins 1914: 130.
Keys: Balachowsky 1949: 165, Reitter 1913: 85.
References: (**ay**) Eichhoff 1864b: 40–46; Fuchs 1912: 9–43; Lacordaire 1866: 373; Lekander 1959: 92; Nobuchi 1969a: 59; Nusslin 1911, 1912; Roepke 1919: 23–24. (**hb**) Bargmann 1906: 312; Luigioni 1929: 999; Nusslin 1906: 47–64; Wichmann 1927: 352; Wood, S. L. 1986a: 73. (**ds**) Chobaut 1897: 262; Formanek 1907: 31–32; Hagedorn 1910d: 64–65; Scheerpeltz & Winkler 1930: 258; Schimitschek 1937: 54; Wood, S. L. 1986a: 73. (**tx**) Balachowsky 1949a: 164, 1949c: 101–103; Beeson 1939: 279–308; Bertolini 1872: 201; Blandford 1893c: 11, 1894b: 261, 1896e: 143; Eggers 1933: 63; Eichhoff 1864b: 40, 1878b: 210–211, 1881a: 206; Escherich 1923: 471; Ferrari 1867a: 5, 35–36, 1867b: 114; Fuchs 1912; Hopkins 1909b: 138, 1910a: 88–93, 1914: 130, 133, 1915a: 9, 1915c: 195, 226; Karaman 1972: 103; Lepesme 1942: 268–271; Murayama 1957: 589–590, 1961: 29; Nunberg 1945: 46–47; Nusslin 1898: 281, 1912a: 268–269, 1912b: 101–107; Peyerimhoff 1925: 12, 1949: 300; Pfeffer 1962: 244, 1989a: 55; Redtenbacher 1874: 379–380; Reitter 1894: 66–67, 1906: 711, 1913a: 84–85, 1916: 296; Schedl 1938c: 456–457, 1952i: 9, 1957d: 14, 1958d: 187–188, 1961k:

663, 1962n: 697–699, 1963a: 29–32, 1969h: 95–98, 1977b: 101; Schilsky 1888: 122; Scott 1935: 281–282; Seidlitz 1891: 612; Stark 1952: 308–310; Wachtl 1876: 460; Westhoff 1882: 239; Wood, S. L. 1986a: 73.

***africanus* Eggers** 1924: 108. Lectotype, sex?; Manyema (Sibatwa Kilengwe), Congogebiet; Eggers Collection, in NHMW, Wien, designated by Schedl 1979c: 15.
Distribution: Africa (Kenya/ Uganda/ Zaire).
Hosts: *Lobelia bambuseti, L. gibberroa, L.* sp., *Veronia auriculifera*.
References: (**ec**) Schedl 1961k: 665. (**hb**) Schedl 1961k: 665. (**ds**) Mayne & Donis 1962: 314; Schedl 1961k: 665, 1963a: 30, 1971e: 4. (**tx**) Eggers 1924: 108, 1933e: 23, 1943c: 63; Nunberg 1961b: 615; Schedl 1961k: 665, 1979c: 15.

***armeniacus* Reitter** 1897c: 244. Syntypes 2, ♂♀; Kaukasus: Araxesthal bei Ordubad; NHMB, Budapest.
Distribution: Europe (W USSR).
References: (**hb**) Stark 1952: 311. (**ds**) Hagedorn 1910d: 64; Heyden, Reitter, & Weise 1906: 711; Kleine 1913b: 134; Stark 1952: 311. (**tx**) Hagedorn 1910a: 93; Pfeffer 1955a: 159; Reitter 1897c: 244, 1901b: 172, 1913a: 86; Schedl 1934f: 1641; Stark 1952: 311.

***brylinskyi* Reitter** 1889c: 40. Holotype, sex?; Araxesthal; NHMB, Budapest.
Figures: Balachowsky 1949a: 168, 174.
Distribution: Asia (Turkey), Europe (France/ W USSR).
Hosts: *Peganum parmala, Tamarix octandra*.
References: (**hb**) Lengerken 1939: 65, 1954: 85; Stark 1952: 313. (**ds**) Arnoldi et al. 1955: 702; Balachowsky 1943a; Hagedorn 1910d: 64; Heyden, Reitter, & Weise 1891: 673, 1906: 711; Kadyrov 1989; Kleine 1913b: 134, 1914b: 245, 1934a: 154; Reitter 1894a: 67; Schaufuss 1915: 1240; Stark 1952: 313. (**tx**) Balachowsky 1943a; 1949a: 169–170; Hagedorn 1910a: 93; Hoffmann 1942: 73; Iablokoff-Khnzorian 1961: 30; Pfeffer 1955a: 158; Reitter 1889c: 40, 1894a: 67, 1913a: 88; Schedl 1934f: 1641; Stark 1952: 313; Strohmeyer 1907d: 6.

***capensis* Schedl** 1977c: 396. Holotype, sex?; Sudafrika: Cape Town, Milnerton; Schedl Collection in NHMW, Wien.
Distribution: Africa (South Africa).
References: (**tx**) Schedl 1977c: 396.

***caucasicus* Reitter** 1887b: 195. Syntypes 2, sex?; Kaukasus: Kutais und Utsch-Dere; NHMB, Budapest.
Distribution: Europe (W USSR).
References: (**hb**) Stark 1952: 310. (**ds**) Hagedorn 1910d: 64; Heyden, Reitter, & Weise 1891: 673, 1906: 711; Kleine 1913b: 134, 1934a: 154; Langhoffer 1915c: 158; Reitter 1894a: 66; Stark 1952: 310. (**tx**) Endrodi 1957: 308; Fauvel 1887; Hagedorn 1910a: 93; Reitter 1887b: 195, 1894a: 66, 1913a: 86; Schedl 1934f: 1641; Stark 1952: 310.

***characiae* Rosenhauer** 1878: 162. Syntypes, sex?; Barcelona, Spain; not located.
Figures: Balachowsky 1949a: 168, 170, 174.
Distribution: Africa (Algeria), Europe (France/ Greece/ Italy/ Spain).
Hosts: *Euphorbia characias*.
References: (**cn**) Grandi 1951. (**ec**) Kleine 1908c: 216; (**hb**) Dombrowsky 1887; Eichhoff 1881a: 48; Grandi 1951. (**ds**) Barthe 1896; Correa de Barros 1907; Escalara 1919; Hagedorn 1910d: 64; Heyden, Reitter, & Weise 1883: 172, 1891: 673, 1906: 711; Kleine 1913b: 134, 1934a: 154; Krausse 1911: 67; Lokaj 1908:II; Pfeffer 1947d: 127; Pittioni 1943: 176; Ragusa 1924: 116; Reitter 1894a: 66; Sainte-Claire & Mequignon 1938: 446; Schedl 1964a, 1971d: 429; Tredl 1907: 17. (**tx**) Balachowsky 1949a: 171; Dombrowsky 1887; Eggers 1912b: 114, 1912f: 29; Eichhoff 1878b: 513, 1881a: 48, 208, 1883a: 111, 136; Hagedorn 1910a: 93; Peyerimhoff 1949: 303; Pfeffer 1955a: 159; Portevin 1935: 331; Reitter 1889c: 40, 1894a: 66, 1897c: 244, 1901b: 182, 1913a: 86; Rosenhauer 1878: 162; Schaufuss 1915: 1240; Schedl 1934f: 1641; Strohmeyer 1907d: 6.

***concavifrons* (Schedl)** 1950c: 207 (*Xylocleptes*). Holotype ♀; O. Afrika, Usambara; Schedl Collection in NHMW, Wien.
Distribution: Africa (Tanzania).
Notes: (1) Schedl 1952i: 9 (to *Thamnurgus*).
References: (**tx**) Schedl 1950c: 207, 1952i: 9, 1961k: 679, 1979c: 60.

***csikii* Endrodi** 1957b: 307. Holotype, sex?; Budapest Umgebung; NHMB, Budapest.
Distribution: Europe (Hungary).
References: (**ds**) Endrodi 1957b: 307. (**tx**) Endrodi 1957b: 307.

***cylindricus* (Eggers)** 1927a: 181 (*Xylocleptes*). Holotype ♀?; Ruanda: Karissimbi-Vulkan; MRCB, Tervuren.
Distribution: Africa (Ruanda/ Zaire).
Notes: (1) Schedl 1952i: 9 (to *Thamnurgus*).
References: (**tx**) Eggers 1927a: 181; Schedl 1952i: 9, 1961k: 680.

***delphinii* (Rosenhauer)** 1856: 302 (*Bostrichus*). Syntypes, sex?; Malaga; not located.
Figures: Balachowsky 1949a: 170, 174.
Distribution: Africa (Algeria/ Morocco/ Tunisia), Europe (France/ Greece/ Italy/ Sicily/ Spain).
Hosts: *Delphinium consolida, D.* sp., *Teucrium pseudoscorodonia*.
References: (**cn**) Grandi 1951. (**ec**) Kleine 1908c: 216. (**hb**) Dombrowsky 1887; Eichhoff 1881a: 48, 208; Grandi 1951; Lengerken 1941: 156; Peyerimhoff 1915: 60; Stark 1952: 312; Wachtl 1876a: 460. (**ds**) Bedel 1888a; Calwer 1884, 1893; Escalera 1919; Gemminger & Harold 1872: 2689; Hagedorn 1910d: 64; Heyden, Reitter, & Weise

1883: 182, 1891: 673, 1906: 711; Kleine 1913b: 134, 1914a: 16, 1934a: 154; Lacordaire 1866: 383; Lengerken 1941: 156; Lokaj 1908:II; Lucht 1987: 277; Nunberg 1964a: 235; Pfeffer 1947d: 128; Pittioni 1943: 176; Ragusa 1924: 116; Reitter 1894a: 67; Rosenhauer 1856: 302; Schaum 1859: 96, 1862: 101; Schedl 1964a, 1967c: 71, 1971d: 426, 1981b: 70; Scott 1935: 281; Stark 1927: 89, 1952: 312; Stein 1868: 114; Stein & Weise 1877: 164; Tredl 1907: 17; Wachtl 1876a: 460. (**tx**) Balachowsky 1949a: 171; Dombrowsky 1887; Eggers 1908a: 122, 1910e: 37–38, 1914: 109–110; Eichhoff 1864b: 46, 1866: 278, 1868d: 419, 1878b: 213, 1881a: 48, 208, 1883a: 111, 136; Ferrari 1867a: 36–37, 1867b: 114; Hagedorn 1910a: 93; Lacordaire 1866: 383; Lucht 1987: 277; Peyerimhoff 1915: 60, 1949: 303; Pfeffer 1955a: 158; Reitter 1887b: 195, 1889c: 40, 1894a: 67, 1901b: 182, 1913a: 88; Rosenhauer 1856: 302, 1878: 162; Schedl 1934f: 1641, 1962p: 205, 1981b: 70; Scott 1935: 281; Sokanovskii 1954: 18; Stark 1952: 312; Strohmeyer 1907d: 6. (**ms**) Eichhoff 1868d: 419.

holtzi Strohmeyer 1907d: 6. Holotype ♀; Graecia; Strohmeyer Collection. Synonymy: Reitter 1913a: 88.

References: (**ec**) Kleine 1908c: 216. (**ds**) Hagedorn 1910d: 64; Kleine 1913b: 134; Schaufuss 1915: 1240; Tredl 1907: 17. (**tx**) Eggers 1908d, 1914: 109–110; Hagedorn 1910d: 93; Reitter 1913a: 88; Schedl 1934f: 1641; Strohmeyer 1907d: 6.

***elegans* Schedl** 1957d: 64. Holotype ♀; Congo Belge: Kibali-Ituri, Irumu, galerie forestiere; MRCB, Tervuren.

Figures: Schedl 1961k: 663.

Distribution: Africa (Angola/ Tanzania/ Zaire).

Hosts: *Clematis simensis*.

References: (**ec**) Schedl 1961k: 668. (**hb**) Schedl 1961k: 668. (**ds**) Ferreira 1965: 116; Mayne & Donis 1962: 314; Schedl 1959p: 17, 1961k: 668, 1972k: 295. (**tx**) Schedl 1957d: 64, 1961k: 663, 668, 1979c: 88.

***elongatus* Schedl** 1969d: 14. Holotype, sex?; Grande Comore: Boboni; MNHN, Paris.

Distribution: Africa (Comore Island).

References: (**ds**) Schedl 1969d: 9. (**tx**) Schedl 1969d: 14, 1977b: 102.

***euphorbiae* (Kuster)** 1845: 39 (*Bostrichus*). Syntypes, sex?; Europe; not located.

Distribution: Africa (Algeria), Europe (France/ Germany/ Greece/ Italy/ Spain/ Yugoslavia).

Hosts: *Euphorbia dendroides, E. gerardiana*.

References: (**cn**) Wachtl 1901: 381. (**ec**) Kleine 1908c: 216, 1944: 79; Novak 1952: 416. (**hb**) Bach 1864; Dombrowsky 1887; Eichhoff 1881a: 48, 207; Knotek 1894a: 558; Lengerken 1941: 156, 1954: 85; Nusslin 1898: 274; Rupertsberger 1880: 230; Schroder 1896: 357; Stark 1952: 311; Wachtl 1876a: 460, 1901: 381. (**ds**) Acloque 1896; Blanchere & Robert 1889; Calwer 1884, 1893; Dieck 1870; Gemminger & Harold 1872: 2689; Gozis 1875: 80; Hagedorn 1910d: 64; Heyden, Reitter, & Weise 1883: 182, 1891: 673, 1906: 711; Holdhaus 1912: 454; Kaltenbach 1874: 523; Kestercanek 1881a: 12; Kleine 1913a: 87, 307, 1913b: 134, 1914a: 16, 1934a: 154; Knotek 1894a: 558; Krausse 1910: 171, 1911: 67; Lacordaire 1866: 382; Langhoffer 1915c: 158; Lengerken 1941: 156; Lichtenstein & Picard 1919: 62–64; Lokaj 1908:II; Lucht 1987: 277; Negru 1966b: 401; Novak, P. 1952: 416, 1964; Nusslin 1898: 274; Ortzen 1886: 280; Paganetti-Hummler 1901: 150; Perris 1876a: 256, 1877a: 416; Pittioni 1943: 176; Ragusa 1924: 116; Reitter 1894a: 66; Schaufuss 1915: 1240; Schaum 1859: 96, 1862: 101; Schedl 1967c: 68, 1971d: 429, 1981b: 70; Stark 1952: 311; Stein 1868: 114; Stein & Weise 1877: 164; Tredl 1907: 17; Wachtl 1876a: 460. (**tx**) Acloque 1896; Bach 1864; Balachowsky 1949a: 172; Bertolini 1872: Dombrowsky 1887; Eggers 1914: 109–110, 298: Eichhoff 1864b: 41, 1868d: 419, 1878b: 211, 1881a: 48, 207, 1883a: 111, 135; Fauvel 1889; Ferrari 1867a: 36, 1867b: 114; Hagedorn 1910a: 93; Hopkins 1914: 130; Jacquelin du Val & Fairmaire 1868: 107; Kuster 1845: 39; Lacordaire 1866: 382; Lucas 1920: 635; Lucht 1987: 277; Negru 1966b: 401; Perris 1877a: 416; Peyerimhoff 1949: 303; Pfeffer 1932b: 3, 1955a: 158; Reitter 1887b: 195, 1894a: 66, 1913a: 87; Rosenhauer 1878: 162; Rupertsberger 1880: 230; Schedl 1934f: 1641, 1981b: 70; Stark 1952: 311. (**ms**) Eichhoff 1868d: 419; Lucas 1920: 635.

***euryopsis* Schedl** 1955i: 218. Lectotype, sex?; Cape Prov., Grey's Pass; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 92.

Distribution: Africa (South Africa).

Hosts: *Euryops athanasiae*.

References: (**ds**) Schedl 1961k: 670. (**tx**) Schedl 1955i: 212, 218, 1961k: 670, 1979c: 92.

***granulicollis* Schedl** 1957d: 65. Holotype ♀; Congo Belge: Kivu, Mulungu; MRCB, Tervuren.

Distribution: Africa (Kenya/ Zaire).

Hosts: *Caesalpinia decapetala, Clematis simensis, Geniosporum paludosum, Kotschya africana, Loranthus* sp., *Protea* sp., *Polygonum tomentosum, Sida rhombifolia, Strombosia scheffleri, Virecta multiflora*.

References: (**ds**) Mayne & Donis 1962: 314; Schedl 1961k: 670, 1965g: 20. (**tx**) Schedl 1957d: 65, 1961k: 670, 1965g: 20, 1979c: 111.

***grossepunctatus* Schedl** 1977c: 397. Holotype, sex?; Sudwestafrika: Windhoek; Mus. Alexander Koenig, Bonn.

Distribution: Africa (Namibia).

References: (**tx**) Schedl 1977c: 397.

***interpunctatus* Schedl** 1950h: 105. Lectotype, sex?; Tananarive, Tsimbazaza; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 127.

Distribution: Madagascar.
Hosts: *Luffa tiges*, Chouchoute.
References: (**cn**) Paulian 1950b: 61. (**hb**) Paulian 1950b: 61. (**tx**) Schedl 1950h: 105–106, 1977b: 103, 1979c: 127.

***jemeniae* Schedl** 1975h: 353. Holotype, sex?; Jemen, Wadi Zabid; NHMB, Budapest.
Distribution: Asia (Yemen).
References: (**tx**) Schedl 1975h: 353.

***joliveti* Nunberg** 1973: 18. Holotype ♂; Massif Ruwenzori, Kalonge; MRCB, Tervuren.
Distribution: Africa (Zaire).
References: (**tx**) Nunberg 1973: 18.

***kaltenbachi* (Bach)** 1850: 199 (*Bostrichus*). Syntypes, sex?; [Germany?]; not given.
Figures: Balachowsky 1949a: 165, 170, 174.
Distribution: Africa (Algeria), Europe (Austria/ Belgium/ Corsica/ Czechoslovakia/ France/ Germany/ Hungary/ Italy/ Poland/ Spain/ Switzerland/ W USSR).
Hosts: *Betonica officianalis, Laurium album, Origanum vulgare, Stachys sylvatica, Teucrium scorodonia*.
References: (**ay**) Imhoff 1856: 228; Nusslin 1911a: 60, 225, 338. (**cn**) Grandi 1951; Karpinski & Strawinski 1948: 156; Kholodkovskii 1912: 278; Muller 1912: 184; Nusslin 1913: 290; Wachtl 1901: 381; Wichmann 1927b: 352. (**ec**) Kleine 1908c: 216, 1909a: 49, 1944: 81; Nusslin 1927: 350; Sedlaczek 1935a: 162; Tavares 1905: 104. (**hb**) Bach 1850, 1864; Buddenburg 1881: 394–402, 1883: 133–140; Eichhoff 1881a: 48, 209; Fuchs 1907: 38; Giraud 1867; Grandi 1951; Karpinski & Strawinski 1948: 156; Kholodkovskii 1912: 278; Lengerken 1939: 65, 1941: 156, 1954: 85; Nusslin 1898: 281, 1913: 290, 1927: 350; Rupertsberger 1880: 230; Schroder 1896: 357; Sedlaczek 1935a: 162; Wachtl 1876a: 460, 1901: 381; Wichmann 1927b: 352. (**ds**) Acloque 1896; Audras & Schaefer 1957; Bach 1850; Bau 1888; Bedel 1888b; Brakman 1966b: 205; Calwer 1884, 1893; Chapuis & Candeze 1853; Dombrowsky 1887; Eggers 1904; Endrodi 1958b; Fricken 1889: 349; Fuchs 1907: 38; Gemminger & Harold 1872: 2689; Giraud 1867; Gozis 1875: 80; Gredler 1875: 115; Hagedorn 1910d: 64; Heyden 1876: 299, 1879: 140; Heyden, Reitter, & Weise 1883: 182, 1891: 673, 1906: 711; Horion 1951; Kaltenbach 1874: 477, 481, 485, 489; Kestercanek 1881a: 12; Kleine 1912a: 268, 1913a: 35, 1913b: 134, 1934a: 154; Kraatz 1869: 59; Lacordaire 1866: 382; Langhoffer 1915c: 158; Leclercq 1971; Lengerken 1941: 156; Lokaj 1908:II; Lucht 1987: 277; Negru 1966b: 401, 1968a: 455; Nunberg 1954: 47; Nusslin 1898: 281; Perris 1876a: 255, 1877a: 415–416; Pfeffer 1989a: 56; Pittioni 1943: 176; Redtenbacher 1858: 837, 1874: 379; Reitter 1894a: 67, 1916: 297; Sainte-Claire 1914: 471; Sainte-Claire & Mequignon 1938: 446; Schaufuss 1915: 1240; Schaum 1859: 96, 1862: 101; Schedl 1971d: 426, 1980a: 21, 1981b: 70; Schilsky 1909: 188; Schmaus 1960: 32; Schroeder 1887: 138; Scott 1935: 281; Seidlitz 1891a: 566, 1891b: 612; Stein 1868: 114; Stein & Weise 1877: 164; Stierlin 1898: 445; Szulczewski 1930: 268; Tredl 1907: 17; Wachtl 1876a: 460; Westhoff 1882: 239; Wichmann 1927a: 79. (**tx**) Acloque 1896; Bach 1849b, 1850: 199, 1854, 1864; Balachowsky 1949a: 169; Bedel 1888b; Chapuis & Candeze 1853; Dombrowsky 1887; Eichhoff 1864b: 41, 1878b: 215, 1881a: 48, 209, 1883a: 111, 136; Endrodi 1957b; Fauvel 1889; Ferrari 1867a: 36–37, 1867b: 114; Fleischer 1927; Formanek 1907: 32; Fricken 1889: 349; Hagedorn 1910a: 93; Jacquelin du Val & Fairmaire 1868: 107, 112; Karpinski & Strawinski 1948: 156; Kuhnt 1913: 1054; Lacordaire 1866: 382; Lucht 1987: 277; Negru 1966b: 401; Nunberg 1954: 47; Nusslin 1911a: 255, 338, 60; Perris 1877a: 415–416; Peyerimhoff 1949: 303; Pfeffer 1932b: 22, 1955a: 158; Redtenbacher 1858: 837, 1874: 379; Reitter 1894a: 67, 1897c: 244, 1913a: 88, 1916: 297; Rosenhauer 1878: 162; Rupertsberger 1880: 230; Schedl 1934f: 1641, 1952f: 87, 1980a: 21, 1981b: 70; Scott 1935: 281; Seidlitz 1891a: 566, 1891b: 612; Stierlin 1898: 445. (**ms**) Koch 1977: 27.

declivis Reitter 1897c: 244. Syntypes 5, sex?; Teucrium; NHMB, Budapest. Synonymy: Reitter 1913a: 88.
References: (**ds**) Schilsky 1909: 188. (**tx**) Reitter 1897c: 244, 1913a: 88; Schedl 1934f: 1641.

***lobeliae* Eggers** 1933e: 23. Holotype, sex?; Uganda: Ruwenzori Mt.; BMNH, London.
Distribution: Africa (Ethiopia/ Kenya/ South Africa/ Uganda).
Hosts: *Lobelia bequaertii, L. deckeni, L. stuhlmanii, L. telekii, L. wollastonii*.
References: (**bv**) Schedl 1960f: 39, 132. (**hb**) Lengerken 1939: 65, 1954: 85. (**ds**) Browne 1975b: 395; Kleine 1934a: 154, 631; Schedl 1960f: 39, 132, 1961k: 672, 1963a: 30, 1965g: 20; Scott 1935: 241, 282. (**tx**) Eggers 1933e: 23, 1943c: 63; Schedl 1957d: 14, 1961k: 671–672, 1965g: 20, 1979c: 140; Scott 1935: 241.

latus Lepesme 1942b: 268. Holotype, sex?; Mont Kenya, Kenya; MNHN, Paris. Synonymy: Schedl 1961k: 672.
References: (**tx**) Lepesme 1942b: 268; Schedl 1957d: 14, 1961k: 671–672.

***longipilus* Schedl** 1938d: 456. Lectotype, sex?; Mt. Kilimandjaro; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 141.
Distribution: Africa (South Africa/ Tanzania).
References: (**ds**) Schedl 1938d: 456, 1965g: 20. (**tx**) Schedl 1938d: 456, 1961k: 672, 1965g: 20, 1979c: 141.

***mairei* Peyerimhoff** 1949: 302. Syntypes, sex?; Atlantem Medium imperii maroccani Atlas marocain, 1600 m; not given.

Distribution: Africa (Algeria).
Hosts: *Euphorbia megalatlantica*.
References: (**tx**) Peyerimhoff 1949: 302–303.

***mandibularis* Schedl** 1953d: 90. Lectotype ♀; Madagascar, Diego-Suarez; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 148.
Distribution: Madagascar.
References: (**tx**) Schedl 1953d: 90, 1977b: 103, 1979c: 148.

***nitellus* Schedl** 1953d: 92. Lectotype ♀; Madagascar, Diego-Suarez; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 168.
Distribution: Madagascar.
References: (**tx**) Schedl 1953d: 91–92, 1977b: 103, 1979c: 168.

***nitidulus* Schedl** 1953d: 91. Lectotype, sex?; Madagascar, Mt. d'Ambre, Foret Cote Est; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 169.
Distribution: Madagascar.
References: (**tx**) Schedl 1953d: 90–91, 1977b: 103, 1979c: 169.

***nitidus* Browne** 1980e: 773. Holotype, sex?; Zaire: Yangambi; MRCB, Tervuren.
Distribution: Africa (Zaire).
References: (**tx**) Browne 1980e: 773.

***orientalis* Schedl** 1978e: 38. Holotype, sex?; Israel: Ein Dor; Division of Entomology, Agriculture Research Organization, Ilanot, Israel.
Distribution: Asia (Israel).
Hosts: *Cotoneaster* sp.
References: (**ec**) Halperin & Holzschuh 1984: 28. (**hb**) Halperin & Holzschuh 1984: 28. (**ds**) Halperin & Holzschuh 1984: 28. (**tx**) Schedl 1978e: 38.

***pegani* Eggers** 1933f: 6. Holotype, sex?; Turkmenien (Krasnowodsk); IZL, Leningrad.
Distribution: Europe (W USSR).
References: (**hb**) Stark 1952: 313. (**ds**) Kadyrov 1989; Kleine 1934a: 154; Stark 1952: 313. (**tx**) Eggers 1933f: 6; Peyerimhoff 1949: 303; Pfeffer 1955a: 158; Schedl 1979c: 187; Sokanovskii 1954: 18; Stark 1952: 313.

***petzi* Reitter** 1901b: 182. Syntypes, sex?; Gross-Dirn in Ober-Osterreich; NHMB, Budapest.
Figures: Balachowsky 1949a: 170, 174.
Distribution: Europe (Austria/ Hungary).
Hosts: *Aconitum stoerkianum*.
References: (**ec**) Kleine 1908c: 216. (**hb**) Petz 1907: 102. (**ds**) Endrodi 1958b; Hagedorn 1910d: 64; Heyden, Reitter, & Weise 1906: 711; Horion 1935, 1951; Kleine 1913a: 35, 1913b: 134, 1934a: 154; Lokaj 1908:II; Lucht 1987: 277; Pfeffer 1989a: 55; Pittioni 1943: 176; Reitter 1903: 31, 1916: 351; Schaufuss 1915: 1240; Schedl 1980a: 21, 1981b: 69; Schilsky 1909: 188; Scott 1935: 281; Tredl 1907: 17; Wichmann 1927a: 79. (**tx**) Balachowsky 1949a: 169; Eggers 1908a: 122, 1922c; Endrodi 1957b: 307; Formanek 1907: 32; Hagedorn 1910a: 93; Lucht 1987: 277; Pfeffer 1932b: 3, 1955a: 158; Reitter 1901b: 182, 1903: 31, 1913a: 86, 1916: 351; Schedl 1934f: 1641, 1980a: 21, 1981b: 69; Scott 1935: 281.

***posticepunctatus* Eggers** 1937b: 334. Holotype ♂; Kaukasus (Araxestal); NHMB, Budapest.
Distribution: Europe (W USSR).
References: (**tx**) Eggers 1937b: 334.

***punctatissimus* Eggers** 1944b: 95. Holotype, sex?; Belgisch-Congo: Lubero; MRCB, Tervuren.
Distribution: Africa (Ruanda/ Zaire).
Hosts: *Lobelia* spp.
References: (**cn**) Mayne & Donis 1951: 334. (**ec**) Mayne & Donis 1951: 334. (**ds**) Eggers 1944b: 95; Schedl 1961k: 673. (**tx**) Eggers 1944b: 95; Schedl 1950d: 7, 1952j: 2, 1955f: 258, 1961k: 673.

***robustus* Eggers** 1908a: 122. Lectotype, sex?; Sicilia (Imera, Navurra); Eggers Collection, in NHMW, Wien, designated by Schedl 1979c: 213.
Distribution: Europe (Sicily).
References: (**ds**) Ragusa 1924: 116. (**tx**) Balachowsky 1949a: 171; Eggers 1908a: 122; Hagedorn 1910a: 93; Schedl 1934f: 1641, 1962p: 205, 1979c: 213; Sokanovskii 1954: 18.

***sardus* Eggers** 1912b: 114. Lectotype, sex?; Sadali, Sardinia; USNM, Washington, designated by Anderson & Anderson 1971: 29.
Distribution: Africa (Algeria), Europe (Sardinia).
Hosts: *Euphorbia wolfenii*.
References: (**ds**) Kleine 1913b: 134, 1934a: 154; Ragusa 1924: 116; Schedl 1964a; (**tx**) Anderson, W. H. & Anderson 1971: 29; Eggers 1912b: 114–115, 1912f: 28; Pfeffer 1955a: 159; Reitter 1913a: 87; Schedl 1934f: 1641, 1979c: 219.

***semirufus* Reitter** 1906b: 36. Holotype, sex?; Anatolien: Adalia; NHMB, Budapest.
Distribution: Asia (Turkey).
References: (**hb**) Stark 1952: 311. (**ds**) Hagedorn 1910d: 65; Kleine 1913b: 134; Stark 1952: 311. (**tx**) Hagedorn 1910a: 93; Pfeffer 1955a; Reitter 1906b: 36, 1913a: 88; Schedl 1934f: 1641; Stark 1952: 311.

***senecionis* Schedl** 1938d: 456. Lectotype ♀; Kenya Colony, Aberdare Mts.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 224.
Figures: Nunberg 1961b: 627–628, Schedl 1961k: 674.
Distribution: Africa (Kenya/ South Africa/ Uganda).
Hosts: *Lobelia gibberon, Senecio aberdaricus, S. brassicaeformis, S. elgonensis, S.* spp.
References: (**ds**) Schedl 1938d: 456, 1961k: 674, 1963a: 30, 1965g: 20. (**tx**) Eggers 1943c: 64–65; Lepesme 1942: 270; Schedl 1938d: 456, 1952k: 160, 1957d: 15, 1961k: 674, 1962h: 65, 1962k: 1075, 1962n: 698, 1979c: 224.

jeanneli Lepesme 1942b: 268. Holotype, sex?;

Mont Kenya; MNHN, Paris. Synonymy: Schedl 1961k: 674.

References: (**tx**) Lepesme 1942b: 268–269; Schedl 1952k: 160, 1961k: 674.

kinangopensis Lepesme 1942b: 270. Holotype, sex?; Monts Aberdare: Mont Kinangop; MNHN, Paris. Synonymy: Schedl 1961k: 674.

References: (**tx**) Lepesme 1942b: 270; Schedl 1957d: 15, 1961k: 674.

ugandensis Nunberg 1961: 614. Holotype ♂; Uganda (Elgon), 10–11,000 ft.; BMNH, London. Synonymy: Schedl 1961k: 674.

References: (**tx**) Nunberg 1961b: 614, 627–628; Schedl 1961k: 674, 1962h: 65.

***siculus* Eggers** 1912b: 115. Lectotype, sex?; Sicilia, insula; USNM, Washington, designated by Anderson & Anderson 1971: 30.

Distribution: Europe (Sicily).

References: (**ds**) Kleine 1913b: 134; Ragusa 1922: 129. (**tx**) Anderson, W. H. & Anderson 1971: 30; Eggers 1912b: 115, 1914: 298; Hagedorn 1910a: 109; Reitter 1913a: 87; Schedl 1934f: 1641, 1979c: 228.

***varipes* Eichhoff** 1878b: 212. Holotype, sex?; Europa (Gallia meridionalis); Hamburg Museum, lost.

Figures: Balachowsky 1949a: 170.

Distribution: Asia (Turkey), Europe (Austria/ Bulgaria/ Czechoslovakia/ France/ Greece/ Hungary/ Poland/ Romania/ Yugoslavia).

Hosts: *Euphorbia amygdaloides, E. chariacas, E. gerardiana.*

References: (**ay**) Nunberg 1928a: 140. (**cn**) Grandi 1951; Marcu 1926c: 65; Schimitschek 1937c: 53, 1955c: 86; Wachtl 1901: 381. (**ec**) Kleine 1908c: 216; Nosek 1959b: 87; Pfeffer 1928b: 7; Pfeffer & Prihoda 1950: 1; Sedlaczek 1935a: 163. (**hb**) Dombrowsky 1887; Eichhoff 1881a: 48, 207; Grandi 1951; Karpinski & Strawinski 1948: 146; Knotek 1894a: 558; Lengerken 1939: 65, 1954: 85; Marcu 1941: 403; Nosek 1959b: 87; Pfeffer 1942a: 18; Sedlaczek 1935a: 162; Stark 1952: 310; Wachtl 1901: 381; Xambeu 1895: 80. (**ds**) Acloque 1896; Audras & Schaefer 1957; Barthe 1896; Bedel 1888b; Brakman 1966b: 205; Csiki 1914; Endrodi 1958b; Fauvel 1885; Hagedorn 1910d: 65; Heyden, Reitter, & Weise 1883: 182, 1891: 673, 1906: 711; Horion 1935, 1951; Karpinski & Strawinski 1948: 156; Kleine 1913a: 35, 1913b: 134, 1934a: 154; Knotek 1892a: 37, 1894a: 558; Lokaj 1908:II; Lomnicki 1913b: 148; Lucht 1987: 277; Marcu 1926c: 65; Negru 1968a: 455; Nunberg 1928b: 88, 110, 1954: 47, 1960b: 156; Orest 1926c: 65; Pfeffer 1924b: 471, 1928b: 7, 1930b: 119, 1931b: 75, 1935: 658, 1936: 90, 1989a: 55; Pittioni 1943: 175; Reitter 1890a: 13, 1894a: 66, 1916: 296, 351; Roubal 1941: 266; Sainte-Claire & Mequignon 1938: 446; Schaufuss 1915: 1240; Schedl 1980a: 21, 1981b: 70; Scheerpeltz & Winkler 1930: 258; Schilsky 1909: 188; Scott 1935: 281; Stark 1927b: 89, 1952: 310; Stein & Weise 1877: 164; Tredl 1907: 17; Wichmann 1927a: 70–71. (**tx**) Acloque 1896; Balachowsky 1949a: 172; Bedel 1888b; Dombrowsky 1887; Eichhoff 1878a: 390, 1878b: 212, 1881a: 48, 207, 1883a: 111, 136; Endrodi 1957a: 305, 1957b; Fauvel 1885, 1887, 1889; Fleischer 1927; Formanek 1907: 32; Hagedorn 1910a: 93; Karpinski & Strawinski 1948: 156; Knotek 1892a: 37; Lucht 1987: 277; Nunberg 1928a: 140, 1954: 47; Pfeffer 1932b: 3, 21, 1942a: 18, 1955a: 159; Portevin 1935: 331; Reitter 1887b: 195, 1894a: 66, 1901b: 182, 1913a: 85, 1916: 296, 351; Rey 1892b: 30; Rosenhauer 1878: 162; Schedl 1934f: 1641, 1962p: 206, 1980a: 21, 1981b: 70; Schimitschek 1937c: 53–54, 1955c: 86; Scott 1935: 281; Stark 1952: 310.

***wittei* Eggers** 1943c: 64. Syntypes, sex?; Congostaat (Park Natl. Albert: volcan Gahinga); sommet Visoke; Muhavura; Gahinga-Sabinvo; Kabara; de Witte and Eggers Collections, Eggers syntypes in NHMW, Wien.

Distribution: Africa (Kenya/ Ruanda/ Zaire).

Hosts: *Senecio* spp.

References: (**ds**) Schedl 1961k: 675. (**tx**) Eggers 1943c: 64; Schedl 1955f: 258, 1957d: 14, 1961k: 675.

kenyae Lepesme 1942b: 269. Holotype, sex?; Kenya: Mont Kenya; MNHN, Paris. Synonymy: Schedl 1961k: 676.

References: (**tx**) Lepesme 1942b: 268–269; Schedl 1952k: 160, 1957d: 14, 1960b: 164, 1961k: 675–676.

***zukwalae* Scott** 1935: 282. Syntypes, sex?; Abyssinia: Mt. Zukwala; BMNH, London.

Distribution: Africa (Ethiopia).

Hosts: *Lobelia gibberroa.*

References: (**ds**) Schedl 1961k: 676; Scott 1935: 241. (**tx**) Eggers 1936b: 32, 1943c: 63; Schedl 1961k: 676; Scott 1935: 241, 282–283.

Genus *Taphronurgus* Reitter

TAPHRONURGUS REITTER 1913a: 84, 90. Type-species: *Thamnurgus exul* Reitter, monobasic.

References: (**hb**) Wood, S. L. 1986a: 73. (**ds**) Wood, S. L. 1986a: 73. (**tx**) Peyerimhoff 1949: 3; Pfeffer 1991: 211–214; Reitter 1913a: 84, 90; Schedl 1962r: 94; Wood, S. L. 1986a: 73.

***exul* (Reitter)** 1891b: 199 (*Thamnurgus*). Holotype, sex?; Syr-Darja-Gebiete (Ost-Turkmenien); NHMB, Budapest.

Distribution: Europe (Afghanistan/ Kazakhstan in W USSR).

Hosts: *Clematis orientalis.*

References: (**hb**) Stark 1952: 314. (**ds**) Hagedorn 1910d: 62; Heyden 1881: 177, 1893: 178, 1898: 77; Kadyrov 1989; Kleine 1913b: 132, 1914b: 246; Reitter 1894a: 87; Schaufuss 1915: 1240; Sinadsky 1958: 143; Stark 1952: 314. (**tx**) Hagedorn 1910a:

107; Heyden 1893: 178; Pfeffer 1991: 211–214; Reitter 1891b: 199, 1894a: 87, 1913a: 90; Schedl 1934f: 1642; Semenov 1903: 80; Sokanovskii 1954: 18, 1958: 39; Stark 1952: 314.

Genus *Xylocleptes* Ferrari

XYLOCLEPTES FERRARI 1867a: 37. Type-species: *Bostrichus bispinus* Duftschmidt, monobasic.

Xestips Hagedorn 1912: 353. Type-species: *Xestips marginatus* Hagedorn, monobasic. Synonymy: Schedl 1950c: 204.
References: (**tx**) Hagedorn 1912: 353; Schedl 1950c: 204, 1952i: 9, 1961k: 677, 1962r: 94.

Hylonius Nunberg 1973: 16. Type-species: *Hylonius brunneus* Nunberg, original designation. Synonymy: Wood 1986c: 267.
References: (**tx**) Nunberg 1973: 16; Wood, S. L. 1986a: 74, 1986c: 267.

Keys: Reitter 1913a: 91 for Europe.

Notes: (3) American species cited in this genus actually belong to *Dendrocranulus*.

References: (**ay**) Fuchs 1912: 14–33; Nunberg 1928: 137–173. (**hb**) Felt 1906: 460; Judeich & Nitsche 1895: 449, 451; Wood, S. L. 1986a: 74. (**ds**) Hagedorn 1910d: 62; Scheerpeltz & Winkler 1930: 258; Wichmann 1964: 67; Wood, S. L. 1986a: 74. (**tx**) Balachowsky 1949a: 187–190, 1949b: 101; Barby 1901: 80; Bedel 1888b: 399, 415; Blandford 1898b: 84, 185, 188; Chamberlin 1939: 459–461; Eichhoff 1868d: 419, 1878b: 35, 51, 216, 1881a: 210; Ferrari 1867a: 37; Hagedorn 1910a: 89, 95, 106; Hopkins 1914: 131, 1915b: 9, 42–43, 1915c: 176, 188, 195, 226; Karaman 1972: 107; Knaus 1909: 72–73; LeConte & Horn 1883: 518; Lovendal 1889: 19–20; Nunberg 1960a: 287–308; Nusslin 1911, 1912; Peyerimhoff 1949: 301; Pfeffer 1989a: 59; Reitter 1894a: 68, 86–87, 1894c: 45, 1913a: 85, 91; Schedl 1938a: 160, 1940a: 348, 1950c: 204, 1952d: 9, 1957e: 879, 1958d: 184, 1961k: 677, 681, 1962r: 94; Schimitschek 1937: 50–51, 54; Spessivtsev 1931: 88; Swaine 1909: 158–159, 1918a: 50, 129; Wood, S. L. 1961a: 41–48, 1986a: 74.

***abruptus* Nunberg** 1973: 20. Holotype ♀?; Massif Ruwenzori, Kyandolire; MRCB, Tervuren.
Distribution: Africa (Zaire).
References: (**tx**) Nunberg 1973: 20.

***abyssinicus* (Schedl)** 1965e: 364 (*Hoplitontus*). Holotype, sex?; Abyssinien; Schedl Collection in NHMW, Wien.
Distribution: Africa (Ethiopia).
Notes: (3) Holotype covered by glue, generic placement uncertain.
References: (**tx**) Schedl 1965e: 364, 1979c: 9.

***adeniae* (Schedl)** 1952d: 11 (*Dryocoetes*). Holotype ♀; Congo Belge: Mulungu; MRCB, Tervuren.
Distribution: Africa (Zaire).
Hosts: *Adenia cisampeloides, Embelia schimperi*.
Notes: (1) Wood examined some paratypes in 1983 and assigned this species to *Xylocleptes* (Wood 1983 notes p. 16).
References: (**ds**) Mayne & Donis 1962: 305; Murayama 1957c: 608; Schedl 1961k: 657. (**tx**) Murayama 1957c: 608; Schedl 1952d: 11, 1961k: 657, 1979c: 11–12.

***ater* Schedl** 1962k: 1075. Holotype, sex?; D.O.A.: Usambara; Schedl Collection in NHMW, Wien.
Distribution: Africa (Tanzania).
References: (**tx**) Schedl 1962k: 1075, 1979c: 30.

***baikiae* Schedl** 1957e: 879. Holotype ♀; Tanganyika, Minziro; BMNH, London.
Distribution: Africa (Tanzania).
Hosts: *Baikiaea eminii*.
References: (**ds**) Schedl 1961k: 679. (**tx**) Browne 1963b: 243; Schedl 1957e: 879–880, 1961k: 679, 1979c: 32.

***bicuspis* Reitter** 1887b: 196. Syntypes ♀; Syrien; NHMW, Wien.
Distribution: Asia (Syria).
References: (**ds**) Hagedorn 1910d: 62; Hariri 1971: 262; Kleine 1913b: 132; Reitter 1894a: 87; Wichmann 1964: 1–67. (**tx**) Hagedorn 1910a: 107; Reitter 1887b: 196, 1894a: 87, 1894c: 45, 1913a: 91; Schedl 1934f: 1642.

***bispinus* (Duftschmidt)** 1825: 92 (*Bostrichus*). Syntypes, sex?; Linz, Austria; not given.
Figures: Balachowsky 1949a: 184, 190, 192, Grune 1979: 92, Pfeffer 1989a:pl. 12; Postner 1974: 426 (adult).
Distribution: Africa (Algeria/ Egypt/ Libya/ Morocco/ Tunisia), Asia (Turkey/ E USSR), Europe (Austria/ Belgium/ Bulgaria/ Corsica/ Czechoslovakia/ Denmark/ England/ France/ Germany/ Greece/ Hungary/ Italy/ Netherlands/ Poland/ Romania/ Sardinia/ Spain/ W USSR/ Yugoslavia).
Hosts: *Clematis vitalba, Vitis sylvestris*.
References: (**ay**) Escherich 1923b: 487; Feytaud 1950a; Nunberg 1928a: 141; Nusslin 1911a: 60, 255, 338, 378. (**bv**) Grune 1979: 93; Klimetzek et al. 1989; Wichmann 1967. (**cn**) Chorbadzhievo 1929; Escherich 1923b: 487; Feytaud 1950a; Grandi 1951; Marcu 1926c: 65; Muller 1912: 186; Nusslin 1913: 290; Schimitschek 1937c: 54, 1955c: 86; Wachtl 1901: 381; Wichmann 1927b: 361. (**ec**) Elliot & Morley 1907; Gillanders 1906; Graham 1969: 874; Kielczewski 1976; Kleine 1908c: 215, 1909a: 49, 78; Nosek 1959a: 118, 1959b: 87; Novak 1952: 416; Nusslin 1927: 350; Perris 1853: 620, 1856a: 243; Pfeffer 1928b: 7; Rondani 1873: 139; Ruhm 1956b: 4; Sedlaczek 1935a: 157; Speyer 1937: 40; Wichmann 1967. (**hb**) Bach 1849a: 200, 1849c: 161, 1854: 129, 1864: 51; Barbey 1901: 24, 80; Buddenberg 1885: 98; Bukowsky 1930; Chorbadzhievo 1929; Dombrowsky 1887; Eichhoff 1881a: 48, 210; Escherich 1923b: 487; Everts 1903: 765; Feytaud 1950a; Fuchs 1904a, 1907: 47; Gillanders 1906, 1908; Grandi 1951; Hagedorn

1903a; Karpinski & Strawinski 1948: 156; Karsch 1883: 141; Knotek 1894a: 558; Lengerken 1939: 65, 1954: 85; Masutti 1964; Munro 1926: 67; Nordlinger 1856: 20; Nosek 1959a: 118, 1959b: 87; Nusslin 1898: 281, 1906b: 14, 1913: 290, 1927: 350; Perris 1856a: 243; Pfeffer 1942a: 18; Postner 1974: 425; Ratzeburg 1837: 155, 1839: 189; Rupertsberger 1880: 230; Schedl 1981b: 68; Sedlaczek 1935a: 157; Speyer 1937: 40; Stark 1952: 318; Tschorbadjiev 1929: 169; Wachtl 1876a: 460, 1901: 381; Wahnschaffe 1864: 396; Wichmann 1924: 15, 1927b: 361; Zocchi 1959: 103. (**ds**) Acloque 1896; Ammann & Knabl 1913; Bach 1849a, 1849c; Barthe 1896; Bau 1888; Bedel 1888b: 399, 415; Bejer-Petersen & Jorum 1977; Bielz 1887; Blanchere & Robert 1889; Borchert 1951; Brakman 1966b: 205; Brancsik 1871, 1906; Bukowsky 1930; Calwer 1884, 1893; Carpentier & Delaby 1908; Cecconi 1897; Chapuis & Candeze 1853; Chorbadzhievo 1924d, 1929; Crotch 1863; Debatisse 1945; Dejean 1821, 1825, 1837; Duftschmidt 1825: 92; Eggers 1904, 1912f; Endrodi 1958a, 1958b; Escherich 1923b: 554, 1932b; Everts 1922: 646; Favre 1890; Forster 1849: 439; Fowler 1882: 64, 1891; Fricken 1889: 348; Fuchs 1904a, 1905a, 1907: 47; Gemminger & Harold 1872: 2693; Gozis 1875: 80; Gredler 1866: 374, 1868; Grill 1895: 311; Grune 1979: 93; Guyon 1855; Hagedorn 1903a, 1910d: 162; Hansen 1939; Heinemann 1908a; Hellen 1947; Heyden 1876: 300, 1879: 140; Heyden, Reitter, & Weise 1883: 182, 1906: 712; Holdhaus 1912: 454, 1923: 115; Horion 1951; Kaltenbach 1874: 1; Karpinski & Strawinski 1948: 156; Kestercanek 1881a: 12; Kiefer et al. 1942: 529; Klefbeck & Sjoberg 1960: 230; Kleine 1912a: 262, 268, 1913a: 35, 307, 1913b: 132; Kloft & Hinks 1945: 218; Knotek 1892a: 37, 1894a: 558; Koca 1900: 116, 1905: 192; Koch 1977: 36; Koltze 1901: 153; Kozikowsky & Kuntze 1925: 21; Kraatz 1869: 59; Lacordaire 1866: 385; Langhoffer 1915c: 158; Leclercq 1971; Leder 1871: 131; Leng 1918: 211; Lentz 1857: 139; Lomnicki 1913b: 148; Lucht 1987: 277; Marcu 1926c: 65; Matthews & Fowler 1883; Meinert 1887: 70; Munro 1921: 88, 1926: 1–27; Negru 1957: 129, 1966b: 401, 1968a: 455, 1968c: 91; Negru & Rosca 1967: 141; Novak, P. 1952: 416; Nunberg 1928b: 88, 111, 1954: 66, 1960b: 157; Nusslin 1898: 281; Orest 1926c: 65; Paganetti-Hummler 1901: 150; Perris 1876a: 254, 1877a: 414; Pfeffer 1924b: 471, 1928b: 7, 1930b: 120, 1931b: 73, 1936: 90, 1947d: 129, 1989a: 60; Pittioni 1943: 175; Postner 1974: 425; Prossen 1913: 84; Ragusa 1924: 117; Rapp 1934: 733; Ratzeburg 1837: 155, 1839: 189; Redtenbacher 1858: 834, 1874: 378; Reitter 1888b: 280, 1894a: 87, 1916: 297; Revy & Siroki 1942: 82; Roubal 1941: 267; Sainte-Claire 1905: 157, 1914: 474; Sainte-Claire & Mequignon 1938: 447; Schaufuss 1915: 1241; Schaum 1859: 96, 1862: 101; Schedl 1961b: 186, 1971d: 426, 1980a: 21, 1981b: 68; Scheerpeltz & Winkler 1930: 258; Schilsky 1909: 189; Seidlitz 1872: 395, 1891a: 565, 1891b: 610; Sharp & Fowler 1893: 34; Stark 1927b: 89, 1952: 318; Stein 1868: 114; Stein & Weise 1877: 164; Stierlin 1898: 442; Stierlin & Gautard 1906: 205; Sturm 1843: 230; Swaine 1909: 159; Trappen 1935: 142; Tredl 1907: 16; Tschorbadjiev 1929: 169; Villa & Villa 1833: 26; Wachtl 1876a: 460; Welch, R. C. 1968b: 19; Westhoff 1882: 239; Wichmann 1924: 15, 1927a: 72, 1964: 2; Zocchi 1959: 103. (**tx**) Acloque 1896; Bach 1854, 1864; Balachowsky 1949a: 191; Barbey 1901: 24, 80; Bedel 1888b: 399, 415; Bertolini 1872; Brancsik 1871; Carpentier & Delaby 1908; Chapuis & Candeze 1853; Chevrolat 1838; Chorbadzhievo 1924d; Dejean 1821, 1825; Doebner 1862: 178; Dombrowsky 1887; Duftschmidt 1825: 92; Duffy 1953: 15; Eggers 1912f: 29; Eichhoff 1831: 11, 21, 1868d: 419, 1878b: 216, 1881a: 48, 210, 1883a: 111, 137; Endrodi 1957b; Escherich 1923b: 487; Everts 1903: 765, 1922: 646; Fauvel 1889; Ferrari 1867a: 38, 40, 1867b: 114; Fleischer 1905, 1927; Formanek 1907: 49; Fricken 1889: 348; Gebien 1907: 197; Gillanders 1908; Grune 1979: 92–93; Hagedorn 1910a: 107; Hopkins 1914: 131, 1915b: 43; Houlbert 1922a:pl. 1; Jacquelin du Val & Fairmaire 1868: 107; Kaline 1975; Karpinski & Strawinski 1948: 156; Knotek 1892a: 37; Kuhnt 1913: 1059; Lacordaire 1866: 383; Letzner 1891: 376; Lovendal 1889b: 54, 1898: 135; Lucas 1920: 675; Lucht 1987: 277; Negru 1966b: 401; Nordlinger 1848: 237, 1850: 77, 1856: 20; Nunberg 1928a: 141, 1954: 66; Nusslin 1911a: 60, 255, 338, 378; Perris 1877a: 414; Pfeffer 1932b: 22, 1942a: 18, 1955a: 162, 1989a:pl. 12; Portevin 1935: 332; Postner 1974: 425; Quaschik 1953: 35; Ratzeburg 1837: 155, 1839: 189; Redtenbacher 1849a: 357, 1849b: 26, 1858: 834, 1874: 378; Reitter 1894a: 87, 1894c: 45, 1913a: 91, 1916: 297; Rey 1892b: 30; Rupertsberger 1880: 230; Schedl 1934f: 1642, 1952f: 87–88, 1980a: 21, 1981b: 68; Schimitschek 1937c: 54, 1955c: 86; Schlechtendal 1879: 126; Schwarz 1886: 42; Seidlitz 1872: 395, 1891a: 565, 1891b: 610; Stark 1952: 318; Stierlin 1898: 442; Stresemann et al. 1986: 354; Swaine 1909: 159; Wachtl 1895: 9. (**ms**) Eichhoff 1868d: 419; Escherich 1932b; Heisemann 1908a; Lucas 1920: 675; Schimitschek 1930b: 407.

retusus Olivier 1795b: 10 (*Scolytus*). Syntypes, sex?; Paris, France; MNHN, Paris. Synonymy: Eichhoff 1878b: 217.

Notes: (3) This name has 30 years priority, but it is virtually unused in the literature and is ignored here in favor of the well-known junior name.

References: (**hb**) Ratzeburg 1837: 155. (**ds**) Ratzeburg 1837: 155; Schilsky 1909: 189; Stein & Weise 1877: 164; Swaine 1909: 159. (**tx**) Balachowsky 1949a: 192; Eichhoff 1878b: 217;

Eggers 1936b: 31; Letzner 1891: 376; Olivier 1795b: 10; Ratzeburg 1837: 155; Swaine 1909: 159.

***bituberculatus* Hagedorn** 1910b: 1. Holotype, sex?; Kamerun; MNB, Berlin.
Distribution: Africa (Cameroon).
References: (**ds**) Hagedorn 1910d: 62; Kleine 1913b: 132, 1914b: 311. (**tx**) Hagedorn 1910a: 107, 1910b: 1; Schedl 1961k: 679.

***biuncus* Reitter** 1894c: 45. Holotype, sex?; Dalmatien: Zara; NHMB, Budapest.
Figures: Balachowsky 1949: 184, 192.
Distribution: Africa (Algeria/ Morocco), Europe (Italy/ Spain/ Yugoslavia).
Hosts: *Clematis cirrhosa*.
References: (**bv**) Grune 1979: 93. (**cn**) Grandi 1951; Wachtl 1901: 381. (**ec**) Kleine 1908c: 214. (**hb**) Grandi 1951; Postner 1974: 425; Wachtl 1901: 381. (**ds**) Grune 1979: 93; Hagedorn 1910d: 62; Heyden, Reitter, & Weise 1906: 713; Kleine 1913a: 307, 1913b: 132, 1914a: 16; Kocher 1953: 133; Langhoffer 1915c: 158; Postner 1974: 425; Reitter 1894a: 87; Schaufuss 1915: 1241; Schedl 1971d: 432; Tredl 1907: 16; Wichmann 1964: 1–67. (**tx**) Balachowsky 1949a: 192; Grune 1979: 93; Hagedorn 1910a: 107; Postner 1974: 425; Reitter 1894a: 87, 1894c: 45, 1913a: 91; Schedl 1934f: 1642; Wachtl 1895: 9.

***brownei* Schedl** 1964m: 309. Holotype, sex?; Nigeria: Abuja; BMNH, London, automatic.
Distribution: Africa (Nigeria).
References: (**tx**) Browne 1965a: 196, 1973a: 243; Roberts 1969b: 134; Schedl 1964m: 309, 1972q: 261.
punctatus Browne 1963b: 243. Holotype, sex?; Nigeria: Abuja; BMNH, London, preoccupied by Hopkins 1915.
References: (**tx**) Browne 1963b: 243, 1973a: 287; Nunberg 1969a: 382; Schedl 1964m: 309.
immunis Nunberg 1969a: 382. Holotype, sex?; Nigeria: Abuja; BMNH, London, automatic, no status.
References: (**tx**) Browne 1973a: 287; Nunberg 1969a: 382; Schedl 1972q: 261.

***brunneus* (Nunberg)** 1973: 16 (*Hylonius*). Holotype, sex?; Massif Ruwenzori, Kalonge, Zaire; MRCB, Tervuren.
Distribution: Africa (Zaire).
Notes: (1) Wood 1986a: 74, 1986c: 267 (to *Xylocleptes*).
References: (**tx**) Nunberg 1973: 16; Wood 1986a: 74, 1986c: 267.

***camerunus* (Schedl)** 1941d: 400 (*Dendrocranulus*). Holotype, sex?; Umgeb. Kamerunberg, Misselele; Schedl Collection in NHMW, Wien.
Distribution: Africa (Cameroon/ Zaire).
References: (**tx**) Schedl 1941d: 400, 1961k: 733, 1965g: 20, 1979c: 50.

***castaneus* Browne** 1963b: 244. Holotype ♂; Ghana: Bobiri (near Kumasi); BMNH, London.
Distribution: Africa (Ghana).
References: (**tx**) Browne 1963b: 244.

***congonus* Hagedorn** 1908: 375. Holotype, sex?; Kinchassa (Waelbroek), Congo; IRSNB, Brussels.
Distribution: Africa (Zaire).
References: (**ds**) Hagedorn 1910d: 62; Kleine 1913b: 132. (**tx**) Hagedorn 1908: 375, 1910a: 107; Schedl 1961k: 680.

***cribratus* Browne** 1973a: 286. Holotype ♂; Zaire: Yangambi; MRCB, Tervuren.
Distribution: Africa (Zaire).
References: (**tx**) Browne 1973a: 286.

***densepunctatus* Schedl** 1962k: 1076. Holotype, sex?; Tanganyika; Schedl Collection in NHMW, Wien.
Distribution: Africa (Tanzania).
References: (**tx**) Schedl 1962k: 1076, 1979c: 77.

***granulipennis* Schedl** 1967e: 228. Holotype ♂; Bouenza cataract; NHMB, Budapest.
Distribution: Africa (Zaire).
References: (**tx**) Schedl 1967e: 228, 1979c: 112.

***indicus* Schedl** 1971c: 374. Holotype ♀; [Bombay], India; Schedl Collection in NHMW, Wien.
Distribution: Asia (Maharashtra in India).
References: (**tx**) Schedl 1971c: 374, 1979c: 124.

***irretitus* Browne** 1965a: 196. Holotype, sex?; Ivory Coast: Adiopodoume; RNH, Leiden.
Distribution: Africa (Ivory Coast).
References: (**tx**) Browne 1965a: 196.

***linnavuorii* Schedl** 1968b: 145. Holotype, sex?; Ethiopia, Belleta Forest; MZU, Helsinki.
Distribution: Africa (Ethiopia).
References: (**tx**) Schedl 1968b: 145, 1979c: 139.

***marginatus* (Hagedorn)** 1912: 353 (*Xestips*). Holotype ♀; Ost-Afrika; MNB, Berlin.
Figures: Nunberg 1960a: 292.
Distribution: Africa (Kenya/ Tanzania).
References: (**ds**) Kleine 1913b: 133, 1914b: 322. (**tx**) Browne 1963b: 243; Hagedorn 1912: 353; Hopkins 1914: 131; Schedl 1950c: 204, 207, 1961k: 680, 1962h: 64, 1962k: 1076.
meruensis Nunberg 1960a: 291. Holotype ♂; Tanganyika Terr.: Mt. Meru, Olkokola; MRCB, Tervuren. Synonymy: Schedl 1962h: 64, 1962k: 1076.
References: (**tx**) Nunberg 1960a: 291–292; Schedl 1962h: 64, 1962k: 1076.

***robustus* (Schedl)** 1971g: 198 (*Mimidendrulus*). Holotype ♀; Fernando Po Island; Instituto Espanol de Entomologia, Madrid.
Distribution: Africa (Fernando Po Island).
Notes: (1) Wood examined a paratype at NHMW, Wien, and transferred this species to *Xylocleptes* (Wood 1983 notes, p. 16).
References: (**tx**) Schedl 1971g: 198.

***rugulosus* (Schedl)** 1972e: 290 (*Mimidendrulus*). Holotype, sex?; Ghana: Ashanti Region, Kwadaso, 390 m; NHMB, Budapest.
Distribution: Africa (Ghana).
Notes: (1) Wood examined a paratype at NHMW, Wien and transferred this species to *Xylocleptes* (Wood 1983 notes, p. 16).
References: (**tx**) Schedl 1972e: 290, 1979c: 217.

***sidanus* (Schedl)** 1952i: 13 (*Dryocoetes*). Holotype ♀; Congo Belge: Mulungu; MRCB, Tervuren.
Distribution: Africa (Zaire).
Hosts: *Caesalpinia decapetala, Clematis simensis, Geniosporum paludosum, Loranthus* sp., *Melanthera brownii, Sida rhombifolia, Strombosia grandifolia*.
Notes: (1) Wood examined paratypes at NHMW, Wien, and transferred this species to *Xylocleptes* (Wood 1983 notes, p. 16).
References: (**ds**) Mayne & Donis 1962: 306; Murayama 1957c: 608; Schedl 1961k: 662. (**tx**) Murayama 1957c: 608; Schedl 1952i: 13, 1961k: 662, 1979c: 228.

***sparsipunctatus* (Eggers)** 1935c: 308 (*Cyrtogenius*). Holotype ♂; Congostaat (Equateur: Flandria); MRCB, Tervuren.
Distribution: Africa (Zaire).
Notes: (1) Schedl 1964m: 309 (to *Xylocleptes*).
References: (**ds**) Schedl 1964j: 41, 1964m: 309, 1965e: 352, 1971g: 194. (**tx**) Browne 1963b: 243; Eggers 1935c: 308; Schedl 1964m: 309, 1979c: 233.

***usambaricus* Schedl** 1950c: 208. Holotype, sex?; O. Afrika, Usambara; Schedl Collection in NHMW, Wien.
Figures: Schedl 1961k: 681.
Distribution: Africa (Kenya/ Tanzania/ Zaire).
Notes: (1) Schedl 1952i: 9 (treated this species in *Tiarophorus*).
References: (**ds**) Schedl 1962h: 59, 1962k: 1077. (**tx**) Nunberg 1960: 293; Schedl 1950c: 208, 1952i: 9, 1954e: 77, 1957d: 74, 1961k: 681, 1962k: 1077, 1979c: 262.

Genus *Dendrocranulus* Schedl

DENDROCRANULUS SCHEDL 1937h: 165. Type-species: *Dendrocranulus tardus* Schedl, subsequent designation by Schedl 1938a: 169.
Keys: Wood 1982b: 708.
Notes: (3) Schedl 1937h: 165 (*linearis* Eggers, nomen nudum, *volustus* Eggers, nomen nudum, synonymy?). All species in this genus breed in vines of the Cucurbitacae.
References: (**hb**) Wood, S. L. 1986a: 74. (**ds**) Wood, S. L. 1986a: 74. (**tx**) Arnett 1960: 1043, 1968: 1043; Schedl 1937h: 165, 1938a: 169, 1939h: 45–48; Wood, S. L. 1961a: 11, 1982b: 708–723, 1986a: 74.

***acutus* Wood** 1979b: 139. Holotype ♀; Rancho Grande, Pittier National Park, Aragua, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: Vine.
References: (**tx**) Wood, S. L. 1979b: 139.

***barbatus* Schedl** 1939m: 172. Lectotype ♀; Argentina, Vicente Lopez; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 34.
Distribution: South America (Argentina/ Brazil).
Hosts: *Cayaponia ficifolia*.
References: (**cn**) Costa Lima 1956. (**hb**) Bruch 1939: 203; Costa Lima 1956; Viana 1964: 124. (**ds**) Blackwelder 1947: 781; Costa Lima 1956; Viana 1964: 124. (**tx**) Bruch 1939: 203; Costa Lima 1956; Schedl 1939m: 172, 1952a: 446, 1979c: 34.

***brasiliensis* (Schedl)** 1963d: 224 (*Xylocleptes*). Holotype ♀; Brasilien: Santa Catarina, Nova Teutonia; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
Hosts: *Cedrela* sp., *Dalbergia* sp., *Morus nigra, Sapota gonocarpa*.
References: (**tx**) Schedl 1963d: 224, 1979c: 45.

***carbonarius* (Ferrari)** 1867: 41 (*Xylocleptes*). Holotype ♂; Cuba; NHMW, Wien.
Distribution: Antilles Islands (Cuba/ Jamaica), North America (Florida in USA).
References: (**ds**) Blackwelder 1947: 781; Bright 1981d: 154, 1985c: 173; Gemminger & Harold 1872: 2693; Hagedorn 1910d: 66; Kleine 1913b: 136, 1914b: 378; Leng & Mutchler 1917: 220; Wood, S. L. 1982b: 721. (**tx**) Bright 1985c: 173; Eichhoff 1878b: 296; Ferrari 1867a: 41; Hagedorn 1910a: 96; Hopkins 1915b: 43; Schedl 1938a: 169, 172; Wood, S. L. 1973c: 176, 1974d: 280, 1982b: 721.

floridensis Hopkins 1915b: 43 (*Xylocleptes*). Holotype ♀; Biscayne Bay, Florida [USA]; USNM, Washington. Synonymy: Wood 1973c: 176.
References: (**hb**) Chamberlin 1939: 460. (**ds**) Blatchley & Leng 1916: 607; Chamberlin 1939: 460; Leng 1920: 342. (**tx**) Blatchley & Leng 1916: 607; Chamberlin 1939: 460; Hopkins 1915b: 43; Wood, S. L. 1973c: 176, 1974d: 280.

anonae Hopkins 1915b: 43 (*Xylocleptes*). Holotype ♀; Florida [USA]; USNM, Washington. Synonymy: Wood 1973c: 176.
References: (**hb**) Chamberlin 1939: 460. (**ds**) Blatchley & Leng 1916: 607; Chamberlin 1939: 460; Kleine 1934a: 153; Leng 1920: 342. (**tx**) Blatchley & Leng 1916: 607; Chamberlin 1939: 460; Hopkins 1915b: 43; Wood, S. L. 1973c: 176, 1974d: 280.

***columbianus* Schedl** 1937h: 167. Holotype, sex?; Columbien; Schedl Collection in NHMW, Wien.
Distribution: South America (Colombia).
References: (**ds**) Blackwelder 1947: 781. (**tx**) Schedl 1937h: 167, 1938a: 169, 1979c: 60.

***conditus* Wood** 1974a: 23. Holotype ♂; Bumbum Forest Station, Barinas, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: Vine.
References: (**tx**) Wood, S. L. 1974a: 23.

***confinis* Wood** 1974a: 26. Holotype ♂; Volcan de Chiriqui, near Cerro Punta, Chiriqui, Panama; Wood Collection.
Distribution: North America (Panama).
Hosts: Vine.
References: (**ds**) Wood, S. L. 1982b: 718. (**tx**) Wood, S. L. 1974a: 26, 1982b: 718.

***consimilis* Wood** 1974a: 23. Holotype ♂; Los Corchos, Nayarit, Mexico; Wood Collection.
Distribution: North America (Honduras/ Nayarit in Mexico).
Hosts: *Cayaponia microdonta, Sicydum tamnifolium.*
References: (**hb**) Wood, S. L. 1982b: 711. (**ds**) Atkinson & Equihua 1985b: 236; Wood, S. L. 1982b: 711. (**tx**) Wood, S. L. 1974a: 23, 1982b: 711.

***costalimai* Schedl** 1938a: 169. Lectotype, sex?; Santos, S. P. [Sao Paulo, Brazil]; USNM, Washington, designated by Anderson & Anderson 1971: 10.
Distribution: South America (Brazil).
References: (**cn**) Costa Lima 1956. (**hb**) Costa Lima 1956. (**ds**) Blackwelder 1947: 781; Costa Lima 1956; Schedl 1966f: 85, 1970e. (**tx**) Anderson, W. H. & Anderson 1971: 10; Costa Lima 1956; Schedl 1938a: 169–170, 1979c: 66.

***costaricensis* Schedl** 1938a: 171. Holotype ♂; Turrialba, Costa Rica; Eggers Collection, in NHMW, Wien.
Distribution: North America (Costa Rica/ Honduras).
Hosts: *Cayaponia microdonta.*
References: (**ds**) Blackwelder 1947: 781; Schedl 1981b: 715; Wood, S. L. 1982b: 715. (**tx**) Schedl 1938a: 171, 1979c: 67; Wood, S. L. 1982b: 715.

***cucurbitae* (LeConte)** 1879: 519 (*Xylocleptes*). Holotype ♀; Utah [USA]; MCZ, Cambridge.
Figures: Atkinson et al. 1986: 28, 67.
Distribution: North America (Chihuahua, Mexico, Michoacan, Morelos in Mexico/ Arizona, California, S Nevada, New Mexico, S Utah in USA).
Hosts: *Cucurbita digitata, C. foetidisima, Echinocystis macrocarpa, Luffa acutangulata.*
References: (**hb**) Atkinson et al. 1986: 60; Burgos & Saucedo 1983: 97; Chamberlin 1939: 460; Lengerken 1939: 65, 1954: 85. (**ds**) Anonymous 1926c: 520; Atkinson & Equihua 1985a: 87, 1985b: 236, 1988: 88; Atkinson et al. 1986: 60; Blackwelder 1947: 778; Burgos & Saucedo 1983: 97; Chamberlin 1939: 460; Cockerell 1897: 150; Cockerell et al. 1907; Fall 1906: 202; Fall & Cockerell 1907: 217; Ferrer 1942; Hagedorn 1910d: 62; Henshaw 1882: 269; Kleine 1913b: 132, 1914b: 351, 397, 1934a: 153; Knaus 1909: 73; Leng 1920: 342; Leonard 1928: 520; Schwarz 1886: 42; Swaine 1909: 159; Wood, S. L. 1982b: 718. (**tx**) Atkinson et al. 1986: 28, 67; Chamberlin 1939: 460; Hagedorn 1910a: 107; Hopkins 1915b: 43; LeConte 1879: 519; Muskus, A. 1984: 91; Schedl 1940a: 348; Schwarz 1886: 42; Swaine 1909: 159; Wood, S. L. 1973c: 176, 1982b: 718.

californicus Hopkins 1915b: 44 (*Xylocleptes*). Holotype ♀; Pomona, California [USA]; USNM, Washington. Synonymy: Wood 1973c: 176.
References: (**hb**) Bright & Stark 1973: 73; Chamberlin 1939: 460. (**ds**) Bright & Stark 1973: 73; Chamberlin 1939: 460; Leng 1920: 342. (**tx**) Bright 1971a: 66–67; Chamberlin 1939: 460; Hopkins 1915b: 43–44; Wood, S. L. 1973c: 176.

punctatus Hopkins 1915b: 44 (*Xylocleptes*). Holotype ♀; Mesilla, New Mexico [USA]; USNM, Washington. Synonymy: Wood 1973c: 176.
References: (**hb**) Chamberlin 1939: 461. (**ds**) Chamberlin 1939: 461; Kleine 1934a: 153; Leng 1920: 342. (**tx**) Chamberlin 1939: 461; Hopkins 1915b: 43–44; Wood, S. L. 1973c: 176.

venturina Hopkins 1915b: 44 (*Xylocleptes*). Holotype ♀; Ventura Co., California [USA]; USNM, Washington. Synonymy: Wood 1973c: 176.
References: (**hb**) Chamberlin 1939: 461. (**ds**) Chamberlin 1939: 461; Kleine 1934a: 153; Leng 1920: 342. (**tx**) Bright 1971: 67; Chamberlin 1939: 461; Hopkins 1915b: 43–44; Wood, S. L. 1973c: 176.

***declivis* Schedl** 1937h: 166. Holotype ♀; Costa Rica, Turrialba; Schedl Collection in NHMW, Wien.
Distribution: North America (Costa Rica).
Hosts: *Potakowskia tacaco, Sechium edule.*
References: (**ds**) Atkinson & Equihua 1985b: 236; Blackwelder 1947: 781; Wood, S. L. 1982b: 719. (**tx**) Schedl 1937h: 166, 1938a: 169, 1979c: 76; Wood, S. L. 1982b: 719.

***diversus* Wood** 1971: 37. Holotype ♂; Puerto Viejo, Limon Prov., Costa Rica; Wood Collection.
Distribution: North America (Costa Rica/ Honduras).
Hosts: *Cayaponia microdonta,* etc.
References: (**ds**) Wood, S. L. 1982b: 722. (**tx**) Wood, S. L. 1971: 37, 1982b: 722.

***fulgidus* Wood** 1974a: 25. Holotype ♂; Volcan de Chiriqui, near Cerro Punta, Chiriqui, Panama; Wood Collection.
Distribution: North America (Panama).
Hosts: Vine.
References: (**ds**) Wood, S. L. 1982b: 716. (**tx**) Wood, S. L. 1974a: 25, 1982b: 716.

***gracilis* Wood** 1982a: 227. Holotype ♀; Km 58 on Xochimilco-Oaxtepec highway, Morelos, Mexico, 1970 m; Wood Collection.
Distribution: North America (Morelos in Mexico).
Hosts: *Sechium edulis.*
References: (**hb**) Atkinson et al. 1986: 34; Burgos & Saucedo 1983: 97. (**ds**) Atkinson & Equihua 1985b: 236; Atkinson et al. 1986: 34; Burgos & Saucedo 1983: 97. (**tx**) Wood, S. L. 1982a: 227.

***guatemalensis* (Hopkins)** 1915b: 44 (*Xylocleptes*). Holotype ♀; Panzos, Guatemala; USNM, Washington.
Distribution: Antilles Islands (Guadeloupe), North America (Honduras/ Veracruz in Mexico).

Hosts: *Cayaponia microdonta*.

References: (**hb**) Atkinson et al. 1986: 34. (**ds**) Atkinson & Equihua 1985a: 87; Atkinson et al. 1986: 34; Blackwelder 1947: 778; Bright 1985c: 173; Wood, S. L. 1982b: 720. (**tx**) Bright 1985c: 173; Hopkins 1915b: 43–44; Wood, S. L. 1976a: 348, 1982b: 720.

parallelus Schedl 1938a: 172. Holotype, sex?; Guadeloupe, Env. Trois Rivieres; Eggers Collection, in NHMW, Wien. Synonymy: Wood 1976a: 348.

References: (**ds**) Blackwelder 1947: 781; Schedl 1976a: 51. (**tx**) Anderson, W. H. & Anderson 1971: 24; Eggers 1940a: 108; Schedl 1938a: 172, 1939h: 45–46, 1979c: 185; Wood, S. L. 1976a: 348.

***knausi* (Hopkins)** 1915b: 44 (*Xylocleptes*). Holotype ♀; Ashland, Kansas [USA]; USNM, Washington.

Distribution: North America (Chihuahua in Mexico/ Kansas, Louisiana, New Mexico, Oklahoma, Texas in USA).

Hosts: *Cucurbita foetidissima, C. pepo, C.* sp.

References: (**hb**) Chamberlin 1939: 461. (**ds**) Atkinson & Equihua 1988: 80; Chamberlin 1939: 461; Leng 1920: 342; Wood, S. L. 1982b: 722. (**tx**) Chamberlin 1939: 461; Hopkins 1915b: 43–44; Schedl 1979c: 120; Wood, S. L. 1982b: 722.

***limatus* Wood** 1974a: 22. Holotype ♂; Bumbum Forest Station, Barinas, Venezuela, 150 m; Wood Collection.

Distribution: South America (Venezuela).

Hosts: Cucurbitaceae vine.

References: (**tx**) Wood, S. L. 1974a: 22.

***limbatus* (Blandford)** 1898b: 190 (*Dryocoetes*). Lectotype ♂; Volcan de Agua, 8500–10,500 ft., Guatemala; BMNH, London, designated by Wood 1982b: 721.

Distribution: North America (Guatemala).

References: (**ds**) Blackwelder 1947: 778; Hagedorn 1910d: 67; Kleine 1913b: 136, 1914b: 362; Leng & Mutchler 1917: 220; Murayama 1957c: 606; Wood, S. L. 1982b: 721. (**tx**) Blandford 1898b: 190; Hagedorn 1910a: 76; Hopkins 1915b: 43; Murayama 1957c: 606; Wood, S. L. 1982b: 721.

***limbellus* Wood** 1979b: 139. Holotype ♀; Merida, Merida, Venezuela, 5300 ft.; Wood Collection.

Distribution: South America (Venezuela).

Hosts: *Cucurbita* sp.

References: (**tx**) Wood, S. L. 1979b: 139.

***limitaris* Wood** 1979b: 140. Holotype ♀; Rancho Grande, Pittier National Park, Aragua, Venezuela; Wood Collection.

Distribution: South America (Venezuela).

Hosts: Vine.

References: (**tx**) Wood, S. L. 1979b: 140

***limus* Wood** 1971: 38. Holotype ♂; Rio Damitas in Dota Mountains, San Jose Prov., Costa Rica; Wood Collection.

Distribution: North America (Costa Rica).

Hosts: *Sechium edule*, etc.

References: (**hb**) Wood, S. L. 1982b: 712. (**ds**) Wood, S. L. 1982b: 712. (**tx**) Wood, S. L. 1971: 38, 1982b: 712.

***macilentus* (Blandford)** 1898b: 190 (*Dryocoetes*). Lectotype ♀; Jalapa, Veracruz, Mexico; BMNH, London, designated by Wood 1973c: 176.

Distribution: North America (Costa Rica/ Veracruz in Mexico).

Hosts: Vine.

References: (**ds**) Blackwelder 1947: 778; Ferrer 1942; Hagedorn 1910d: 67; Kleine 1913b: 136, 1914b: 351; Murayama 1957c: 606; Wood, S. L. 1982b: 720. (**tx**) Blandford 1898b: 190; Hagedorn 1910a: 96; Murayama 1957c: 606; Schedl 1937h: 166, 1940a: 348; Wood, S. L. 1973c: 176, 1982b: 720.

grossopunctatus Schedl 1937h: 166. Holotype, sex?; Costa Rica, [San Isidro de] Coronado; Schedl Collection in NHMW, Wien. Synonymy: Wood 1973c: 176.

References: (**ds**) Blackwelder 1947: 781. (**tx**) Schedl 1937h: 166, 1938a: 169, 1979c: 113; Wood, S. L. 1973c: 176.

***major* Schedl** 1938a: 170. Lectotype, sex?; Bolivien, Cochabamba; USNM, Washington, designated by Anderson & Anderson 1971: 19.

Distribution: South America (Bolivia).

Notes: (3) Schedl 1979c: 145 (designation of lectotype invalid).

References: (**ds**) Blackwelder 1947: 781; Schedl 1966f: 145. (**tx**) Anderson, W. H. & Anderson 1971: 19; Schedl 1938a: 170, 175, 1939m: 173, 1979c: 145.

***maurus* (Blandford)** 1898b: 191 (*Dryocoetes*). Holotype ♀; El Tumbador, San Marcos, Guatemala; BMNH, London.

Distribution: North America (Guatemala/ Honduras/ Chiapas, Veracruz in Mexico).

Hosts: *Cayaponia microdonta*.

References: (**ds**) Atkinson & Equihua 1986a: 420; Blackwelder 1947: 778; Estrada & Atkinson 1988: 206; Hagedorn 1910d: 67; Kleine 1913b: 135, 1914b: 362; Murayama 1957c: 606; Wood, S. L. 1982b: 715. (**tx**) Blandford 1898b: 191; Hagedorn 1910a: 96; Murayama 1957c: 606; Wood, S. L. 1974d: 280, 1982b: 715.

huehuetanus Schedl 1940a: 344. Lectotype ♂; Huehuetan, Tonala, Chiapas, Mexico; Schedl Collection in NHMW, Wien, designated by Wood 1974d: 280. Synonymy: Wood 1974d: 280.

References: (**ds**) Blackwelder 1947: 781; Ferrer 1942. (**tx**) Schedl 1940a: 344, 1979c: 120; Wood, S. L. 1974d: 280.

***mexicanus* Wood** 1986: 272. Holotype ♀; Naolinco, Veracruz, Mexico; Wood Collection.

Distribution: North America (Veracruz in Mexico).
Hosts: *Sechium edulis*.
References: (**tx**) Wood, S. L. 1986c: 272.

***modus* Wood** 1979b: 140. Holotype ♀; Merida, Merida, Venezuela, 1700 m; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Cucurbita* sp.
References: (**tx**) Wood, S. L. 1979b: 140.

***pilosus* Eggers** 1943a: 357. Holotype, sex?; Bolivia (Cochabamba); MNHN, Paris.
Distribution: South America (Bolivia).
References: (**tx**) Eggers 1943a: 357.

***pinguis* Wood** 1979b: 140. Holotype ♀; Bumbum Forest Station, Barnas, Venezuela, 150 m; Wood Collection.
Distribution: South America (Venezuela).
Hosts: Vine.
References: (**tx**) Wood, S. L. 1979b: 140.

***pumilus* Wood** 1971: 38. Holotype ♂; Rio Damitas in Dota Mountains, San Jose Prov., Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: Vine.
References: (**ds**) Wood, S. L. 1982b: 713. (**tx**) Wood, S. L. 1971: 38, 1982b: 713.

***reditus* Wood** 1974a: 23. Holotype ♂; 9 km S Barrancas, Barinas, Venezuela, 150 m; Wood Collection.
Distribution: South America (Venezuela).
Hosts: Cucurbitaceae vine.
References: (**tx**) Wood, S. L. 1974a: 23.

***rubripes* (Eggers)** 1943a: 358 (*Pityophthorus*). Holotype ♂; Bolivia (Cochabamba); MNHN, Paris.
Distribution: South America (Bolivia).
Notes: (1) Schedl 1951m: 73 (to *Dendrocranulus*).
References: (**tx**) Eggers 1943a: 358; Schedl 1943a: 358, 1951m: 73, 1964m: 309, 1979c: 214.

***rudis* Wood** 1974a: 26. Holotype ♂; 19 km E Carapan, Michoacan, Mexico; Wood Collection.
Distribution: North America (Durango, Michoacan in Mexico).
Hosts: Vine.
References: (**ds**) Wood, S. L. 1982b: 717. (**tx**) Wood, S. L. 1974a: 26, 1982b: 717.

***schedli* Wood** 1966b: 23. Lectotype, sex?; Costa Rica, Hamburgfarm on Rio Raventazon; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 71, automatic.
Distribution: North America (Costa Rica).
Hosts: Vine.
References: (**ds**) Wood, S. L. 1982b: 716. (**tx**) Schedl 1979c: 71; Wood, S. L. 1966b: 23, 1982b: 176.

cucurbitae Schedl 1939h: 45. Lectotype, sex?; Costa Rica, Hamburgfarm on Rio Raventazon; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 71, preoccupied by LeConte 1879.
References: (**ds**) Blackwelder 1947: 781. (**tx**) Schedl 1939h: 45, 1979c: 71; Wood, S. L. 1965: 23.

***sechii* Nunberg** 1972b: 193. Holotype ♂; Barueri, Sao Paulo, Brazil; MZUSP, Sao Paulo.
Figures: Nunberg 1972a, 1972b: 194.
Distribution: South America (Brazil).
Hosts: *Sechium edule*.
References: (**tx**) Nunberg 1972a, 1972b: 193–194.

***securus* Wood** 1974a: 25. Holotype ♂; Rio Damitas in Dota Mountains, San Jose Prov., Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: Vine.
References: (**ds**) Wood, S. L. 1982b: 715. (**tx**) Wood, S. L. 1974a: 25, 1982b: 715.

***sobrinus* Wood** 1984: 114. Holotype ♂; Veracruz, Veracruz, Mexico; Wood Collection.
Distribution: North America (Veracruz in Mexico).
Hosts: *Luffa acutangula*.
References: (**ds**) Atkinson & Equihua 1985b: 236. (**tx**) Wood, S. L. 1984: 114.

***tardulus* Wood** 1971: 37. Holotype ♂; Rio Damitas in Dota Mountains, San Jose Prov., Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: *Sechium edule*.
References: (**ds**) Atkinson et al. 1986: 62; Wood, S. L. 1982b: 712. (**tx**) Wood, S. L. 1971: 37, 1982b: 712.

***tardus* Schedl** 1937h: 165. Holotype ♀?; Costa Rica, La Caja; Schedl Collection in NHMW, Wien.
Distribution: North America (Costa Rica/Honduras).
Hosts: *Cayaponia macrodonta*.
References: (**ds**) Blackwelder 1947: 781; Wood, S. L. 1982b: 713. (**tx**) Schedl 1937h: 165, 1938a: 169, 1979c: 250; Wood, S. L. 1982b: 713.

***tayuyaensis* Schedl** 1939m: 173. Lectotype ♀; Argentina, Vicente Lopez; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 250.
Distribution: South America (Argentina/ Brazil).
Hosts: *Cayaponia ficifolia*.
References: (**cn**) Costa Lima 1956. (**hb**) Costa Lima 1956; Viana 1964: 124. (**ds**) Blackwelder 1947: 781; Costa Lima 1956; Schedl 1973d: 154; Viana 1964: 124. (**tx**) Costa Lima 1956; Schedl 1939m: 173, 1952a: 446, 1979c: 250.

***uncinatus* (Eichhoff)** 1872a: 134 (*Xylocleptes*). Holotype, sex?; Bogota; Hamburg Museum, lost.
Distribution: South America (Colombia).
Notes: (3) This species might possibly belong to *Acanthotomicus*.
References: (**ds**) Blackwelder 1947: 778; Gemminger & Harold 1872: 2693; Hagedorn 1910d: 62; Kleine 1913b: 132, 1914b: 342; Wood, S. L.

1982b: 714. (**tx**) Eichhoff 1872a: 134; Hagedorn 1910a: 107; Wood, S. L. 1982b: 714.

***vicinalis* Wood** 1974a: 24. Holotype ♂; Rio Damitas in Dota Mountains, San Jose Prov., Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: Vine.
References: (**ds**) Wood, S. L. 1982b: 717. (**tx**) Wood, S. L. 1974a: 24, 1982b: 717.

***vicinus* Wood** 1974a: 25. Holotype ♀; La Lima, Cortez, Honduras; Wood Collection.
Distribution: North America (Costa Rica/ Honduras).
Hosts: *Cayaponia microdonta, Potakowskia tacaco,* etc.
References: (**ds**) Wood, S. L. 1982b: 717. (**tx**) Wood, S. L. 1974a: 25, 1982b: 717.

***vinealis* Wood** 1974a: 24. Holotype ♂; La Lima, Cortez, Honduras; Wood Collection.
Distribution: North America (Honduras).
Hosts: *Cayaponia microdonta.*
References: (**ds**) Atkinson & Equihua 1986a: 420; Estrada & Atkinson 1988: 206; Wood, S. L. 1982b: 714. (**tx**) Wood, S. L. 1974a: 24, 1982b: 714.

Genus *Dactylotrypes* Eggers

DACTYLOTRYPES EGGERS 1927e: 37. Type-species: *Dactylotrypes uyttenboogaarti* Eggers =*Xyloterus longicollis* Wollaston, monobasic.
References: (**hb**) Wood, S. L. 1986a: 74. (**ds**) Wood, S. L. 1986a: 74. (**tx**) Balachowsky 1949a: 185; Eggers 1927e: 37; Enderlien 1929: 146–147; Schedl, Lindberg, & Lindberg 1959: 24; Wood, S. L. 1986a: 74.

***longicollis* (Wollaston)** 1864: 256 (*Xyloterus*). Holotype, sex?; Rio Palmas of Fuerteventura; BMNH, London.
Figures: Balachowsky 1949a: 186, 1963a: 1289.
Distribution: Atlantic Islands (Fuerteventura, Gran Canaria, Tenerife in Canary Islands/ Madeira), Europe (introduced into France).
Hosts: *Butia eriospatha, Chamaerops humilis, Dracsena drace, Phoenix canariensis, P. pumila, Trachycarpus excelsus.*
References: (**cn**) Anonymous 1979p. (**ds**) Anonymous 1979p; Brakman 1966b: 205; Gemminger & Harold 1872: 2682; Kleine 1913b: 169, 1914a: 20; Schedl, Lindberg, & Lindberg 1959: 23. (**tx**) Ferrari 1867a: 10; Schedl, Lindberg, & Lindberg 1959: 23–24; Wollaston 1864: 256, 1865: 238.

uyttenboogaarti Eggers 1927e: 38. Lectotype ♀; Gran Canaria; USNM, Washington, designated by Anderson & Anderson 1971: 35. Synonymy: Schedl et al. 1959: 23.
References: (**cn**) Anonymous 1960u: 1105; Enderlien 1929; Grandi 1951; Herfs 1950: 6; Mumford 1960: 23, 1962: 22; Sampo & Olmi 1975. (**ec**) Perrot 1955: 64; Wichmann 1955a: 103. (**hb**) Grandi 1951; Sampo & Olmi 1975; Uyttenboogaart 1927: 40–42. (**ds**) Anonymous 1960u: 1105; Balachowsky 1963a: 1288; Jansson 1940: 63; Kleine 1934a: 157; Lepesme et al. 1948: 642; Lundblad 1958: 489; Mumford 1960: 23, 1962: 22; Palacios 1973; Perrot 1955: 64; Uyttenboogaart 1937: 113–117, 1946: 80; Wichmann 1955a: 103. (**tx**) Anderson, W. H. & Anderson 1971: 35; Balachowsky 1949a: 185, 1963a: 1289; Eggers 1927e: 38; Enderlien 1929: 147; Schedl 1934f: 1643, 1960b: 162, 1979c: 263; Schedl, Lindberg, & Lindberg 1959: 24.

draconis Enderlein 1929: 148. Syntypes, sex?; Tenerife, Icod.; not located. Synonymy: Schedl, Lindberg, & Lindberg 1959: 24.
References: (**cn**) Grandi 1951; Souphieff & Scherbinovskaja 1937: 26. (**hb**) Enderlein 1929: 148; Grandi 1951. (**ds**) Kleine 1934a: 157; Souphieff & Scherbinovskaja 1937: 26. (**tx**) Enderlein 1929: 148; Schedl 1934f: 1643–1644; Schedl, Lindberg, & Lindberg 1959: 24.

Genus *Lymantor* Lovendal

LYMANTOR LOVENDAL 1889: 25, 68. Type-species: *Lymantor sepicola* Lovendal =*Tomicus coryli* Perris, monobasic.
Keys: Reitter 1913a: 91 for Europe, Wood 1982b: 707 for North America.
References: (**hb**) Wood, S. L. 1986a: 74. (**ds**) Wood, S. L. 1982b: 706, 1986a: 74. (**tx**) Arnett 1960: 1044, 1968: 1044; Balachowsky 1949a: 189; Blackman 1922b: 78, 121; Chamberlin 1939: 468–469; Dodge 1938: 19; Hopkins 1915b: 8; Karaman 1972: 109; Lovendal 1889: 25, 68; Nusslin 1912: 99–107; Peyerimhoff 1949: 301; Pfeffer 1989a: 58; Reitter 1890: 175, 1913a: 85; Schedl 1938a: 169, 1964m: 306; Scheerpeltz & Winkler 1930: 258; Spessivtsev 1922: 473; Vinogradov-Nikitin & Zaitzev 1926: 257–293; Wood, S. L. 1982b: 706, 1986a: 74.

***aceris* (Lindemann)** 1875: 140 (*Dryocoetes*). Syntypes 2 ♂; Moskau; not given.
Distribution: Europe (Czechoslovakia/ France/ Germany/ Hungary/ Poland/ W USSR).
Hosts: *Acer campestre, A. platanoides, A. pseudoplatanus, A. tataricum, Corylus avellana, Prunus padus.*
Notes: (1) Reitter 1890: 175 (to *Lymantor*). (3) Stark 1936: 153 (aberration described as var. *schablioviskii*, no status).
References: (**ay**) Lekander 1959b: 36; Nunberg 1928a: 141; Nusslin 1911a: 60, 255, 1912b: 99. (**bv**) Grune 1979: 97. (**cn**) Koppen 1882: 260; Nusslin 1913: 290; Rhumbler 1922: 311, 1927: 350; Wachtl 1901: 381–382; Wichmann 1927b: 353. (**ec**) Kleine 1908c: 217; Nosek 1959b: 87; Nusslin 1927: 350; Pfeffer & Prihoda 1950: 6; Sedlaczek 1935a: 162. (**hb**) Barbey 1901: 27, 103; Dombrowsky 1887, 1888; Eichhoff 1881a: 52, 266; Henschel 1895a: 188; Karpinski & Strawinski 1948: 156; Kurenzov 1935a: 36, 1948b: 121; Lekander 1959b: 36;

Lengerken 1954: 85; Lindemann 1875a: 140, 1881a: 238; Nosek 1959b: 87; Nunberg 1927b: 69; Nusslin 1913: 290, 1927: 350; Pfeffer 1942a: 18; Postner 1974: 427; Rhumbler 1922: 331, 1927: 350; Rupertsberger 1879: 231, 1880: 232; Sedlaczek 1935a: 162; Spessivtsev 1913a: 94; Stark 1926a: 334, 1952: 316; Wachtl 1901: 381; Wichmann 1927b: 353. (**ds**) Endrodi 1958b; Escherich 1932b; Grune 1979: 97; Hagedorn 1910d: 65; Henschel 1895a: 188; Heyden, Reitter, & Weise 1883: 182, 1891: 673, 1906: 713; Horion 1951; Karpinski & Strawinski 1948: 156; Kleine 1912a: 305, 1913a: 36, 1913b: 135, 1934a: 155; Kolbe, W. 1916: 257; Koppen 1882: 260; Kraatz 1876c: 107; Krivolutskaya 1983; Kurenzov 1935a: 36, 1936a: 110, 1936b: 350, 1938a: 59; Lindemann 1884b: 264; Lomnicki 1913b: 148; Lovendal 1890c: 207; Lucht 1987: 277; Nunberg 1928b: 88, 111, 1954: 65; Pfeffer 1931b: 74, 1989a: 59; Pittioni 1943: 176; Postner 1974: 427; Reitter 1894a: 88, 1897a: 78, 1916: 297; Roubal 1941: 266; Schaufuss 1915: 1241; Schilsky 1909: 189; Seidlitz 1891b: 612; Sokanovskii 1960; Stark 1926a: 334, 1952: 316; Stein & Weise 1877: 165; Tredl 1907: 18; Wichmann 1927a: 79; Yanovskii & Tegshzhargal 1985: 409. (**tx**) Balachowsky 1949a: 189; Barbey 1901: 27, 103; Dombrowsky 1887, 1888; Eggers 1910f, 1942c: 28; Eichhoff 1878b: 294, 1881a: 52, 266, 1883a: 115, 140; Endrodi 1957a: 307, 1957b; Fleischer 1927; Formanek 1907: 50; Gebien 1907: 197; Grune 1979: 97; Hagedorn 1910a: 96; Henschel 1895a: 188; Karpinski & Strawinski 1948: 156; Kuhnt 1913: 1059; Kurenzov 1941a: 165, 1948b: 121; Lekander 1959b: 36; Lindemann 1875a: 140, 1881a: 238; Lovendal 1890e: 207; Lucht 1987: 277; Nunberg 1927b: 69–74, 1928a: 141, 1954: 65; Nusslin 1911a: 255, 60, 1912: 99; Peyerimhoff 1919: 254; Pfeffer 1932b: 22, 1942a: 18, 1944a: 131, 1955a: 161; Postner 1974: 427; Reitter 1890: 175, 1894a: 88, 1913a: 91, 1916: 297; Rhumbler 1922: 331, 1927: 350; Rupertsberger 1879: 231, 1880: 232; Schedl 1934f: 1642; Seidlitz 1891b: 612; Sokanovskii 1954: 18, 1960: 677; Spessivtsev 1913a: 92, 94, 1922a: 474, 1931: 54; Stark 1935: 153, 1936: 153, 1952: 316. (**ms**) Escherich 1932b; Kraatz 1876c: 107; Pfeffer 1944a: 131.

***alaskanus* Wood** 1978b: 399. Holotype ♂; Bonanza Creek, 30 miles SW Fairbanks, Alaska; Wood Collection.

Distribution: North America (Alaska).

Hosts: Presumably *Salix* sp.

References: (**ds**) Wood, S. L. 1982b: 707. (**tx**) Wood, S. L. 1978b: 399, 1982b: 707.

***coryli* (Perris)** 1855: 78 (*Tomicus*). Syntypes, sex?; Dept. Landes, France; MNHN, Paris.

Figures: Grune 1979: 96, Postner 1974: 426 (adult).

Distribution: Asia (Turkey), Europe (Austria/ Belgium/ Bulgaria/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Hungary/ Italy/ Norway/ Poland/ Spain/ Sweden/ W USSR/ Yugoslavia).

Hosts: *Acer campestre, A. platanoides, Carpinus betulus, Corylus avellana, Prunus padus, Pyrus malus, Quercus* sp., *Rhamnus cathartica, R. frangula, Syringa vulgaris.*

References: (**ay**) Nusslin 1911a: 338, 60, 89, 1912b: 99. (**bv**) Grune 1979: 97. (**cn**) Alkan 1959b: 197; Berlese 1915; Grandi 1951; Kleine 1932a: 302; Kontkanen 1932: 63; Kurenzov 1935c: 189; Nusslin 1913: 290; Rhumbler 1922: 331; Schimitschek 1955a: 141; Wachtl 1901: 381; Wichmann 1927b: 353. (**ec**) Ehnstrom 1983; Fuller 1958: 99; Kleine 1908c: 217; Kurenzov 1934a: 50; Michalski & Ratajczak 1989; Nosek 1954: 214, 1959a: 118, 1959b: 87; Nusslin 1927: 350; Pfeffer & Prihoda 1950: 4; Rybinski 1897: 61; Saalas 1930: 118; Scheerpeltz & Hofler 1948: 281; Schimitschek 1955a: 146; Sedlaczek 1935a: 162. (**hb**) Alkan 1959b; Altum 1881c: 322; Barbey 1901: 27, 103; Beffa 1961; Berlese 1915; Bukowsky 1930; Dombrowsky 1887, 1888; Ehnstrom 1983; Eichhoff 1881a: 52, 265; Grandi 1951; Hagedorn 1903a; Henschel 1895a: 188; Karpinski 1933b: 30; Karpinski & Strawinski 1948: 156; Kleine 1932a: 302; Knotek 1894a: 559; Lengerken 1939: 64, 1954: 85; Lindemann 1875a: 141, 1881a: 238; Munro 1926: 70; Nosek 1959a: 118, 1959b: 87; Nunberg 1927b: 29; Nusslin 1898: 275, 1913: 290, 1927: 350; Palm 1954a: 184, 1954b: 28; Pfeffer 1942a: 18, 1989a: 59; Postner 1974: 427; Rhumbler 1922: 331, 1927: 350; Rupertsberger 1880: 231; Schimitschek 1955a: 146; Sedlaczek 1935a: 162; Simmel 1919b: 104; Spessivtsev 1913a: 94; Stark 1926a: 335, 1952: 315; Taschenberg 1901: 109; Wachtl 1876a: 460, 1901: 381; Wichmann 1927b: 353. (**ds**) Acloque 1896; Bangsholt 1975: 95; Barthe 1896; Bedel 1888b; Bejer-Petersen & Jorum 1977: 22; Borchert 1951; Brakman 1966b: 205; Bukowsky 1930; Calwer 1884, 1893; Eder 1934; Endrodi 1958b; Escalera 1919; Escherich 1932b; Fowler 1891; Fuchs 1905a; Gemminger & Harold 1872: 2687; Gozis 1875: 180; Grill 1895: 312; Grune 1979: 97; Hagedorn 1903a, 1910d: 66; Hansen, V. 1939, 1956, 1964: 230; Hellen 1947; Henschel 1895a: 188; Heyden 1876: 301, 1879: 140; Heyden, Reitter, & Weise 1883: 182, 1891: 673, 1906: 713; Horion 1951; Jazentkovsky 1912: 292; Karpinski 1933b: 30, 1948b: 231; Karpinski & Strawinski 1948: 156; Karppinen 1964: 461; Keler 1925b: 275; Kersten 1933: 70, 75; Kestercanek 1881a: 12; Klefbeck & Sjoberg 1960: 230; Kleine 1912a: 268, 1913a: 36, 1913b: 135, 1932a: 302, 1934a: 155; Kloft & Hinks 1945: 218; Knotek 1892a: 38, 1894a: 559; Koltze 1901: 154; Kontkanen 1932: 63; Kozikowsky 1921: 181; Kraatz 1869: 59; Kurenzov 1934a: 50, 1935c: 189; Lacordaire 1866: 382; Langhoffer 1915b: 158; Leclercq 1971; Lindemann 1884b: 264; Linder 1953: 71; Lomnicki 1913b: 148; Lovendal 1889a: 271, 1890c:

206; Lucht 1987: 277; Lundberg 1988; Marivea 1961: 141; Matthews & Fowler 1883: 42; Munster 1928: 291; Negru 1966b: 401; Nosek 1934: 226–230, 1954: 214; Nunberg 1928b: 88, 111, 1954: 65, 1960b: 157; Nusslin 1898: 275; Palm 1954b: 28, 1959: 32, 60; Perris 1876a: 256, 1877a: 416; Pfeffer 1924b: 471, 1930b: 119, 1931b: 74, 1936: 90, 1989a: 59; Pfeffer & Prihoda 1950: 115–126; Pittioni 1943: 176; Postner 1974: 427; Rapp 1934: 735; Redtenbacher 1874: 381; Reitter 1888b: 280, 1894a: 88, 1916: 297; Rinne 1961; Roubal 1941: 266; Saalas 1930: 118, 1931: 67; Sahlberg 1900: 106; Sainte-Claire & Mequignon 1938: 446; Schaufuss 1915: 1240; Schaum 1859: 96, 1862: 101; Schedl 1971d: 432, 1980a: 21; Scheerpeltz & Winkler 1930: 258; Schilsky 1891: 157, 1909: 189; Seidlitz 1891a: 567, 1891b: 612; Sharp & Fowler 1893: 34; Sokanovskii 1960; Stark 1926a: 335, 1926b: 103, 1926j: 126, 1927b: 89; 1931d: 547, 1952: 315; Stein 1868: 114; Stein & Weise 1877: 165; Strauch 1861: 122; Tredl 1907: 18; Wachtl 1876a: 460; West 1938: 184; Westhoff 1882: 240; Wichmann 1927a: 71–72; Zinovjev 1955: 187. (**tx**) Acloque 1896; Balachowsky 1949a: 189; Barbey 1901: 27, 103; Bedel 1888b; Beffa 1961; Dombrowsky 1887, 1888; Eggers 1910f, 1942c: 28; Eichhoff 1864a: 401, 1864b: 41, 1868d: 419, 1878b: 292, 1881a: 52, 265, 1883a: 115, 140; Endrodi 1957b; Fauvel 1889; Ferrari 1867a: 28, 1867b: 114; Fleischer 1927; Formanek 1907: 50; Gebien 1907: 197; Grune 1979: 96–97; Hagedorn 1910a: 96; Hansen, V. 1956, 1964: 461; Henschel 1895a: 188; Hopkins 1915b: 43; Karpinski & Strawinski 1948: 156; Knotek 1892a: 38; Kuhnt 1913: 1059; Lacordaire 1866: 382; Lindemann 1875a: 141, 1881a: 238; Lovendal 1890c: 206, 1898: 180; Lucht 1987: 277; Lundberg 1988; Negru 1966b: 401; Nunberg 1927b: 29, 1954: 65; Nusslin 1911a: 60, 89, 338, 1912b: 99; Perris 1855: 78; Peyerimhoff 1919: 253; Pfeffer 1932b: 22, 1942a: 18, 1955a: 160; Portevin 1935: 332; Postner 1974: 427; Redtenbacher 1874: 381; Reitter 1887b: 197, 1889d: 271, 1890: 175, 1894a: 88, 1913a: 91, 1916: 297; Rhumbler 1922: 331, 1927: 350; Rupertsberger 1880: 231; Saalas 1914: 304–306; Schedl 1934f: 1642, 1980a: 21; Seidlitz 1891a: 567, 1891b: 612; Sokanovskii 1960: 675; Spessivtsev 1913a: 94, 1922a: 474, 1931: 53; Stark 1952: 315; Stresemann et al. 1986: 352; Taschenberg 1901: 109. (**ms**) Eichhoff 1868d: 419; Escherich 1932b; Koch 1977: 27; Reitter 1889d: 271; Rhumbler 1927: 350; Schimitschek 1930b: 407.

sepicola Lovendal 1889b: 25, 69. Syntypes, sex?; Denmark; not located. Synonymy: Reitter 1890: 175.

References: (**ds**) Lovendal 1889a: 171, 1890c: 207. (**tx**) Hopkins 1914: 124; Lovendal 1889a: 171, 1889b: 25, 69, 1890c: 207; Nusslin 1912: 99; Reitter 1889d: 271, 1890: 175. (**ms**) Reitter 1889d: 271.

***decipiens* (LeConte)** 1878: 624 (*Xylocleptes*). Holotype ♀; Detroit, Michigan; MCZ, Cambridge.

Figures: Bright 1976d: 203, 211 (adult), Hopkins 1915c:pl. 2, fig. 25 (antenna).

Distribution: North America (Ontario, Quebec in Canada/ Iowa, Kansas, Kentucky, Maine, Massachusetts, Michigan, Minnesota, Mississippi, New Jersey, New York, Pennsylvania, Virginia, West Virginia in USA).

Hosts: *Acer rubrum, A. saccharinum, A.* sp., *Hamamelis virginiana, Rhus typhina, Salix* sp.

References: (**cn**) Baker, W. L. 1972: 254; Blackman 1950; Doane et al. 1936; Lindquist, O. H. & Syme 1981: 66; Swaine 1918a: 133. (**ec**) Deyrup 1981a; Felt 1906: 460, 715. (**hb**) Baker, W. L. 1972: 254; Beal & Massey 1945: 161; Blackman 1922b: 120, 1950; Bright 1976d: 123; Chamberlin 1939: 469; Chittenden 1893a: 394; Deyrup & Atkinson 1987a: 65; Doane et al. 1936; Drooz 1985: 361; Felt 1906: 460; Swaine 1918a: 133; Wood, S. L. 1982b: 707. (**ds**) Anonymous 1926c: 520; Atkinson et al. 1991: 159; Beal & Massey 1945: 161; Beaulne 1941, 1956; Blackman 1922b: 120, 1950; Blatchley & Leng 1916: 608; Bright 1976d: 123; Chamberlin 1939: 469; Deyrup 1981b: 6; Deyrup & Atkinson 1987a: 65; Dodge 1938: 16, 56; Drooz 1985: 361; Hagedorn 1910d: 63; Henshaw 1882: 269, 1885: 148; Hubbard & Schwarz 1878a: 666, 1878b: 624; Kleine 1913b: 132, 1914b: 394, 1934a: 153; Knull 1932: 67; Leng 1920: 342; Leonard 1928: 520; Lindquist, O. H. & Syme 1981: 66; Lintner 1896: 270; Schwarz 1886: 42; Swaine 1909: 159; Ulke 1902: 56; Weber, B. C. & McPherson 1991: 46; Wood, S. L. 1982b: 707. (**tx**) Beal & Massey 1945: 161; Blackman 1922b: 120; Blatchley & Leng 1916: 608; Bright 1976d: 123, 203, 211; Chamberlin 1939: 469; Dodge 1938: 16, 56; Hagedorn 1910a: 107; Hopkins 1915b: 8, fig. 25; LeConte 1878: 624; Lindquist, O. H. & Syme 1981: 66; Schwarz 1886: 42; Swaine 1909: 159, 1918a: 133; Wood, S. L. 1982b: 707–708.

***kabei* Murayama** 1955: 87, 91. Syntypes 5 ♂, 10 ♀; Shiraito, Kumamoto pref., Japan; Murayama Collection in USNM, Washington.

Distribution: Asia (Japan).

Hosts: *Rhus silvestris.*

References: (**ds**) Murayama 1955: 87, 91. (**tx**) Murayama 1955: 87, 91.

Genus *Taphrorychus* Eichhoff

TAPHRORYCHUS EICHHOFF 1878: 49, 204. Type-species: *Bostrichus bicolor* Herbst, subsequent designation by Hopkins 1914: 130.

Saliciphilus Sokanovskii 1954: 17, 20. Type-species: *Hypothenemus machnovskii* Sokanovskii, original designation. Synonymy: Wood 1984: 228.

References: (**tx**) Schedl 1964m: 308; Sokanovskii 1954: 17, 20.

Pseudopoecilips Murayama 1957c: 614. Type-species: *Pseudopoecilips mikuniyamensis* Murayama, original designation. Synonymy: Wood 1983a: 650.

References: (**tx**) Murayama 1957c: 614; Schedl 1962p: 205; Wood 1983a: 650.

Taphroterus Schedl 1965a: 341. Type-species: *Taphroterus primitus* Schedl, monobasic. Synonymy: Wood 1984b: 228.

References: (**tx**) Schedl 1965a: 341; Wood, S. L. 1984b: 228.

Taphrocoetss Pfeffer 1987: 22. Type-species: *Taphrorychus hirtellus* Eichhoff, original designation. Synonymy: Wood 1992:(in press).

References: (**tx**) Pfeffer 1987: 22; Wood, S. L. 1992:(in press).

Keys: Balachowsky 1949a: 193, Pfeffer 1962: 241, Reitter 1913a: 94.

References: (**hb**) Wood, S. L. 1986a: 74. (**ds**) Wood, S. L. 1986a: 74. (**tx**) Balachowsky 1949a: 193; Choo 1983: 79; Eichhoff 1878b: 49, 204; Hopkins 1914: 130–132, 1915b: 9; Karaman 1972: 133; Niisima 1917: 11; Pfeffer 1962: 254, 1985b; Reitter 1913a: 92, 94–97; Schedl 1938a: 158, 1947a: 43, 1964p: 308; Scheerpeltz & Winkler 1930: 258; Schimitschek 1937: 50–51; Sokanovskii 1954: 18, 21; Spessivtsev 1931: 39; Wood, S. L. 1986a: 74.

***alni* Pfeffer** 1940a: 53. Syntypes ♂ ♀; France: Agay (Gallia merid.), Campo Doro ad urbem Ajaccio (Corsica); Pfeffer Collection.

Distribution: Europe (Corsica/ France).

Hosts: *Alnus glutinosa*.

References: (**bv**) Grune 1979: 127. (**ds**) Grune 1979: 127; Lucht 1987: 277; Pfeffer 1947d: 126–127, 1962: 245; Postner 1974: 440. (**tx**) Balachowsky 1949a: 196; Grune 1979: 127; Lucht 1987: 277; Pfeffer 1940a: 53–54, 1955a: 204, 1962: 242, 245; Postner 1974: 440.

***betulae* Schedl** 1974a: 87. Holotype ♂; Pakistan, Jabba (Swat); Commonwealth Institute of Biological Control, Substation, Rawalpindi.

Distribution: Asia (Pakistan).

Hosts: *Betula* sp.

References: (**tx**) Schedl 1974a: 87, 1979c: 37.

***bicolor* (Herbst)** 1793: 116 (*Bostrichus*). Syntypes, sex?; Wien, Austria; not located.

Figures: Grune 1979: 126, Pfeffer 1989a:pl. 13, Postner 1974: 439, Reisch 1966b: 175.

Distribution: Asia (Turkey), Europe (Austria/ Belgium/ Bulgaria/ Corsica/ Czechoslovakia/ Denmark/ England/ France/ Germany/ Hungary/ Italy/ Netherlands/ Norway/ Poland/ Romania/ Sicily/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia).

Hosts: *Fagus orientalis, F. silvatica*.

Notes: (3) Ferrari 1867: 28 (aberration named as var. *Dryocoetes tristiculus*, no status).

References: (**ay**) Escherich 1923b: 483, 510; Feytaud 1950a; Nusslin 1911a: 60, 254, 338; Sedlaczek 1902b: 244. (**bv**) Grune 1979: 127; Kohnle et al. 1987; Tragardh 1930b: 103. (**cn**) Barbey 1925: 510; Chorbadzhievo 1929; Eckstein 1926: 579; Escherich 1923b: 483, 510; Feytaud 1950a; Grandi 1951; Herlein 1878; Kobakhidze 1960: 1853; Kovacevic 1957: 69; Marcu 1926c: 65; Nosek 1951: 107, 1952b: 96; Nusslin 1913: 283; Pierce, W. D. 1917: 40; Reisch 1966a, 1966b; Rhumbler 1922: 326, 1927: 342; Schimitschek 1937c: 55, 1944: 184, 1952c: 60, 1955a: 139, 1955c: 87; Schonherr & Kraurwurst 1979; Schwerdtfeger 1944a: 174, 1957a: 182; Tomic 1957: 207–210; Trappen 1935: 142; Wachtl 1901: 381; Weber 1926: 579; Wichmann 1927b: 361. (**ec**) Adeli 1964; Apel 1983; Baert & Maelfait 1977; Balazy & Michalski 1964b; Balazy et al. 1977; Belanowskii 1930; Devdariani 1973; Donisthorpe 1924; Elliot & Morley 1907; Fleischer 1911; Gyorfi 1941b, 1952b; Heqvist 1963: 153; Jamnicky 1957b: 20; Kangas 1946b: 41; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1980a, 1980b, 1983; Kielczewski & Wisniewski 1978; Kleine 1908c: 214, 1909a: 49, 77, 1944: 73; Kobakhidze 1960; Meyer 1918: 178; Michalski & Ratajczak 1989; Nosek 1951: 107, 1952b: 96; Novak, P. 1952: 416; Nunberg 1930: 202; Nusslin 1927: 342; Perris 1862: 189; Pfeffer 1923a: 332, 1928b: 9; Ratzeburg 1869a: 176; Reiche 1966; Rondani 1873: 139, 1876: 62; Roubal 1934b: 178; Ruhm 1956b: 4; Schimitschek 1930a: 326, 1955a: 139; Schonherr & Krautwurst 1979; Schwerdtfeger 1944a: 174, 1957a: 182; Sedlaczek 1935a: 162; Thompson, W. R. 1943: 114; Tudor 1969: 34; Wichmann 1957c: 66. (**hb**) Adeli 1964; Altum 1881c: 309; Apel 1983; Barbey 1901: 24, 79, 1925: 510; Budge 1949; Chorbadzhievo 1929; Dombrowsky 1887, 1892; Eckstein 1889, 1926: 579; Eichhoff 1881a: 47, 203; Escherich 1923b: 483, 510; Feytaud 1950a; Fuchs 1904a; Girard 1873; Grandi 1951; Gyorfi 1957; Hagedorn 1903a; Henschel 1876a: 203, 238, 1895a: 173; Karpinski & Strawinski 1948: 156; Karsch 1883: 142; Knotek 1894a: 558; Lengerken 1939: 66, 1954: 87; Lunardoni & Leonardi 1889: 459; Masutti 1964; Munro 1926: 66; Nordlinger 1855: 185, 1856: 25, 1869: 233; Nusslin 1898: 281, 1906b: 14, 1913: 283, 1927: 342; Palm 1953a: 14, 1959: 351; Pfeffer 1942a: 6, 1989a: 61; Postner 1974: 440; Ratzeburg 1837: 161, 1839: 165, 196; Rey 1892a: 18; Rhumbler 1922: 326, 1927: 342; Rupertsberger 1880: 230; Schimitschek 1930a: 326, 1944: 184, 1955a: 139; Schonherr & Krautwurst 1979; Schwerdtfeger 1944a: 174, 1957a: 182, 1981: 188; Sedlaczek 1935a: 162; Stark 1952: 320; Taschenberg 1880: 232; Tragardh 1930b: 103, 1930c: 478, 1931: 60; Tschorbadjiev 1929: 171; Wachtl 1876a: 456, 1901: 381; Weber 1926: 579; Wichmann 1912b: 138, 1927b: 361. (**ds**) Acloque 1896; Adeli 1964; Allen, A. 1951d; Ammann & Knabl 1923; Audras

& Schaefer 1957; Bau 1888; Bedel 1888b; Bejer-Petersen & Jorum 1977: 22; Bielz 1851, 1887; Bielz & Hampe 1853; Blanchere & Robert 1889; Borchert 1951; Brakman 1966a: 52, 1966b: 205; Brancsik 1871; Browne 1980d: 493; Buck 1955b: 191; Buresh & Lazarov 1956; Butovitsch & Heqvist 1947; Calwer 1884, 1893; Champion 1870: 107, 1894; Chapuis & Candeze 1853; Choo 1983: 79; Choo & Woo 1985: 165; Chorbadzhievo 1924d, 1929; Cooter 1971; Debatisse 1945; Eggers 1904; Endrodi 1958a, 1958b, 1981: 184; Escherich 1923b: 483, 510, 1932b; Fauvel 1885; Fedorov 1930; Fleischer 1888; Fowler 1891; Fricken 1889: 351; Fuchs 1904a, 1905a; Gaubil 1849: 126; Gemminger & Harold 1872: 2687; Gozis 1875: 80; Gredler 1886: 375; Grill 1895: 311; Grune 1979: 127; Gussmann 1919; Gyorfi 1941b; Hagedorn 1903a, 1910a: 63; Hansen, V. 1939, 1956, 1964: 461; Hellen 1947; Henschel 1895a: 173; Heyden 1876: 301; Heyden, Reitter, & Weise 1883: 182, 1891: 673, 1906: 712; Horion 1951; Jazentkovsky 1912: 291; Joly 1960; Kangas 1946a: 35; Karpinski 1926: 82, 1948b: 231; Karpinski & Strawinski 1948: 156; Keler 1925b: 275; Kersten 1933: 76; Kestercanek 1881a: 12; Klefbeck & Sjoberg 1960: 230; Kleine 1912a: 263, 268, 1913a: 35, 1913b: 133, 1934a: 153; Kloft & Hinks 1945: 218; Knotek 1892a: 37, 1894a: 558; Koca 1900: 116, 1905: 192; Kolenati 1846: 40; Koltze 1901: 153; Kolubajiv 1934: 65; Koschitsky 1900: 83; Kovacevic 1957: 69; Kraatz 1869: 59; Kurir 1947c: 30; Langhoffer 1915c: 158; Leclercq 1971; Lokaj 1868: 64; Lomnicki 1886a: 242, 1913b: 148; Lucht 1987: 277; Lunardoni & Leonardi 1889: 459; Mahler 1987: 232; Marcu 1926c: 65; Matthews & Fowler 1883: 42; Murayama 1937a: 2, 1937b: 371, 1948: 6; Negru 1966b: 403, 1968a: 456; Novak, P. 1952: 416, 1964; Nunberg 1928b: 88, 112, 1954: 67; Nusslin 1898: 281; Orest 1926c: 65; Palm 1953a: 14, 1955a: 142, 1959: 26, 32; Perris 1876a: 255, 1877a: 415; Pfeffer 1924b: 472, 1928b: 9, 1931b: 74, 1936: 90, 1947d: 127, 1950b: 76, 1962: 245, 1989a: 61; Pierce, W. D. 1917: 40; Pittioni 1943: 175; Postner 1974: 440; Ragusa 1924: 117; Rapp 1934: 733; Ratzeburg 1837: 161, 1839: 165, 196; Redtenbacher 1858: 836, 1874: 381; Reitter 1869b: 155, 1894a: 86, 1916: 299; Roubal 1935b: 73, 1941: 267; Sainte-Claire 1914: 474; Sainte-Claire & Mequignon 1938: 447; Schaufuss 1915: 1244; Schaum 1859: 96, 1862: 101; Schedl 1971d: 429, 1980a: 24; Scheerpeltz & Winkler 1930: 258; Schilsky 1909: 189; Schiodte 1873: 103; Schneider & Leder 1977: 55; Schulze 1913: 59; Schwerdtfeger 1981: 188; Seidlitz 1891a: 566, 1891b: 612; Sharp & Fowler 1893: 34; Stark 1927b: 89, 1952: 320; Stein 1868: 114; Stein & Weise 1877: 164 ; Stierlin 1898: 445; Strum 1843: 230; Tredl 1907: 17; Tschorbadjiev 1929: 171; Wachtl 1875a: 456; Wanka 1908: 231; Westhoff 1882: 238; Wichmann 1924: 15, 1927a: 72. (**tx**) Acloque 1896; Altman 1844; Apel 1983; Bach 1854; Balachowsky 1949a: 195; Barbey 1901: 24, 79; Bedel 1888b; Bertolini 1872; Brancsik 1871; Chapuis & Candeze 1853; Choo 1983: 79; Chorbadzhievo 1924d; Dombrowsky 1887, 1892; Donisthorpe 1931: 122; Duffy 1953; Eggers 1908a: 121; Eichhoff 1864b: 38, 1872a: 137, 1877c: 386–392, 1878b: 204, 1881a: 47, 203, 1883a: 111, 135; Endrodi 1957b; Escherich 1923b: 483, 510; Fauvel 1885; Ferrari 1867a: 28, 31, 1867b: 114; Fleischer 1905, 1927; Formanek 1907: 49; Fricken 1889: 351; Girard 1873; Grune 1979: 126–127; Hagedorn 1910a: 108; Hansen, V. 1956, 1964: 461; Henschel 1876a: 203, 238, 1895a: 173; Herbst 1793: 116; Hopkins 1914: 130, 132, 1915b:fig. 12; Karpinski & Strawinski 1948: 156; Knotek 1892a: 37; Kuhnt 1913: 1058; Letzner 1891: 376; Leunis 1886: 181; Lovendal 1889b: 54, 1898: 133; Lucas 1920: 627; Lucht 1987: 277; Lunardoni & Leonardi 1889: 459; Murayama 1937b: 371–372; Negru 1966b: 403; Nordlinger 1848: 241, 1856: 25; Nunberg 1954: 67; Nusslin 1911a: 60, 254, 338; Panzer 1795a: 289; Pfeffer 1932b: 23, 1940a: 53–54, 1942a: 6, 1955a: 205, 1962: 241, 245, 1989a:pl. 13; Portevin 1935: 334; Postner 1974: 440; Quaschik 1953: 35; Ratzeburg 1837: 161, 1839: 165, 196, 1856b: 60; Redtenbacher 1849b: 26, 1858: 836, 1874: 381; Reisch 1966b: 175; Reitter 1894a: 86, 1913a: 95, 1916: 299; Rhumbler 1922: 326, 1927: 342; Rupertsberger 1880: 230; Schedl 1934f: 1642, 1950d: 17, 1952f: 87, 1980a: 24; Schimitschek 1937c: 55, 1955c: 87; Schlechtendal & Wunshe 1879: 127; Seidlitz 1891a: 566, 1891b: 612; Sokanovskii 1954: 21; Spessivtsev 1922a: 475–476, 491, 1925a: 178, 1931: 60; Stark 1952: 320; Stierlin 1898: 495; Stresemann et al. 1986: 351; Taschenberg 1880: 232. (**ms**) Escherich 1932b; Lucas 1920: 627.

fuscus Marsham 1802: 53 (*Ips*). Syntypes, sex?; England; not located. Synonymy: Eichhoff 1878b: 205.

References: (**ds**) Ericson & Sandin 1893; Gyllenhal 1813: 360; Pacher 1865: 152; Rye 1868: 187–189; Schaum 1859: 86, 1862: 101; Schilsky 1909: 189; Seidlitz 1872: 396; Stein 1868: 114; Stein & Weise 1877: 164; Stephens 1829a: 145, 1830: 356, 1839: 207; Thomson 1865: 366, 1868: 222. (**tx**) Balachowsky 1949a: 195; Eichhoff 1878b: 205; Ferrari 1867a: 28; Gyllenhal 1813: 360, 1827: 623; Letzner 1891: 376; Marsham 1802: 53; Redtenbacher 1849a: 359; Schaschl 1854: 133; Seidlitz 1872: 396; Stephens 1829a: 145, 1829b: 12, 1830: 356, 1839: 207; Thomson 1865: 366, 1868: 222.

siculus Eggers 1908a: 121. Lectotype ♂; Sicilia (Madonie); USNM, Washington, designated by Anderson & Anderson 1971: 30.

Notes: (1) Pfeffer 1962: 244 (treated as a subspecies).

References: (**ds**) Buresh & Lazarov 1956; Pfeffer 1947d: 127, 1962: 245; Ragusa 1924: 117.

(**tx**) Anderson, W. H. & Anderson 1971: 30; Eggers 1908a: 121; Pfeffer 1940: 53, 1955a: 205, 1962: 244–245; Reitter 1913a: 95–96; Schedl 1934f: 1642.

***ceratoniae* Peyerimhoff** 1926: 388. Syntypes, sex?; Sidi-Madani (massif des Mouzaia) [Algeria]; MNHN, Paris.
Distribution: Africa (Algeria/ Morocco).
Hosts: *Ceratoniae siliquae*.
References: (**hb**) Peyerimhoff 1926: 388. (**ds**) Kleine 1934a: 153; Peyerimhoff 1926: 388; Pfeffer 1935: 158, 1962: 245. (**tx**) Balachowsky 1949a: 194; Eggers 1927d: 120–123; Peyerimhoff 1926: 388; Pfeffer 1962: 241, 245, 1987: 24; Schedl 1934f: 1642.

cribripennis Eggers 1944c: 142. Syntypes, sex?; Algier (Bou-Berak); Eggers Collection, in NHMW, Wien. Synonymy: Pfeffer 1962: 243.
Notes: (1) Schedl 1979c: 69 (citation of holotype invalid).
References: (**tx**) Eggers 1944c: 142; Pfeffer 1955a: 205, 1962: 243; Schedl 1979c: 69.

***coronatus* Eggers** 1944c: 141. Holotype ♀; Tunis (El Feidja); Eggers Collection, in NHMW, Wien.
Distribution: Africa (Algeria/ Tunisia).
References: (**ds**) Pfeffer 1962: 245. (**tx**) Eggers 1944c: 141; Pfeffer 1962: 245; Schedl 1979c: 64.

***dinoderoides* (Blandford)** 1894d: 97 (*Dryocoetes*). Holotype, sex?; Ichiuchi, Japan; BMNH, London.
Distribution: Asia (Japan).
Notes: (1) Murayama 1957c: 623 (to *Taphrorychus*).
References: (**ds**) Hagedorn 1910d: 66; Kleine 1913b: 136, 1914b: 258; Murayama 1954b: 202, 1957c: 588. (**tx**) Blandford 1894d: 97; Eggers 1923a: 161; Hagedorn 1910a: 96; Murayama 1954b: 202, 1957c: 588–623; Schedl 1934f: 1643.

***hewetti* (Stebbing)** 1908b: 11 (*Dryocoetes*). Syntypes 2, sex?; Kumaun, Naini Tal, U. P., India; FRI, Dehra Dun.
Distribution: Asia (Himachal Pradesh, Uttar Pradesh in India).
Hosts: *Quercus dentata, Q. lanuginosa, Q. semicarpifolia*.
References: (**ay**) Gardner 1934b: 1–17. (**cn**) Kleine 1932a: 302; Pierce, W. D. 1917: 154; Stebbing 1914: 545. (**ec**) Stebbing 1914: 545. (**hb**) Beeson 1922c: 495–496; Kleine 1932a: 302; Stebbing 1914: 545. (**ds**) Beeson 1922c: 495–496; Kleine 1914b: 270, 1932a: 302, 1934a: 157; Pierce, W. D. 1917: 154; Schedl 1975c: 383. (**tx**) Gardner 1934b: 1–17; Hagedorn 1910a: 96; Stebbing 1908b: 11, 1914: 545.

***hirtellus* Eichhoff** 1878b: 208. Holotype, sex?; Anatolia [Turkey]; IRSNB, Brussels.
Figures: Grune 1979: 124, Pfeffer 1989a:pl. 13.
Distribution: Africa (Algeria), Asia (Turkey), Europe (Bulgaria/ Czechoslovakia/ Hungary/ Romania/ Yugoslavia).
Hosts: *Corylus avellana, Fagus orientalis, F. silvatica, Quercus cerris*.
References: (**bv**) Grune 1979: 125. (**cn**) Acatay 1943a: 67; Chorbadzhievo 1929; Schimitschek 1944: 183. (**ec**) Nosek 1952: 416, 1959b: 87; Schimitschek 1941a: 305. (**hb**) Acatay 1943a: 67; Chorbadzhievo 1929; Nosek 1959b: 87; Peyerimhoff 1926: 588; Schimitschek 1944: 183; Tschorbadjiev 1929: 171; Wichmann 1912b: 138–139. (**ds**) Buresh & Lazarov 1956; Chorbadzhievo 1929; Endrodi 1958b; Escherich 1932b; Grune 1979: 125; Hagedorn 1910d: 63; Heyden, Reitter, & Weise 1906: 712; Horion 1951; Kleine 1913a: 307, 1913b: 133, 1934a: 114; Lucht 1987: 277; Novak, P. 1952: 416; Peyerimhoff 1926: 388; Pfeffer 1936: 90, 1962: 245, 1989a: 62; Postner 1974: 440; Reitter 1894a: 86; Roubal 1941: 267; Schaufuss 1915: 1244; Schedl 1961b: 185; Tschorbadjiev 1929: 171. (**tx**) Balachowsky 1949a: 194; Eggers 1911a: 122, 1914: 40, 1923b; Eichhoff 1878b: 208; Endrodi 1957a, 1957b; Grune 1979: 124–125; Hagedorn 1910a: 109; Lucht 1987: 277; Pfeffer 1932b: 23, 1955a: 208, 1962: 241, 1965: 63, 1987: 23, 1989a:pl. 13; Postner 1974: 440; Reitter 1894a: 86, 1913a: 95; Schedl 1934f: 1642; Pfeffer 1932b: 23, 1962: 245. (**ms**) Escherich 1932b.

mecedanus Reitter 1913a: 95. Holotype, sex?; Teplitz, Ungarn; NHMB, Budapest. Synonymy: Pfeffer 1965: 63.
References: (**ds**) Buresh & Lazarov 1956; Csiki 1914; Pfeffer 1936: 90; Roubal 1941: 267. (**tx**) Pfeffer 1955a: 208, 1962: 241, 1965: 63, 1987: 23; Reitter 1913a: 95; Schedl 1934f: 1642.

° ***immaturus* Schedl** 1947a: 43. Holotype, sex?; Baltic Bernstein; Geologisch-Palaeontologische Institut Albertus Universitat, Konigsberg.
Distribution: Europe (fossil in Baltic amber).
References: (**tx**) Schedl 1947a: 43.

***lenkoranus* Reitter** 1913a: 96. Syntypes, sex?; Talysch im Kaspischen Meergebiet bei Lyrik und Lenkoran; NHMB, Budapest.
Distribution: Europe (Caucasus in W USSR).
Hosts: *Acer* sp.
References: (**hb**) Stark 1952: 320. (**ds**) Kleine 1934a: 114; Pfeffer 1935: 158, 1962: 245; Stark 1952: 320. (**tx**) Pfeffer 1955a: 204, 1962: 245; Reitter 1913a: 95–96; Schedl 1934f: 1642; Sokanovskii 1954: 21; Stark 1952: 326.

***machnovskii* (Sokanovskii)** 1954: 17 (*Hypothenemus*). Syntypes, sex?; USSR [not seen]; Sokanovskii Collection.
Distribution: Asia (E USSR).
Hosts: *Salix* sp.
Notes: (3) Sokanovskii 1954: 17, 20 (treated in *Saliciphilus*).
References: (**ds**) Kadyrov 1988: 43, 45, 1989; Maknovskii 1958(?): 68. (**tx**) Michalski 1969b: 569; Pfeffer 1985b: 141; Schedl 1964m: 308; Sokanovskii 1954: 17, 20, 1958: 39.

***mikuniyamensis* (Murayama)** 1957c: 616 (*Pseudopoecilips*). Syntypes 2 ♂, 2 ♀; Mt. Mikuni, Niigata pref., Japan; USNM, Washington.
Distribution: Asia (Japan).
Hosts: *Acer arguntum*.
References: (**ds**) Murayama 1957c: 588. (**tx**) Murayama 1957c: 588, 616, 619; Schedl 1962p: 205.

***minor* Eggers** 1923b: 137. Syntypes ♂; Sardinia: Italy: Tuscany: Viareggio; Eggers Collection, in NHMW, Wien, and Marchi Collection.
Distribution: Africa (Algeria), Europe (Italy/ Sardinia).
Hosts: *Quercus ilex*.
Notes: (1) Schedl 1979c: 155 (citation of holotype invalid).
References: (**bv**) Grune 1979: 125. (**ds**) Grune 1979: 125; Pfeffer 1935: 158, 1947d: 128, 1962: 245; Postner 1974: 440; Schedl 1964a. (**tx**) Balachowsky 1949a: 194; Eggers 1923b: 137, 1927d: 123; Grune 1979: 125; Pfeffer 1962: 245, 1987: 23; Postner 1974: 440; Schedl 1934f: 1642, 1979c: 155; Sokanovskii 1954: 19.

***moestus* (Blandford)** 1894d: 96 (*Dryocoetes*). Holotype, sex?; Nikko, Japan; BMNH, London.
Distribution: Asia (Japan).
Hosts: *Carpinus laxiflora*.
Notes: (1) Murayama 1957: 623 (to *Taphrorychus*).
References: (**ds**) Hagedorn 1910d: 67; Kleine 1913b: 136, 1914b: 258; Murayama 1954b: 173, 1957c: 588. (**tx**) Blandford 1894d: 96; Eggers 1923a: 161; Hagedorn 1910a: 96; Murayama 1954b: 173, 1957c: 588; Schedl 1934f: 1643.

***pilosus* (Murayama)** 1957c: 619 (*Pseudopoecilips*). Holotype, sex?; Nagatani, Gihu pref. (Honshu), Japan; USNM, Washington.
Distribution: Asia (Japan).
Hosts: *Fagus crenata*.
Notes: (3) Murayama 1957c: 621 (aberration named as var. *brevipilosus*, no status).
References: (**ds**) Murayama 1957c: 588. (**tx**) Murayama 1957c: 588, 619, 621; Schedl 1962p: 205.

***primitus* (Schedl)** 1965a: 341 (*Taphroterus*). Holotype, sex?; Prov. Ha-Tinh, forestiere Huong-son, 150 m; NHMB, Budapest.
Distribution: Asia (Vietnam).
References: (**tx**) Schedl 1965a: 341, 1979c: 199.

***schimitscheki* Eggers** 1940g: 38. Lectotype, sex?; Kleinasien (Ayancyk); USNM, Washington, designated by Anderson & Anderson 1971: 29.
Distribution: Asia (W USSR).
References: (**cn**) Schimitschek 1944: 185, 1952c: 60. (**ec**) Schimitschek 1941a: 305. (**hb**) Schimitschek 1944: 185. (**ds**) Pfeffer 1962: 245. (**tx**) Anderson, W. H. & Anderson 1971: 29; Eggers 1940g: 38; Pfeffer 1962: 245; Schedl 1979c: 221.

***striatus* Nobuchi** 1966e: 52. Holotype, sex?; Mt. Homan, Fukuoka pref., Japan; Nobuchi Collection, Ibaraki.
Figures: Nobuchi 1966e:pls. 1–2 (adult).
Distribution: Asia (Japan).
References: (**tx**) Nobuchi 1966e: 52, pl. 1–2.

***taradakensis* (Murayama)** 1957c: 618 (*Pseudopoecilips*). Holotype, sex?; Taradake, Nagasaki pref., Japan; USNM, Washington.
Distribution: Asia (Japan).
Hosts: *Cinnamomum camphora, Machilus thunbergii*.
References: (**ds**) Murayama 1957c: 588. (**tx**) Murayama 1957c: 588, 618.

***villifrons* (Dufour)** 1843: 91 (*Bostrichus*). Syntypes, sex?; France; not located.
Figures: Balachowsky 1949a: 184, Donisthorpe 1931:pl. H, Grune 1979: 126, Pfeffer 1989a:pl. 13.
Distribution: Africa (Algeria/ Egypt/ Libya/ Morocco/ Tunisia), Asia (Turkey/ Armenia in W USSR), Europe (Austria/ Belgium/ Bulgaria/ Czechoslovakia/ England/ France/ Hungary/ Italy/ Portugal/ Spain/ W USSR/ Yugoslavia).
Hosts: *Caprinus betulus, Castanea vesca, Fagus orientalis, Quercus afares, Q. cerris, Q. mirbeckii, Q. pedunculata, Q. pubescens, Q. robur, Ulmus* spp.
Notes: (3) Pfeffer 1940a: 53 (aberration named as var. *roubali*, no status), Sokanovskii 1958: 39 (aberration named as var. *splendens*, no status).
References: (**ay**) Schwerdtfeger 1929: 384. (**bv**) Grune 1979: 127. (**cn**) Anonymous 1979p; Hoffmann 1934: 93; Nusslin 1913: 283; Pierce, W. D. 1917: 40; Rhumbler 1922: 326, 1927: 342; Schwerdtfeger 1929: 384; Wachtl 1901: 381. (**ec**) Donisthorpe 1924: 118, 1940: 6; Espanol 1967a; Kleine 1908c: 214, 1944: 72; Krivolutskaya 1974; Nikitsky 1978; Nusslin 1927: 342; Schwerdtfeger 1929: 384. (**hb**) Bukowsky 1930; Koch 1909: 333; Lengerken 1939: 66, 1954: 87; Nusslin 1913: 283, 1927: 342; Paramonow 1934: 114; Peyerimhoff 1919: 256; Postner 1974: 440; Rhumbler 1922: 326, 1927: 342; Spessivtsev 1912: 271; Stark 1952: 320; Wachtl 1901: 381. (**ds**) Acloque 1896; Allen, A. 1954; Anonymous 1979p; Audras & Schaefer 1957; Bedel 1888b:399, 415; Brakman 1966b: 205; Bukowsky 1930; Buresh & Lazarov 1956; Chorbadzhievo 1924d; Donisthorpe 1931: 122; Endrodi 1958b; Escalera 1919; Fedorov 1930; Grune 1979: 127; Hagedorn 1910d: 63; Heyden, Reitter, & Weise 1891: 673, 1906: 712; Hoffmann 1934: 93, 1936: 41; Holdhaus 1912: 454; Horion 1951; Kleine 1913a: 35, 1913b: 133, 1914a: 15–16, 1934a: 114; Langhoffer 1915c: 158; Leclercq 1971; Lucht 1987: 277; Negru 1968a: 456; Normand 1937: 263; Peyerimhoff 1919: 256; Pfeffer 1962: 245, 1989a: 61; Pierce, W. D. 1917: 40; Pittioni 1943: 176; Pjatnitskii 1930a: 165; Postner 1974: 440; Reitter 1894a: 86, 1916: 299; Roubal 1941: 267; Sainte-Claire & Mequignon 1938: 447; Schaufuss 1915: 1244; Schedl 1959h: 100, 1961b: 185, 1964a, 1971d: 432, 1980a: 24; Schilsky 1909: 189; Stark

1927b: 89, 1952: 320; Tredl 1907: 17. (**tx**) Acloque 1896; Balachowsky 1949a: 194; Bedel 1888b; Chorbadzhievo 1924d; Duffy 1953; Dufour 1843: 91; Eggers 1908a: 121, 1911a: 123; Endrodi 1957b; Fleischer 1927; Grune 1979: 126–127; Hagedorn 1910a: 109; Lucht 1987: 277; Pfeffer 1940a: 53, 1955a: 207, 1962: 241, 245, 1989a:pl. 13; Pjatnitskii 1932: 295–302; Portevin 1935: 334; Postner 1974: 440; Reitter 1894a: 86, 1913a: 95–96, 1916: 299; Rey 1892b: 30; Rhumbler 1922: 326, 1927: 342; Schedl 1934f: 1642, 1959h: 100, 1980a: 24; Schmidt, G. 1980: 15; Sokanovskii 1958: 39; Spessivtsev 1912: 271–272, 1931: 60; Stark 1952: 320.

bulmerincqi Kolenati 1846: 39 (*Bostrichus*). Syntypes, sex?; Iberia et Caucaso; not located. Synonymy: Eichhoff 1878b: 207; Eggers 1911a: 123.

References: (**cn**) Acatay 1943a: 66; Chorbadzhievo 1929; Schimitschek 1944: 184, 1952c: 60. (**ec**) Schimitschek 1941a: 305. (**hb**) Acatay 1943a: 66; Barbey 1901: 24, 79; Bargmann 1906; Chorbadzhievo 1929; Dombrowsky 1887, 1892; Eichhoff 1881a: 47, 205; Henschel 1895a: 173; Schimitschek 1944: 184; Tschorbadjiev 1929: 171. (**ds**) Arnoldi et al. 1955: 703; Buresh & Lazarov 1956; Chorbadzhievo 1929; Fauvel 1885; Hagedorn 1910d: 63; Henschel 1895a: 173; Heyden 1898: 77; Heyden, Reitter, & Weise 1883: 182, 1906: 712; Kleine 1913b: 133, 1934a: 153; Kolenati 1846: 39; Lacordaire 1866: 383; Oliveira 1887: 328; Pfeffer 1936: 90; Pittioni 1943: 176; Reitter 1888b: 280, 1894a: 86; Rye 1874: 229; Schaufuss 1915: 1244; Schilsky 1891: 157, 1909: 189; Schneider & Leder 1977: 54; Sharp & Fowler 1893: 34; Stein 1868: 114; Stein & Weise 1877: 164; Tschorbadjiev 1929: 171. (**tx**) Balachowsky 1949a: 195; Barbey 1901: 24, 79; Dombrowsky 1887, 1892; Eggers 1908a: 121, 1911a: 123, 1940g: 38; Eichhoff 1878b: 204, 207, 1881a: 47, 205, 1883a: 111, 135; Fauvel 1885, 1887; Ferrari 1967b: 114; Hagedorn 1910a: 108; Harold 1875; Henschel 1895a: 173; Kolenati 1846: 39; Lacordaire 1866: 383; Pfeffer 1940a: 53; Reitter 1894a: 86, 1913a: 95–96; Schedl 1934f: 1642; Sokanovskii 1954: 21.

capronatus Perris 1866: 193 (*Dryocoetes*). Syntypes, sex?; south France; MNHN, Paris. Synonymy: Eichhoff 1878b: 207.

References: (**ec**) Grossmann 1931a. (**hb**) Perris 1876b: 195. (**ds**) Gozis 1875: 80; Perris 1876a: 253, 255, 1877a: 413, 415; Schilsky 1909: 189; Stein 1868: 114; Stein & Weise 1877: 164. (**tx**) Balachowsky 1949a: 195; Eichhoff 1868d: 419, 1876: 378–379, 1878b: 207; Ferrari 1867a: 28, 1867b: 114; Perris 1866: 193, 1877a: 413.

Genus *Dendrographus* Schedl

DENDROGRAPHUS SCHEDL 1964m: 310. Type-species: *Pelicerus pygmaeus* Eggers, original designation.

Protopityophthorus Schedl 1973f: 73. Type-species: *Protopityophthorus durus* Schedl = *Pelicerus pygmaeus* Eggers, original designation. Synonymy: Wood 1984b: 225.

References: (**tx**) Schedl 1973f: 73; Wood, S. L. 1984b: 225.

References: (**hb**) Wood, S. L. 1986a: 74. (**ds**) Wood, S. L. 1986a: 74. (**tx**) Schedl 1964m: 310; Wood, S. L. 1986a: 74.

***pygmaeus* (Eggers)** 1923: 218 (*Pelicerus*). Syntypes, sex?; Kaiserin Augustafluss-Gebeit auf New Guinea; MNB, Berlin, and Eggers Collection, 2 Eggers syntypes in NHMW, Wien.

Figures: Schedl 1973f: 70 (adult).

Distribution: New Guinea.

References: (**tx**) Eggers 1923: 218; Schedl 1940b: 438; 1964m: 310, 1979c: 207.

durus Schedl 1973f: 73 (*Protopityophthorus*). Holotype ♀; Biniguni, Gwariu River, M. Bay Distr., New Guinea; AMNH, New York. Synonymy: Wood 1984b: 225.

References: (**tx**) Schedl 1973f: 70, 73, 1979c: 86; Wood, S. L. 1984b: 225.

Genus *Peridryocoetes* Wood

PERIDRYOCOETES WOOD 1984b: 230. Type-species: *Ozodendron nitens* Schedl, original designation.

Notes: (1) The name *Peridryocoetes* was used as a nomen nudum by Schedl from 1964 to 1979.

References: (**hb**) Wood, S. L. 1986a: 74. (**ds**) Wood, S. L. 1986a: 74. (**tx**) Wood, S. L. 1984b: 230, 1986a: 74.

***crassus* (Eggers)** 1927b: 397 (*Dryocoetes*). Holotype, sex?; Sumatra (Bandar Baroe); Eggers Collection, in NHMW, Wien.

Distribution: Indonesia (Sumatra).

Notes: (1) Wood examined the holotype and assigned this species to *Peridryocoetes* (Wood 1983 notes, p. 16).

References: (**ds**) Murayama 1957c: 607. (**tx**) Eggers 1927b: 397; Murayama 1957c: 607; Schedl 1953b: 127, 1979c: 68.

***minutissimus* (Schedl)** 1953b: 127 (*Dryocoetes*). Lectotype, sex?; Saigon, Indo-China; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 156.

Distribution: Asia (Vietnam).

Notes: (1) Schedl 1979c: 156 (to *Peridryocoetes*).

References: (**ds**) Murayama 1957c: 608; Schedl 1965a: 338. (**tx**) Murayama 1957c: 608; Schedl 1953b: 127, 1979c: 156; Wood, S. L. 1984b: 230.

***nitens* (Schedl)** 1964g: 243 (*Ozodendron*). Holotype, sex?; Sarawak, Semeagoh; BMNH, London.

Distribution: Indonesia (Sarawak in Borneo).

Hosts: *Garcinia* sp.

References: (**ds**) Browne 1972b: 20, 1980a: 371. (**tx**) Schedl 1964g: 243; Schedl 1979c: 168; Wood, S. L. 1984b: 230, 1986a: 74.

***peliciformis* (Schedl)** 1936j: 29 (*Xyleborus*). Holotype ♀; south east Borneo; Schedl Collection in NHMW, Wien.
Distribution: Indonesia (Borneo).
Notes: (1) Wood 1984b: 230 (to *Peridryocoetes*).
References: (**ds**) Murayama 1957c: 608; Schedl 1936j: 29. (**tx**) Murayama 1957c: 608; Schedl 1936j: 29, 1953c: 291, 1979c: 187; Wood, S. L. 1984b: 230.

***queenslandi* Schedl** 1972a: 146. Holotype ♀; Queensland: Atherton; Queensland Museum, Brisbane.
Distribution: Australia (Queensland).
Hosts: *Flindersia pubescens* (feeding on gall on host).
Notes: (1) Wood 1984b: 230 (to *Peridryocoetes*).
References: (**tx**) Schedl 1972a: 146, 1979c: 209; Wood, S. L. 1984b: 230.

***squamipennis* Schedl** 1979g: 101. Holotype, sex?; New Guinea: SE, Kiunga; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1979g: 101.

Genus *Cyrtogenius* Strohmeyer

CYRTOGENIUS STROHMEYER 1910e: 127. Type-species: *Cyrtogenius bicolor* Strohmeyer, monobasic.

Carposinus Hopkins 1915b: 9, 47. Type-species: *Carposinus pini* Hopkins = *Dryocoetes luteus* Blandford, original designation. Synonymy: Schedl 1952k: 161.
References: (**tx**) Browne 1961c: 85; Hopkins 1915b: 9, 47; Schedl 1952k: 161, 1957d: 12, 1961k: 650; Wood, S. L. 1960a: 14, 44.

Orosiotes Niisima 1917: 1. Type-species: *Orosiotes kumatoensis* Niisima, monobasic. Synonymy: Eggers 1939c: 121.
References: (**tx**) Eggers 1939c: 121; Niisima 1917: 1–4; Schedl 1952k: 161; Wood, S. L. 1960a: 44.

Metahylastes Eggers 1922b: 165. Type-species: *Metahylastes africanus* Eggers, monobasic. Synonymy: Eggers 1927a: 197.
References: (**tx**) Eggers 1922b: 165–166, 1927a: 197; Schedl 1961k: 650.

Pelicerus Eggers 1923: 216. Type-species: *Lepicerus nitidus* Hagedorn, original designation. Synonymy: Schedl 1962n: 698.
References: (**tx**) Beeson 1938: 289; Eggers 1923: 216, 1939c: 121; Schedl 1957d: 12, 1961k: 651, 1961n: 698.

Eulepiops Schedl 1939e: 344. Type-species: *Eulepiops glaber* Schedl, original designation. Synonymy: Wood 1984b: 224.
References: (**tx**) Browne 1961c: 37; Schedl 1939e: 344; Wood, S. L. 1984b: 244.

Ozodendron Schedl 1957d: 13. Type-species: *Pelicerus grandis* Beeson, monobasic. Synonymy: Wood 1984b: 224.
References: (**tx**) Schedl 1957d: 13, 1964g: 243; Wood, S. L. 1984b: 224.

Mimidendrulus Schedl 1957d: 68. Type-species: *Mimidendrulus movoliae* Schedl, monobasic. Synonymy: Wood 1984b: 225.
References: (**tx**) Schedl 1957d: 68, 1961k: 732

Carpophloeus Schedl 1958k: 143. Type-species: *Carpophloeus rugipennis* Schedl, monobasic. Synonymy: Wood 1986a: 74.
References: (**tx**) Schedl 1958k: 143; Wood, S. L. 1986a: 74.

Taphroborus Nunberg 1961b: 617. Type-species: *Taphroborus vaticae* Nunberg, original designation. Synonymy: Schedl 1961k: 651, Wood 1986a: 74.
References: (**tx**) Nunberg 1961b: 617; Schedl 1961k: 651; Wood, S. L. 1986a: 74.

Ozodendron Schedl 1964g: 243. Type-species: *Pelicerus grandis* Beeson, monobasic, preoccupied by Schedl 1957. Synonymy: Wood 1984b: 224.
References: (**tx**) Schedl 1964g: 243; Wood, S. L. 1984b: 224.

Artepityophthorus Schedl 1969e: 157. Type-species: *Artepityophthorus aries* Schedl, monobasic. Synonymy: Wood 1984b: 225.
References: (**tx**) Schedl 1969e: 157–158; Wood, S. L. 1984b: 225.

Notes: (3) Schedl used the manuscript name in his collection of *Taphrostenoxis* Schedl for *T. tenuis* Schedl, no status.
References: (**ay**) Nobuchi 1969a: 61. (**hb**) Wood, S. L. 1986a: 74. (**ds**) Brimblecombe 1953: 14; Schedl 1966b: 30; Wood, S. L. 1986a: 74. (**tx**) Beeson 1938: 289; Browne 1959b: 297; Eggers 1922b: 165, 1927a: 197, 1939c: 121; Hopkins 1914: 120, 132, 1915b: 8, 1915c: 236; Murayama 1930: 22, 1954: 200; Nunberg 1961a: 340–342; Schedl 1934f: 1647, 1952d: 358, 1952k: 161, 1956a: 30, 1957d: 12, 1957e: 865–883, 1958k: 143, 1961k: 650, 1962k: 698–699, 1964m: 305, 1977b: 91; Strohmeyer 1910e: 127, 1911: 16; Wood, S. L. 1960a: 14, 44, 1986a: 74.

***acuminatus* (Schedl)** 1975g: 221 (*Eidophelus*). Holotype, sex?; New Guinea, Haus Copper, Wau, Mt. Missim; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1975g: 221, 1979c: 11.

***aequalis* (Schedl)** 1979g: 100 (*Ozodendron*). Holotype, sex?; New Guinea; Bulolo, Morobe District, Upper Manki L. A.; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1979g: 100.

***aethiopicus* (Eggers)** 1927a: 178 (*Dryocoetes*). Lectotype ♂; Abessinien; USNM, Washington, designated by Anderson & Anderson 1971: 3.
Distribution: Africa (Ethiopia).
References: (**tx**) Anderson, W. H. & Anderson 1971: 3; Eggers 1927a: 178–179; Schedl 1961k: 657, 1979c: 13.

***affinis* (Schedl)** 1940b: 439 (*Pelicerus*). Holotype, sex?; Papua: Kokoda, 1200 ft.; BMNH, London.
Distribution: New Guinea.
References: (**bv**) Gray, B. 1974c. (**hb**) Gray, B. 1974c. (**tx**) Schedl 1940b: 439, 1979c: 14.

***africanus* (Schreiner)** 1882: 246 (*Dryocoetes*). Syntypes ♂ ♀; Guineae ora Africa; Schedl Collection in NHMW, Wien.
Figures: Schedl 1961k: 658 (antenna).
Distribution: Africa (Ghana).
Notes: (3) Schedl 1979c: 14 (citation of holotype invalid).
References: (**ds**) Hagedorn 1910d: 65. (**tx**) Eggers 1924: 105, 1928: 174; Hagedorn 1910a: 96; Schedl 1939i: 383, 1948a: 666, 1954e: 47, 1957e: 875, 1961k: 658, 1979c: 14; Schreiner 1882: 246.

***africus* Wood** 1988c: 196. Holotype, sex?; Flussgebiet des oberen Mwena und Ramissi, Britisch Ostafrika; Methner Collection, automatic.
Figures: Schedl 1961k: 652.
Distribution: Africa (Guinea/ Kenya/ Tanzania/ Uganda/ Zaire).
Hosts: *Euphorbia* sp.
References: (**tx**) Wood, S. L. 1988c: 196.
africanus Eggers 1922a: 165 (*Metahylastes*). Holotype, sex?; Flussgebiet des oberen Mwena und Ramissi, Britisch Ostafrika; Methner Collection, preoccupied by Schreiner 1882.
References: (**ds**) Gardner 1957a: 30; Kleine 1913b: 135, 1914b: 307; Murayama 1957c: 608; Schedl 1938d: 450. (**tx**) Eggers 1922a: 165, 1927a: 197; Schedl 1938d: 450, 1954e: 47, 1961k: 652, 1962h: 58, 1962k: 1073, 1967a: 129; Wood, S. L. 1988c: 196.

***agathis* (Browne)** 1980c: 486 (*Ozodendron*). Holotype, sex?; Tg. Loleo (Borneo) to Nagoya (Japan) imported; BMNH, London.
Distribution: Indonesia (Borneo).
Hosts: *Agathis* sp.
References: (**ds**) Ohno, Yoneyama, & Nakazawa 1987: 93. (**tx**) Browne 1980c: 486.

***alternantes* Schedl** 1975f: 353. Holotype, sex?; Upper Manki logging area, Bulolo, Morobe District; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
Notes: (3) Schedl 1979g: 100 (described female).
References: (**tx**) Schedl 1975f: 353, 1979c: 17, 1979g: 100.

***anisopterae* (Browne)** 1985b: 291 (*Ozodendron*). Holotype ♂; Tg. Usau (West Irian) to Nagoya (Japan) imported; BMNH, London.
Distribution: New Guinea.
Hosts: *Anisoptera* sp.
References: (**tx**) Browne 1985b: 291.

***aries* (Schedl)** 1969e: 158 (*Artepityophthorus*). Holotype, sex?; New Guinea, Haus Copper, Wau, Mt. Mission; NHMB, Budapest.
Distribution: New Guinea.
References: (**tx**) Schedl 1969e: 157–158, 1979c: 25.

***bicolor* Strohmeyer** 1910e: 127. Syntypes, sex?; Aethiopia, Tschertscher montes; Strohmeyer Collection.
Figures: Nunberg 1961a: 345.
Distribution: Africa (Ethiopia/ Zaire).
References: (**ds**) Kleine 1913b: 135, 1914b: 324. (**tx**) Hopkins 1914: 124, 132; Lucas 1920: 357; Schedl 1950h: 109, 1961k: 653, 1962k: 1073, 1962r: 97; Strohmeyer 1910e: 127. (**ms**) Lucas 1920: 357.
kivuensis Nunberg 1961a: 344 (*Tiarophorus*). Holotype ♀; Kivi: Kavimvira (Uvira); MRCB, Tervuren. Synonymy: Schedl 1962r: 97.
References: (**tx**) Nunberg 1961a: 344–345; Schedl 1962k: 1073, 1962r: 97.

***borneensis* Schedl** 1967a: 129. Holotype ♀; Tarakan (Borneo) to Tokyo (Japan), imported; PPST, Tokyo.
Distribution: Indonesia (Borneo).
Hosts: Melanti log.
References: (**tx**) Schedl 1967a: 129, 1979c: 44.

***brevior* (Eggers)** 1927c: 86 (*Pelicerus*). Lectotype ♂; Philippinen: Luzon, Provinz Mountain, Balbalan; USNM, Washington, designated by Anderson & Anderson 1971: 8.
Distribution: Asia (Burma/ Andaman Islands, Nicobar Islands in India/ Japan/ Korea/ Malaya/ Thailand), Bismarck Island, Fiji Islands, Indonesia (Java), Micronesia (Caroline Islands, Gilbert Islands, Mariana Islands, Truk Island), Philippine Islands, Samoan Islands.
Hosts: *Artocarpus incisa, A. kunstleri,* rare in *Canarium vulgare, Lansium domesticum.*
Notes: (3) Schedl 1951b: 363 (*mindoroensis,* nomen nudum).
References: (**hb**) Beaver 1976b: 538; Beeson 1929: 231; Kalshoven 1958a: 186, 1958b: 173. (**ds**) Beaver 1976b: 538; Beaver & Browne 1975: 289; Beeson 1929: 231, 1938b: 289, 1961: 290; Browne 1961c: 85, 1966: 245, 1970: 541, 1980a: 370, 1980c: 483, 1981b: 598, 1985a: 191; Choo 1983: 80; Choo & Woo 1985: 165; Kalshoven 1958a: 186, 1958b: 173; Ohno, Yoneyama, & Nakazawa 1982a: 3, 1987: 93; Ohno et al. 1987: 87, 1988a: 92; Schedl 1966b: 31, 1971f: 146; Wood, S. L. 1960a: 45. (**tx**) Anderson, W. H. & Anderson 1971: 8; Beeson 1929: 231, 1938: 289; Choo 1983: 80; Eggers 1927c: 86; Schedl 1942c: 180, 1951b: 363, 1951i: 50, 1951k: 136, 1952b: 363, 1952c: 63, 1966b: 31, 1979c: 46; Wood, S. L. 1960a: 45.

***chirindaensis* (Schedl)** 1948c: 666 (*Dryocoetes*). Lectotype, sex?; Chirinda, Mashonal'd; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 56.
Distribution: Africa (Zimbabwe).
References: (**ds**) Murayama 1957c: 608. (**tx**) Murayama 1957c: 608; Schedl 1948c: 666, 1961k: 658, 1979c: 56.

***chlorophorae* (Schedl)** 1957d: 66 (*Dryocoetes*). Holotype, sex?; Cote d'Ivoire, Adiopodoume; Schedl Collection in NHMW, Wien.
Distribution: Africa (Ivory Coast).
Hosts: *Afromosia elata, Chlorophora excelsa, Macrolobium heudelotianum.*
References: (**ds**) Schedl 1961k: 659, 1964e: 68. (**tx**) Schedl 1957d: 66, 1961k: 659, 1979c: 57.

***congonus* (Eggers)** 1924: 105 (*Dryocoetes*). Holotype ♀; 300 km von Kindu im Congostaat; MRCB, Tervuren.
Distribution: Africa (Zaire).
References: (**ds**) Murayama 1957c: 608; Schedl 1961k: 659, 1972e: 281. (**tx**) Eggers 1924: 105; Murayama 1957c: 608; Schedl 1948c: 666, 1961k: 659.

***cribricollis* Schedl** 1957e: 875. Lectotype ♀; Congo Belge, Kivu, Kavimvira (Uvira); Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 69.
Figures: Nunberg 1961a: 341 (adult).
Distribution: Africa (Ghana/ Ruanda/ Zaire).
Hosts: *Elaeophorbia drupifera.*
References: (**hb**) Browne 1963a: 236–237. (**ds**) Browne 1963a: 236; Schedl 1961k: 653. (**tx**) Schedl 1957e: 875, 1961k: 653, 1962k: 1074, 1962r: 96, 1979c: 69.
dryocoetoides Nunberg 1961a: 338 (*Cyrtogenius*). Holotype ♀; Kivu: Sanghe, pl. de la Ruzizi; MRCB, Tervuren. Synonymy: Schedl 1962k: 1074, 1962r: 96.
References: (**tx**) Nunberg 1961a: 337–341; Schedl 1962k: 1074, 1962r: 96.

***cribripennis* Schedl** 1962h: 68. Holotype, sex?; Ghana: Kumasi; BMNH, London.
Distribution: Africa (Ghana).
Hosts: *Triplochiton scleroxylon.*
Notes: (1) Schedl 1964j: 43 (an obvious duplicate description of this species).
References: (**ds**) Schedl 1961k: 653. (**tx**) Schedl 1961k: 653, 1962h: 68, 1962k: 1074, 1964j: 43, 1979c: 68–69.

***curtus* (Schedl)** 1973f: 71 (*Ozodendron*). Holotype ♀; Waikaiuna, Normanby Island, M. Bay Distr., 0–50 m; AMNH, New York.
Distribution: New Guinea.
References: (**tx**) Schedl 1973f: 71, 1979c: 72.

***cyclopus* (Schedl)** 1940b: 439 (*Pelicerus*). Holotype ♀?; Dutch New Guinea, Cyclops Mts., Sabron, Camp 2, 2000 ft.; BMNH, London.
Distribution: Fiji Islands, New Guinea.
References: (**ds**) Schedl 1979f: 103. (**tx**) Schedl 1940b: 435, 439, 1942a: 178, 1955b: 280, 1979c: 72.

***declivis* (Schedl)** 1955b: 294 (*Carposinus*). Holotype, sex?; Neu-Guinea, Friedrich-Wilhelmshafen; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1955b: 280, 294, 1979c: 76.

***depressus* (Browne)** 1963b: 243 (*Mimidendrulus*). Holotype, sex?; Nigeria: Makurdi; BMNH, London.
Distribution: Africa (Nigeria).
References: (**tx**) Browne 1963b: 243; Roberts 1969: 125.

***detectus* Schedl** 1972e: 289. Holotype, sex?; Ghana, Ashanti Region, Kwadaso, 320 m, N 6 degrees 42′, W 1 degree 39′; NHMB, Budapest.
Distribution: Africa (Ghana).
References: (**tx**) Schedl 1972e: 289, 1979c: 79.

***dimorphus* (Schedl)** 1936g: 527 (*Dryocoetes*). Lectotype, sex?; New South Wales: Burwood; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 81.
Distribution: Australia (New South Wales).
Hosts: *Pittosporum* sp.
Notes: (1) Schedl 1979: 81 (to *Cyrtogenius*).
References: (**ds**) Brimblecombe 1953: 18; Murayama 1957c: 608; Schedl 1936g: 527, 1964c: 305. (**tx**) Murayama 1957c: 608; Schedl 1936g: 527, 1964c: 305, 1979c: 81.

***dubius* (Eggers)** 1924: 105 (*Dryocoetes*). Lectotype, sex?; Congostaat, Kunungu; USNM, Washington, designated by Anderson & Anderson 1971: 12.
Distribution: Africa (Zaire).
References: (**hb**) Browne 1961b: 15–30. (**ds**) Murayama 1957c: 608; Schedl 1961k: 659. (**tx**) Anderson, W. H. & Anderson 1971: 12; Eggers 1924: 105; Murayama 1957c: 608; Schedl 1948c: 666, 1961k: 659, 1979c: 85.

***elongatissimus* Wood** 1988c: 196. Holotype, sex?; Borneo; Schedl Collection in NHMW, Wien, automatic.
Distribution: Indonesia (Borneo).
References: (**tx**) Wood, S. L. 1988c: 196.
elongatus Schedl 1964g: 244 (*Ozodendron*). Holotype, sex?; Borneo; Schedl Collection in NHMW, Wien, preoccupied by Eggers 1927.
References: (**tx**) Schedl 1964g: 244, 1979c: 89; Wood, S. L. 1988c: 196.

***elongatulus* Wood** 1988c: 197. Holotype, sex?; Papua New Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Wood, S. L. 1988c: 197.
elongatus Schedl 1979g: 101 (*Eidophelus*). Holo-

type, sex?; New Guinea: Bulolo, Morobe District, Upper Manki L. A., Schedl Collection in NHMW, Wien, preoccupied by Eggers 1927.
References: (**tx**) Schedl 1979g: 101.

***elongatus* (Eggers)** 1927c: 85 (*Pelicerus*). Lectotype ♂; Mindanao, Provinz Lanao, Kolambugan; USNM, Washington.
Distribution: Philippine Islands (Mindanao).
References: (**ds**) Browne 1981b: 597, 1984b: 286, 1985b: 290; Ohno et al. 1987: 87; Schedl 1966b: 31. (**tx**) Anderson, W. H. & Anderson 1971: 12; Eggers 1927c: 85; Nobuchi 1983: 301; Schedl 1979c: 89–90.

***festivus* Schedl** 1975g: 220. Holotype, sex?; New Guinea, Mt. Wilhelm; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1975g: 220, 1979c: 96.

***fijianus* (Schedl)** 1951k: 150 (*Ozopemon*). Lectotype, sex?; Fiji Islands, Viti Levu: Navai Mill. near Nandarivatu, alt. 2300 ft.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 96.
Distribution: Fiji Islands.
Hosts: *Agatha vitiensis*, Kauri bark.
References: (**ec**) Roberts 1976: 384. (**hb**) Roberts 1976: 384. (**ds**) Roberts 1976: 384. (**tx**) Browne 1974a: 68; Schedl 1951k: 150, 1955b: 284, 287; 1979c: 96.

***formosanus* (Schedl)** 1952c: 63 (*Orosiotes*). Holotype, sex?; Formosa, Rikiriki; Schedl Collection in NHMW, Wien.
Distribution: Asia (Taiwan).
References: (**ds**) Nobuchi 1967: 20; Schedl 1969a: 204. (**tx**) Schedl 1952c: 63, 1979c: 99.

***frigidus* (Schedl)** 1942a: 178 (*Orosiotes*). Lectotype, sex?; Malaya, Cameron's Highlands; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 100.
Distribution: Asia (Malaya).
References: (**ds**) Browne 1961c: 85. (**tx**) Browne 1965a: 195; Schedl 1942a: 178, 1979c: 100.

***glaber* (Schedl)** 1939e: 344 (*Eulepiops*). Lectotype, sex?; Malaya: Selangor, Sungei Buloh For. Res; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 104.
Distribution: Asia (Malaya).
Hosts: *Artocarpus lakoocha*, *Xanthophyllum* sp.
References: (**ds**) Beeson 1961: 287; Browne 1961c: 87. (**tx**) Schedl 1939e: 344, 1979c: 104.

***gracilis* (Schedl)** 1974d: 462 (*Ozodendron*). Holotype, sex?; Taun logging area, Bulolo, Morobe District; CSIRO, Canberra.
Distribution: New Guinea.
References: (**tx**) Schedl 1974d: 462, 1979c: 108.

***gracillimus* Wood** 1988c: 197. Holotype, sex?; New Guinea: Kaisenik; BMNH, London, automatic.
Distribution: New Guinea.
Hosts: *Castanopsis* sp.
References: (**tx**) Wood, S. L. 1988c: 197.

gracilis Browne 1984d: 95. Holotype, sex?; New Guinea: Kaisenik; BMNH, London, preoccupied by Schedl 1974.
References: (**tx**) Browne 1984d: 95; Wood, S. L. 1988c: 197.

***grandis* (Beeson)** 1929: 232 (*Pelicerus*). Holotype ♀; Samoa: Upolu, Mololelei; BMNH, London.
Distribution: Samoa.
References: (**ds**) Beaver 1976b: 538; Beeson 1938b: 289. (**tx**) Beeson 1929: 232; Schedl 1950f: 39, 1951k: 36, 150, 1957d: 12–13, 1964g: 243.

***granistriatus* (Schedl)** 1942c: 180 (*Orosiotes*). Holotype, sex?; Neu-Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1942c: 180, 1979c: 110.

***granulifer* (Beeson)** 1929: 231 (*Pelicerus*). Holotype ♀; Samoa: Tutuila, Pago Pago; BMNH, London.
Distribution: Fiji, Samoa.
References: (**ec**) Roberts 1976: 383. (**hb**) Roberts 1976: 383. (**ds**) Beaver 1976b: 538; Beeson 1938b: 289; Browne 1974a: 64, 1986c: 661; Ohno et al. 1987: 87; Roberts 1976: 383; Schedl 1971f: 148. (**tx**) Beeson 1929: 231; Schedl 1951k: 136.

***grossepunctatus* (Schedl)** 1939e: 346 (*Pelicerus*). Lectotype, sex?; Malaya, Pahang, Tersang; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 113.
Distribution: Asia (Andaman Islands, Madhya Pradesh in India/ Malaya).
Hosts: *Canarium* sp.
References: (**ds**) Beeson 1961: 290; Browne 1961c: 85. (**tx**) Schedl 1939e: 346, 1942a: 171, 1979c: 113.

***hirtellus* Schedl** 1953d: 89. Lectotype ♀; Madagascar, Mt. d'Ambre; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 118.
Distribution: Madagascar.
References: (**tx**) Nunberg 1961a: 342; Schedl 1953d: 89, 1964j: 43, 1977b: 93, 1979c: 118.

***hirtus* (Eggers)** 1923: 162 (*Dryocoetes*). Lectotype, sex?; Deutsch Neu Guinea (Kaiserin Augustafluss); Eggers Collection, in NHMW, Wien, designated by Schedl 1979c: 118.
Distribution: New Guinea.
References: (**ds**) Murayama 1957c: 608. (**tx**) Eggers 1923: 162, 1928d: 174; Murayama 1957c: 608; Schedl 1979c: 118.

***hornus* (Schedl)** 1975f: 356 (*Eidophelus*). Holotype ♀; Upper Manki logging area, Bulolo, Morobe District; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
Notes: (1) Holotype examined by Wood and placed in *Cyrtogenius* (Wood 1983 notes, p. 15).
References: (**tx**) Schedl 1975f: 356, 1979c: 119.

***impar* Schedl** 1953d: 88. Lectotype, sex?; Madagascar Sud; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 122.
Distribution: Madagascar.
References: (**tx**) Nunberg 1961a: 342; Schedl 1953d: 88, 1977b: 92–93, 1979c: 122.

***inermis* Browne** 1983c: 72. Holotype ♀?; New Guinea: Morobe District, Wau, 1200 m; BMNH, London.
Distribution: New Guinea.
References: (**tx**) Browne 1983c: 72.

***kumatoensis* (Niisima)** 1917: 1 (*Orosiotes*). Syntypes, sex?; Kyushu Island, Kamamoto; Nobuchi Collection, Ibaraki.
Distribution: Asia (Japan).
References: (**ds**) Murayama 1954b: 200. (**tx**) Eggers 1939c: 121; Murayama 1954b: 200; Niisima 1917: 1–2; Schedl 1934f: 1647, 1961k: 650.

***laevis* (Browne)** 1984b: 289 (*Ozodendron*). Holotype, sex?; Fakfak (West Irian) to Nagoya (Japan), imported; BMNH, London.
Distribution: New Guinea.
Hosts: *Terminalia* sp.
References: (**tx**) Browne 1984b: 289.

***lineatopunctatus* (Eggers)** 1927b: 401 (*Xyleborus*). Holotype ♀; Neu Guinea; USNM, Washington.
Distribution: New Guinea.
Notes: (1) Wood 1989: 172 (to *Cyrtogenius*).
References: (**tx**) Anderson, W. H. & Anderson 1971: 17; Eggers 1927b: 401; Wood, S. L. 1989: 172.

***longipennis* Browne** 1965a: 195. Holotype ♂; Sarawak: Foot of Mt. Murud; BMNH, London.
Distribution: Indonesia (Sarawak in Borneo).
References: (**ds**) Browne 1985b: 290; Choo 1983: 81; Choo & Woo 1985: 165. (**tx**) Browne 1965a: 195; Choo 1983: 81.

***luteus* (Blandford)** 1894d: 94 (*Dryocoetes*). Syntypes 9, sex?; Japan; BMNH, London.
Figures: Yin, Huang, & Li 1984: 148 (adult, declivity).
Distribution: Asia (Burma/ Fujian, Guangdong, Guangxi, Henan, Hunan, Jiangsu, Jiangxi, Shanxi, Sichuan, Yunnan in China/ Japan/ Korea), Philippine Islands.
Hosts: *Pinus densata, P. khasya, P. massoniana, P. tabulaeformis, P. yunnanensis*.
Notes: (1) Wood 1989: 172 (to *Cyrtgenius*).
References: (**ds**) Blandford 1894c; Choo 1983: 81; Hagedorn 1910d: 67; Kleine 1913b: 136, 1914b: 258; Murayama 1954b: 173, 1957c: 588, 601; Nobuchi 1967: 20; Yin, Huang, & Li 1984: 147. (**tx**) Blandford 1894d: 94; Choo 1983: 81; Hagedorn 1910a: 96; Murayama 1954b: 173, 1957c: 588, 601; Schedl 1934f: 1642; Wood, S. L. 1989: 172; Yin, Huang, & Li 1984: 147.
pini Hopkins 1915b: 47 (*Carposinus*). Holotype ♀; Baguio, Philippine Islands; USNM, Washington. Synonymy: Wood 1989: 172.
References: (**hb**) Kalshoven 1958b: 174. (**ds**) Beeson 1961: 290; Kleine 1934a: 158. (**tx**) Hopkins 1915b: 47; Schedl 1952b: 363, 1952k: 161, 1957d: 12, 1961k: 650; Wood, S. L. 1989: 172.

***madagascariensis* Schedl** 1965c: 61. Holotype, sex?; Madagascar; Schedl Collection in NHMW, Wien.
Distribution: Madagascar.
References: (**tx**) Schedl 1965c: 61, 1977a: 93, 1979c: 144.

***major* Strohmeyer** 1911h: 16. Holotype, sex?; Aethiopia, Harar; Strohmeyer Collection.
Figures: Schedl 1961k: 654.
Distribution: Africa (Ethiopia/ South Africa/ Sudan).
References: (**ds**) Kleine 1913b: 135, 1914b: 324; Schedl 1961k: 654, 1968b: 144, 1971e: 4, 1975k: 277. (**tx**) Hopkins 1914: 124, 134; Schedl 1957e: 875, 1961k: 654, 1979c: 145; Strohmeyer 1911h: 16.

***malayensis* (Schedl)** 1977f: 501 (*Dryocoetes*). Holotype, sex?; Malaya: Kepong; Schedl Collection in NHMW, Wien.
Distribution: Asia (Malaya).
References: (**tx**) Schedl 1977f: 501.

***mayumbensis* (Schedl)** 1965e: 369 (*Dryocoetes*). Holotype, sex?; Congo: Luki; Schedl Collection in NHMW, Wien.
Distribution: Africa (Zaire).
Hosts: *Carapa procera*.
References: (**tx**) Schedl 1965e: 369, 1979c: 150.

***milletiae* (Schedl)** 1952j: 9 (*Dryocoetes*). Holotype, sex?; Congo Belge: Kivu, Mulungu; IRSNB, Brussels.
Distribution: Africa (Zaire).
Hosts: *Milletia ferruginea, Tephrosia vogelii*.
References: (**ds**) Murayama 1957c: 608; Schedl 1961k: 660. (**tx**) Murayama 1957c: 608; Schedl 1952j: 9, 1961k: 660, 1965e: 369, 1979c: 153.

***minor* (Eggers)** 1923a: 218 (*Pelicerus*). Syntypes 3, sex?; Kaiserin Augustafluss in Neu Guinea; MNB, Berlin, and Eggers Collection, in NHMW, Wien.
Distribution: New Guinea, Philippine Islands.
References: (**ds**) Browne 1966: 245, 1981b: 599. (**tx**) Eggers 1923a: 218; Nobuchi 1983: 301; Schedl 1940b: 435.
minor robustus Schedl 1940b: 438 (*Pelicerus*). Holotype, sex?; Dutch New Guinea, Cyclops Mts., Sabron Camp 1, 1200 ft.; BMNH, London.
Notes: (3) It is probable that this variation is an aberration, not a geographical race; if so, it has no status in nomenclature.
References: (**tx**) Schedl 1940b: 438.

***movoliae* (Schedl)** 1957d: 68 (*Mimidendrulus*). Holotype ♂; Congo Belge: Kivu, Mulungu; MRCB, Tervuren.

Figures: Schedl 1961k: 734.
Distribution: Africa (Ruanda/ Zaire).
Hosts: *Lobelia giberroa, Microglossa volubilis*, "Movolia."
References: (**hb**) Schedl 1961k: 733. (**ds**) Mayne & Donis 1962: 303; Schedl 1961k: 733. (**tx**) Schedl 1957d: 68, 1961k: 733–734, 1979c: 160.

***mulungensis* (Schedl)** 1952j: 10 (*Dryocoetes*). Lectotype ♀; Congo Belge: Kivu, Mulungu; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 161.
Figures: Schedl 1961k: 661.
Distribution: Africa (Ruanda/ Zaire).
Hosts: *Cajanus cajan, Cinchona ledgeriana, Helichrysum pandurctum, Millettia ferruginea, Rumex* sp., *Solanus aculeastrum*.
References: (**ds**) Mayne & Donis 1962: 305; Murayama 1957c: 608; Schedl 1961k: 661. (**tx**) Murayama 1957c: 608; Schedl 1952j: 10, 1961k: 661, 1979c: 161.

***nitidus* (Hagedorn)** 1910b: 1 (*Lepicerus*). Holotype, sex?; Sumatra; Hamburg Museum, lost.
Distribution: Asia ("China"/ Vietnam), Australia (Queensland), Bismarck Islands, Indonesia (Sumatra), New Guinea, Solomon Islands.
Hosts: *Euroschinus falcatus*.
Notes: (3) View continental distribution with caution; these records may be based on misidentified *luteus* (SLW).
References: (**ds**) Beeson 1938b: 289; Hagedorn 1910d: 69; Kalshoven 1958b: 174; Kleine 1913b: 139, 1914b: 286; Schedl 1960e: 172, 1962b: 184, 1965a: 339, 1966b: 32, 1969a: 205, 1973c: 378. (**tx**) Browne 1970: 564; Eggers 1923a: 216–218; Hagedorn 1910a: 91, 1910b: 1; Nobuchi 1983: 301; Schedl 1940d: 585, 588, 1950g: 894, 1952b: 363, 1952d: 343, 345, 1955b: 294, 1957d: 12, 1960e: 172, 1961k: 651, 1964m: 306, 1965c: 61.

nitidus orientalis Eggers 1923a: 217 (*Pelicerus*). Lectotype ♀; Neu Guinea (Salvatti); USNM, Washington, designated by Anderson & Anderson 1971: 217.
References: (**ds**) Brimblecombe 1953: 14; Browne 1985b: 291; Ohno, Yoneyama, & Narazawa 1987b: 93; Ohno, Yoshioka, et al. 1988a: 92, 1989: 60; Schedl 1936g: 526, 1940b: 435, 1972a: 144. (**tx**) Anderson, W. H. & Anderson 1971: 23; Beeson 1929: 232; Eggers 1923a: 217; Schedl 1957d: 12.

***noumeanus* (Browne)** 1970: 563 (*Dryocoetes*). Holotype ♂; in island Kauri log from Noumea, New Caledonia, intercepted at Auckland, New Zealand; BMNH, London.
Distribution: New Caledonia.
Hosts: Kauri.
References: (**tx**) Browne 1970: 563.

***papuae* Wood** 1988c: 197. Lectotype ♂; Deutsch Neu Guinea (Kaiserin Augustafluss); USNM, Washington, designated by Anderson & Anderson 1971: 23, automatic.
Distribution: New Guinea.
References: (**tx**) Wood, S. L. 1988c: 197.

papuanus Eggers 1923a: 217 (*Pelicerus*). Lectotype ♂; Deutsch Neu Guinea (Kaiserin Augustafluss); USNM, Washington, designated by Anderson & Anderson 1971: 23, preoccupied by Eggers 1923.
References: (**tx**) Beeson 1929: 232; Eggers 1923a: 217.

***papuanus* (Eggers)** 1923a: 162 (*Dryocoetes*). Syntypes 2, sex?; Ansus auf Neu Guinea; MCG, Genova and Eggers Collection, in NHMW, Wien, or USNM, Washington?
Distribution: New Guinea.
References: (**ds**) Browne 1980d: 491; Ohno, Yoneyama, Nakazawa 1987a: 87; Schedl 1969a: 204. (**tx**) Eggers 1923a: 162; Nobuchi 1983: 301.

***papuensis* Wood** 1988c: 197. Holotype, sex?; Mt. Dayman, Maneau Range, N. Slope, M. Bay Distr., 700 m; AMNH, New York.
Distribution: New Guinea.
References: (**tx**) Wood, S. L. 1988c: 197.

papuanus Schedl 1973f: 71 (*Eidophelus*). Holotype, sex?; Mt. Dayman, Maneau Range, N. Slope, M. Bay Distr., 700 m; AMNH, New York, preoccupied by Eggers 1923.
Notes: (1) Wood examined the holotype and assigned it to *Cyrtogenius* (Wood 1983 notes, p. 15).
References: (**ds**) Murayama 1957c: 608. (**tx**) Murayama 1957c: 608; Schedl 1973f: 71, 1979c: 183.

***parinarii* (Browne)** 1983a: 556 (*Ozodendron*). Holotype, sex?; Lever Harbour (Solomon Islands) to Nagoya (Japan), imported; BMNH, London.
Distribution: Solomon Islands.
Hosts: *Parinarium* sp. log.
References: (**ds**) Ohno, Yoshioka, et al. 1988a: 92. (**tx**) Browne 1983a: 556.

***parvus* Browne** 1980d: 495. Holotype, sex?; Atsy (New Guinea) to Nagoya (Japan) imported; BMNH, London.
Distribution: New Guinea.
Hosts: *Artocarpus* sp.
References: (**ds**) Browne 1984b: 287. (**tx**) Browne 1980d: 495.

***perakensis* (Schedl)** 1936d: 9 (*Dryocoetes*). Lectotype ♀; Malay Peninsula: Perak, Taiping; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 188.
Distribution: Asia (Hong Kong in China/ Malaya), Indonesia (Borneo).
Hosts: *Agathis alba, A. dammara*.
References: (**hb**) Browne 1961c: 85. (**ds**) Browne 1961c: 85, 1965a: 188, 1980a: 372, 1980c: 483,

1981b: 597; Murayama 1957c: 308; Schedl 1975a: 454. (**tx**) Browne 1944: 897, 1970: 563; Murayama 1957c: 308; Schedl 1936d: 9, 1939e: 348, 1957d: 13, 1979c: 188.

castaneus Browne 1949b: 896 (*Dryocoetes*). Holotype, sex?; Malaya: Kelantan, Kuala Krai; BMNH, London. Synonymy: Browne 1970: 563.

References: (**ds**) Browne 1961c: 84; Murayama 1957c: 607. (**tx**) Browne 1949b: 896, 1970: 563; Murayama 1957c: 607.

***peregrinus* Schedl** 1972i: 50. Holotype ♀; New Guinea (N.W.), Wisselmeren, Enarotali, 1850 m; BPBM, Honolulu.

Distribution: New Guinea.

References: (**tx**) Schedl 1972i: 50, 1979c: 189.

***philippinensis* (Eggers)** 1927c: 87 (*Pelicerus*). Lectotype ♂; Philippinen: Catanduanes, Prov. Albay, Virac; USNM, Washington, designated by Anderson & Anderson 1971: 25.

Distribution: Asia (Ryuku Islands), Indonesia (Sumba), Philippine Islands.

Hosts: *Pinus densiflora, P. thunbergii.*

References: (**ds**) Nobuchi 1971a: 126; Schedl 1961c: 71. (**tx**) Anderson, W. H. & Anderson 1971: 25; Eggers 1927c: 87, 1941b: 222; Nobuchi 1959c: 21; Schedl 1940b: 435, 1951i: 50, 1961c: 71, 1966b: 31, 1979c: 192.

***polyphagus* (Schedl)** 1952i: 12 (*Dryocoetes*). Holotype ♀; Congo Belge: Mulungu; MRCB, Tervuren.

Figures: Schedl 1961k: 662.

Distribution: Africa (Zaire).

Hosts: *Caesalpinia decapetala, C.* cf. *sopiaria, Loranthus* sp., *Melanthera brownii.*

References: (**ds**) Mayne & Donis 1962: 306; Murayama 1957c: 608; Schedl 1961k: 662. (**tx**) Murayama 1957c: 608; Schedl 1952i: 12, 1961i: 662, 1961k: 662, 1979c: 197.

***preparvus* Browne** 1986c: 664. Holotype ♂; New Guinea: Tanjong Usau to Nagoya [Japan], imported; BMNH, London.

Distribution: New Guinea.

Hosts: *Terminalia* sp.

References: (**tx**) Browne 1986c: 664.

***rugicollis* (Eggers)** 1940d: 132 (*Orosiotes*). Holotype, sex?; Java (Buitenzorg); Kalshoven Collection.

Distribution: Indonesia (Java).

References: (**hb**) Kalshoven 1958: 173. (**ds**) Schedl 1966b: 32. (**tx**) Eggers 1940d: 132–133; Nobuchi 1983: 301; Schedl 1979c: 216.

***ruginosus* Wood** 1988c: 197. Holotype ♂; Ivory Coast: Adiopodoume; RNH, Leiden, automatic.

Distribution: Africa (Ivory Coast).

References: (**tx**) Wood, S. L. 1988c: 197.

rugicollis Browne 1965a: 194 (*Mimidendrulus*). Holotype ♂; Ivory Coast: Adiopodoume; RNH, Leiden, preoccupied by Eggers 1940.

Notes: (1) Wood 1986a: 74 (to *Cyrtogenius*).

References: (**tx**) Browne 1965a: 194; Wood, S. L. 1986a: 74, 1988c: 197.

***rugipennis* (Schedl)** 1958k: 143 (*Carpophloeus*). Lectotype ♂; Sumatra's Westkust, Gunnug Singgalang, 1800 m; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 216.

Distribution: Indonesia (Sumatra).

References: (**tx**) Schedl 1958k: 143, 1979c: 216.

***samoanus* (Eggers)** 1928d: 174 (*Dryocoetes*). Lectotype, sex?; Apia; Eggers Collection, in NHMW, Wien, designated by Schedl 1979c: 218.

Distribution: Samoan Islands.

References: (**hb**) Beeson 1929: 233. (**ds**) Beeson 1929: 233, 1938b: 287; Murayama 1957c: 608. (**tx**) Beeson 1929: 233; Eggers 1928d: 174; Murayama 1957c: 608; Schedl 1936g: 527, 1951k: 136, 1979c: 218.

***sarawakensis* (Schedl)** 1954c: 155 (*Dryocoetes*). Lectotype, sex?; Borneo, Sarawak, Mt. Penrissen, 4500 ft.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 219.

Distribution: Indonesia (Sarawak in Borneo).

References: (**tx**) Browne 1970: 563; Schedl 1954c: 155, 1979c: 219.

***scabricollis* Browne** 1980b: 385. Holotype ♂; Buluma (New Britain) to Nagoya (Japan) imported log; BMNH, London.

Distribution: New Britain Island.

References: (**tx**) Browne 1980b: 385.

***scotti* Eggers** 1936b: 31. Holotype ♂; Abyssinia: Jem Jem Forest, ca 8000 ft.; BMNH, London, type damaged.

Distribution: Africa (Ethiopia).

Hosts: *Euphorbia* sp.

References: (**ds**) Schedl 1961k: 655. (**tx**) Eggers 1936b: 31; Schedl 1961k: 655.

***sedlaceki* (Schedl)** 1975f: 353 (*Ozodendron*). Holotype ♀; New Guinea NW, Wisselmeren, Enarotadi, 1850–1900 m; BPBM, Honolulu.

Distribution: New Guinea.

References: (**tx**) Schedl 1975f: 353.

***silvaniae* Schedl** 1982: 285. Holotype, sex?; Transvaal: Graskop Forest; Schedl Collection in NHMW, Wien.

Distribution: Africa (South Africa).

References: (**tx**) Schedl 1982: 285.

***siporanus* (Eggers)** 1923: 163 (*Dryocoetes*). Holotype, sex?; Sipora auf der Insel Mentawei; MCG, Genova.

Distribution: Indonesia (Mentawei Island).

References: (**ds**) Murayama 1957c: 608. (**tx**) Eggers 1923: 163; Murayama 1957c: 608.

***subacuminatus* (Schedl)** 1939e: 347 (*Pelicerus*). Syntypes ♂; Malaya, Selangor: Kepong; BMNH, London.

Distribution: Asia (Malaya/ Thailand).
Hosts: *Elaterospermium tapos*.
References: (**ds**) Beaver & Browne 1975: 289; Beeson 1961: 290; Browne 1961c: 86. (**tx**) Browne 1965a: 195; Schedl 1939e: 347–348, 1979c: 239.

***subgranosus* (Schedl)** 1973f: 72 (*Eidophelus*). Holotype ♀; Waikaiuna, Normanby Isl., M. Bay Distr., 0–50 m; AMNH, New York.
Distribution: New Guinea.
Notes: (1) Wood examined the holotype and referred it to *Cyrtogenius* (Wood 1983 notes, p. 15).
References: (**tx**) Schedl 1973f: 72, 1979c: 241.

subgranosus affinis Schedl 1973f: 73. Holotype, sex?; Waikaiuna, Normanby Isl., M. Bay Distr.; AMNH, New York.
Notes: (3) Wood examined the holotype and referred it to *Cyrtogenius* (Wood 1983 notes, p. 15).
References: (**tx**) Schedl 1973f: 73, 1979c: 241.

***subsulcatus* (Schedl)** 1979g: 102 (*Eidophelus*). Holotype, sex?; Baipaa, Central District; New Guinea: Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1979g: 102.

***sulcatus* (Schedl)** 1979g: 103 (*Eidophelus*). Holotype, sex?; New Guinea: Bulolo, Morobe District, Upper Manki L. A.; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
Notes: (1) Wood examined the holotype and referred it to *Cyrtogenius* (Wood 1983 notes, p. 15).
References: (**tx**) Schedl 1979g: 103.

***suturalis* Browne** 1970: 564. Holotype, sex?; Singapore; BMNH, London.
Distribution: Asia (Malaya).
References: (**tx**) Browne 1970: 564.

***tenuis* (Schedl)** 1958b: 102 (*Carposinus*). Syntypes, sex?; Malaya, Kelantan; BMNH, London and Schedl Collection in NHMW, Wien.
Distribution: Asia (Malaya).
Notes: (1) Schedl, in his collection, incorrectly placed this species in *Taphrostenoxis*, nomen nudum.
References: (**ds**) Browne 1961c: 86, 1981a: 126, 1981b: 599. (**tx**) Schedl 1958b: 102, 1979c: 251, 1979c: 251.

***tuberculatus* (Schedl)** 1973f: 72 (*Eidophelus*). Holotype, sex?; Mt. Dayman, Maneau Range, N. Slope, M. Bay Distr., 700 m; AMNH, New York.
Distribution: New Guinea.
Notes: (1) Wood examined the holotype and referred it to *Cyrtogenius* (Wood 1983 notes, p. 15).
References: (**tx**) Schedl 1973f: 72, 1979c: 257.

***tuberculifer* Schedl** 1950h: 109. Holotype, sex?; Madagascar; Schedl Collection in NHMW, Wien.
Distribution: Madagascar.
Hosts: *Canarium boivin, C.* spp., *Clerodendron* sp., *Ficus* sp., *Maesa lanceolata, Pachytrophe dimepate*.
Notes: (3) Schedl 1953d: 89 (described male).
References: (**hb**) Schedl 1977b: 93. (**ds**) Schedl 1970d: 233, 1977b: 93. (**tx**) Nunberg 1961a: 340; Schedl 1950h: 109, 1953d: 69, 89, 1977b: 93, 1979c: 258.

***unicus* (Schedl)** 1975f: 355 (*Eidophelus*). Holotype ♀; Upper Manki logging area, Bulolo, Morobe District: Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1975f: 355, 1979c: 260.

***variipennis* (Schedl)** 1971c: 386 (*Xyleborus*). Holotype ♀; Malaya, Kepong; BMNH, London.
Distribution: Asia (Malaya).
Hosts: *Elaeocarpus petiolatus*.
References: (**tx**) Schedl 1971c: 386–387, 1979c: 264.

***vaticae* (Nunberg)** 1961b: 617 (*Taphroborus*). Holotype, sex?; Malay Peninsula, Kelantan (Mengkebang); BMNH, London.
Figures: Nunberg 1961b: 628–629.
Distribution: Asia (Malaya).
Hosts: *Vatica* sp.
References: (**ds**) Browne 1981a: 126, 1981b: 599, 1985a: 191; Ohno, Yoneyama, & Nakazawa 1987: 93. (**tx**) Browne 1965a: 195; Nunberg 1961b: 617, 628–629; Schedl 1961k: 651, 1962n: 699.

Genus *Dryocoetes* Eichhoff

DRYOCOETES EICHHOFF 1864: 38. Type-species: *Bostrichus autographus* Ratzeburg, subsequent designation by Hopkins 1914: 121.
Anodius Motschulsky 1860: 155. Type-species: *Bostrichus autographus* Ratzeburg, subsequent designation by Wood 1974e: 232. International Commission on Zoological Nomenclature (ICZN) 1979: 149 (name suppressed).
References: (**tx**) ICZN 1979: 149; Motschulsky 1860: 155; Wood, S. L. 1974e: 232.
Dryocoetinus Balachowsky 1949a: 180. Type-species: *Bostrichus villosus* Fabricius, original designation. Synonymy: Schedl 1958k: 143.
References: (**tx**) Balachowsky 1949a: 176, 180; Bright 1963: 107; Endrodi 1957: 417; Schedl 1958k: 143.
Keys: Bright 1963: 107 and Wood 1982b: 724 for North America; Reitter 1913a: 75 for Europe; Murayama 1957: 594 for Japan; Yin, Huang, & Li 1984: 144 for China.
References: (**ay**) Fuchs 1912; Nobuchi 1969a: 61; Nusslin 1911, 1912. (**ec**) Balazy & Michalski 1964a; Balch 1941: 1–4; Butovitsch & Spaak 1939: 1–120; Chapman 1957: 3–4; Davidson & Robinson 1965: 488–498; Hewitt 1914: 501, 1917: 1–70; Lindquist 1970a: 980; Nickle 1976b; Wisniewski 1979b. (**hb**) Blackman 1950: 326, 333, 336; Escherich 1923: 51, 476, 487; Felt 1906: 337; Gardner 1934: 4, 12–13; Judeich & Nitsche 1895: 449; Schedl 1958d: 188; Wood, S. L. 1986a: 74. (**ds**) Bright & Stark 1973: 74; Hagedorn 1910d: 65–68; Patterson & Hatch 1945: 154; Provancher

1877: 568; Schedl 1934f: 1642, 1966b: 41; Scheerpeltz & Winkler 1934: 257; Swaine 1909: 101; Tredl 1917: 17; Wood, S. L. 1986a: 74. (**tx**) Arnett 1960: 1043, 1968: 1043; Balachowsky 1949a: 177–182; Barbey 1901: 100; Beal & Massey 1945: 53, 61, 159; Bedel 1888b: 396, 400; Beeson 1938: 257, 1941: 372–373; Blackman 1922b: 78, 120, 1950; Blandford 1894d: 54, 91–92, 96, 98, 1895: 84, 1897: 183, 1898b: 186; Bright 1963: 103–115, 1975, 1978: 124; Browne 1961c: 83; Chamberlin 1939: 463–464, 1958: 187–191; Choo 1983: 82–84; Choo, Woo, & Nobuchi 1988b; Dodge 1938: 54–55; Eggers 1937: 80, 1940: 123–141; Eichhoff 1864: 38, 1878a: 388, 1878b: 35, 55–56, 283, 1881a: 261; Endrodi 1957b: 417; Ferrari 1867a: 27–28; Gardner 1934: 12–13; Hagedorn 1908: 377, 1910a: 88–89, 93–96, 1910b: 2, 1912: 354; Hopkins 1914: 121, 132, 1915b: 9, 49–50, 1915c: 192–226; Karaman 1972: 111; Kostin 1973: 257; Krivolutskaya 1958: 153–155; Kurenzov 1941: 165–175; LeConte 1868: 167, 1876: 361; LeConte & Horn 1883: 518; Lovendal 1889: 23–24, 66; Murayama 1957; Niisima 1909: 151; Nishiguchi 1959: 270–274; Pfeffer 1955: 168–173, 1989a: 57; Reitter 1894: 68–69, 87–89, 1906: 713, 1913a: 75–78; Saalas 1914: 84–85; Schedl 1936g, 1939i: 384, 1940c: 203–208, 1957d: 1–162, 1958k: 143, 1961k: 655, 1962n: 697–699, 1962p: 205, 1965e: 349–379, 1981b: 70; Schimitschek 1937: 50–53; Schreiner 1882: 246–247; Sokanovskii 1930: 801–802; Spessivtsev 1922: 473, 1931: 50; Stark 1952: 323–339; Stebbing 1907: 38, 1908: 11–12; Strohmeyer 1911: 17; Swaine 1913: 87–92, 1918a: 128–133, 1924: 1–26; Wachtl 1876: 460; Wichmann 1927: 348; Wood, S. L. 1974e, 1978a: 113, 1978e: 232–233, 1982b: 723–731, 1986a: 74–75; Yin & Huang 1981: 564; Yin, Huang, & Li 1984: 144.

***aceris* Krivolutskaya** 1968: 58. Holotype, sex?; Kurile Islands [not seen; not located].
Figures: Krivolutskaya 1968: 59 (adult).
Distribution: Asia (E USSR).
Hosts: *Acer pictum*.
References: (**tx**) Krivolutskaya 1968: 58–59.

***affaber* (Mannerhein)** 1852: 359 (reprint p. 77) (*Bostrichus*). Holotype ♀; Sitka Island, Alaska; MZU, Helsinki.
Figures: Bright 1963: 112, 1976d: 203, 211, Kusch 1967: 10.
Distribution: North America (Alaska/ all provinces of Canada/ N Arizona, Colorado, Idaho, Maine, Michigan, Minnesota, Montana, New Hampshire, New Mexico, New York, North Carolina, Oregon, Pennsylvania, South Dakota, Tennessee, Utah, Washington, West Virginia, Wisconsin, Wyoming in USA).
Hosts: *Picea* spp., rare in *Abies* spp., *Pinus* spp., *Larix* sp., *Tsuga heterophylla*.
Notes: (1) LeConte 1876: 361 (to *Dryocoetes*).
References: (**ay**) Bright 1963: 105; Farris 1969: 531; Thomas, J. B. 1957: 4, 1967. (**bv**) Baker, W. L. 1972: 263; Furniss, M. M., Baker, & Hostetler 1976: 1300. (**cn**) Balch 1941, 1945; Beckwith 1972; Blackman 1950; Brown, R. L. & Winter 1981; Chenier & Philogene 1989; Doane et al. 1936; Hatch 1938: 194; Hoffmann 1942b: 400; Hopkins 1899b: 21, 27, 1901b: 8; Keen 1938: 128, 1952c: 165; Lindquist, O. H. & Syme 1981: 40; Lyons 1956: 600; Martin, J. L. 1965; Massey & Wygant 1954: 21; McGuffin & Barker 1947: 57; Packard 1890: 810, 857; Rodary 1959: 852; Schuder 1969: 76; Smith, G. W. & Melvin 1974a, 1974b; Swaine 1918a: 130, 132, 1924d: 9, 19; Swaine et al. 1924:pl. 21; Syme & Nystrom 1988: 40; Thomas, J. B. 1958: 94.; Wong, H. R. & Melvin 1973. (**ec**) Beckwith 1972b; Bedard 1933a; Blackman & Stage 1918; Felt 1906: 752; Furniss, R. L. & Carolin 1977: 378; Gobeil 1936b; Hopkins 1901b: 8; Keen 1938: 128; Knight 1961: 212; Massey & Wygant 1954: 21; Matthews 1970; McAlpine 1964; Morley 1939: 244; Price 1966: 241; Rodary 1959: 852; Ross, D. A. 1968; Swaine 1924d: 9; Thomson, J. B. 1958: 94; Tomalak, Welch, & Galloway 1989b; Werner & Holsten 1984; Wichmann 1955a: 102. (**hb**) Baker, W. L. 1972: 263; Beckwith 1972b; Beckwith, Wolff, & Zasada 1977; Blackman 1919: 1–10, 1950; Blackman & Stage 1918; Bright 1963: 111, 1976d: 128; Chamberlin 1939: 467; Chittenden 1890; Doane et al. 1936; Felt 1906: 752; Furniss, R. L. & Carolin 1977: 378; Gara & Holsten 1975; Gobeil 1936b, 1936c; Godwin & Odell 1965: 213–219; Harrington 1891: 26, 1902b; Hopkins 1899b: 21, 1901b: 18; Keen 1938: 128, 1952c: 165; Knight 1961: 213; Lyons 1956: 600; Massey & Wygant 1954: 21; Morley 1939: 244; Packard 1890: 857; Pierce 1907: 292; Schwarz 1888a: 80, 1895a: 143; Swaine 1918a: 130, 132, 1924d: 9; Swaine et al. 1924:pl. 21; Watson 1928: 620; Wong, H. R. & Melvin 1973; Wood, S. L. 1982b: 729. (**ds**) Anonymous 1926c: 520; Ashworth 1977, 1980; Ashworth & Cavancara 1983; Austara et al. 1983; Beckwith 1972a; Bedard 1938a; Blackman 1950; Blatchley & Leng 1916: 613; Bright 1963: 111, 1971b: 126, 1976d: 128; Broun 1934; Brown, R. L. & Winter 1981; Chamberlin 1925, 1939: 467, 1958: 189–190; Chittenden 1890; Dodge 1938; Drooz 1985: 39; Eidmann 1935; Elias 1982b, 1982c, 1982d, 1983, 1985: 39; Elias, Short, & Clark 1986; Evans, D. 1983: 32; Evans, D., Lowe, & Hunt 1978; Farris 1969: 531; Furniss, R. L. & Carolin 1977: 378; Gara & Holsten 1975; Gast et al. 1989: 385; Gautreau 1974: 5; Gemminger & Harold 1872: 2687; Hagedorn 1910d: 65; Hamilton 1893, 1894a: 35; Harrington 1891: 26; Henshaw 1885: 148; Hoffmann 1952b: 400, 1956: 90; Hopkins 1893a: 137–138, 1893b: 212; Hopping 1922; Horion 1951; Hubbard & Schwarz 1878a: 666; Keen 1929: 42, 1938: 128, 1952c: 165; Kleine 1913b: 135, 1934a: 155; Kusch 1967;

Leng 1920: 342; Leonard 1928: 520; Lindquist, O. H. & Syme 1981: 40; Morgan, A. V. & Morgan 1980: 1110; Murayama 1957c: 606; Patterson & Hatch 1945: 154; Pilny, Morgan, & Morgan 1987; Ross, D. A. 1968; Ruppel 1967: 37; Schuder 1969: 76; Schwarz 1888a: 80; Smith, G. J. & Melvin 1974a, 1974b; Still, Tidsbury, & Melvin 1974a, 1974b; Susut & Melvin 1974; Swaine 1909: 101, 1919b: 9; Syme & Nystrom 1988: 40; Van Dyke 1924: 26; Werner & Holsten 1984; Wichmann 1955a: 102; Wickham 1896a: 309; Winter, T. G. 1983: 9; Wood, S. L. 1972a: 416, 1982b: 729. (**tx**) Beckwith 1972a, 1972b; Benoit 1985: 95; Blatchley & Leng 1916: 613; Bright 1963: 107–108, 112, 1976d: 128, 203, 211; Chamberlin 1939: 467, 1958: 189–190; Dodge 1938: 55–56; Evans, D. 1983: 32; Fall 1926: 208; Hagedorn 1910a: 96; Hopkins 1915b: 50; Inouye & Nobuchi 1959a: 122–123; Keen 1929: 42; Kusch 1967: 10; LeConte 1857: 22, 1868: 162, 1876: 361; Lindquist, O. H. & Syme 1981: 40; Mannerheim 1852: 359, 1853: 235; Murayama 1957c: 606; Pardy 1977, 1983; Schwarz 1895a: 143; Swaine 1909: 101, 1912: 350–351, 1918a: 130, 132, 1919b: 9; Syme & Nystrom 1988: 40; Thomas, J. B. 1957: 4, 1967; Titus, Meikle, & Harrison 1985: 59; Wood, S. L. 1969c: 114, 1972a: 416, 1982b: 729. (**ms**) Chenier & Philogene 1989; Hatch 1938: 194.

pubescens Swaine 1912a: 350. Holotype ♀; Colorado [USA]; Cornell University Collection, Ithaca, New York. Synonymy: Bright 1963: 111.
References: (**cn**) Swaine 1918a: 130, 132. (**hb**) Chamberlin 1939: 468; Swaine 1918a: 130, 132. (**ds**) Chamberlin 1939: 468; Kleine 1913b: 136; Larroche & Torossian 1971; Leng 1920: 342; Murayama 1957c: 606; Wood, S. L. 1951a: 128. (**tx**) Bright 1963: 111, 1967b: 674; Chamberlin 1939: 468; Eichhoff 1878b: 286; Murayama 1957c: 606; de Ruette 1970: 100; Swaine 1912a: 350, 1918a: 130, 132; Wood, S. L. 1951a: 128.

piceae Hopkins 1915b: 51. Holotype ♀; Cranesville, West Virginia [USA]; USNM, Washington. Synonymy: Bright 1963: 111.
References: (**cn**) Blackman 1919: 149, 1950; Connola et al. 1956; Swaine 1918a: 130. (**ec**) Thompson, W. R. & Simmonds 1964: 128, 1965: 16. (**hb**) Baker, W. L. 1972: 264; Beal & Massey 1945: 160; Blackman 1950; Chamberlin 1939: 468; Drake 1921; Swaine 1918a: 130. (**ds**) Beal & Massey 1945: 160; Beaulne 1956; Blackman 1950; Blatchley & Leng 1916: 613; Chamberlin 1925, 1939: 468; Drake 1921: 201; Kleine 1934a: 155; Leng 1920: 342; Murayama 1957c: 606. (**tx**) Beal & Massey 1945: 160; Blatchley & Leng 1916: 613; Bright 1963: 111; Chamberlin 1939: 468; Hopkins 1915b: 50–52; Murayama 1957c: 606; Swaine 1918a: 130, 132.

***affinis* Blandford** 1894c: 93. Holotype, sex?; Oyayama, Japan; BMNH, London.
Distribution: Asia (Japan).
References: (**ds**) Blandford 1894c: 93; Hagedorn 1910d: 65; Kleine 1913b: 135, 1914b: 258; Murayama 1954b: 172, 1957c: 588, 600. (**tx**) Blandford 1894c: 93; Hagedorn 1910a: 96; Murayama 1954b: 172, 1957c: 588, 600; Schedl 1934f: 1642.

***alni* (Georg)** 1856: 59 (*Bostrichus*). Syntypes, sex?; Luneburg, Germany; not located.
Figures: Grune 1979: 90.
Distribution: Asia (Turkey), Europe (Austria/ Belgium/ Bulgaria/ Corsica/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Hungary/ Italy/ Norway/ Poland/ Romania/ Scotland/ Sweden/ W USSR).
Hosts: *Alnus incana*, *A. glutinosa*, *A. viridis*, *Corylus avellana*, *Fagus orientalis*.
References: (**ay**) Escherich 1923b: 487; Murayama 1933a: 7. (**bv**) Grune 1979: 91. (**cn**) Acatay 1943a: 66; Escherich 1923b: 487; Georgescu et al. 1957: 357, 405; Grandi 1951; Kholodkovskii 1912: 319; Palm 1948b: 214, 1951: 232; Nusslin 1913: 283; Pierce, W. D. 1917: 12; Rhumbler 1922: 326, 1927: 343; Saalas 1949: 342, 374; Schimitschek 1937c: 53, 1955a: 141, 1955c: 84; Schwerdtfeger 1944a: 175, 1957a: 182. (**ec**) Benick 1952; Heqvist 1963: 153, 1967: 69; Kangas 1942b; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1983; Kleine 1908c: 217, 1909a: 49, 77, 1944: 70; Kurenzov 1934a: 54; Michalski & Ratajczak 1989; Novak 1952: 416; Nuorteva 1956a: 17, 1957b: 53, 1968a, 1970; Palmen 1946: 194; Pfeffer 1932a: 19; Saalas 1930: 118, 1949: 342, 374; Schimitschek 1955a: 141; Schwerdtfeger 1944a: 175, 1957a: 182; Smetana 1958: 95. (**hb**) Acatay 1943a: 66; Barbey 1901: 27, 101; Bruce 1944: 28; Dombrowsky 1887, 1888; Eichhoff 1881a: 52, 262; Elfving 1902; Escherich 1923b: 487; Fuchs 1904a, 1906b; Gillanders 1908; Gomostaev 1916: 313; Grandi 1951; Gyorfi 1957; Henschel 1876a: 240, 1895a: 188; Kangas 1940b; Karpinski 1933b: 29; Kholodkovskii 1912: 319; Lengerken 1939: 64, 1954: 84; Lindemann 1881a: 237; Munro 1926: 70; Nunberg 1929c: 121; Nuorteva 1968a, 1970; Nusslin 1898: 275, 1913: 283; Palm 1951: 232, 1954a: 185; Pfeffer 1942a: 16, 1989a: 58; Postner 1974: 424; Rhumbler 1922: 326, 1927: 343; Saalas 1913a: 68, 85, 1949: 342, 374; Schedl 1981b: 71; Schimitschek 1955a: 141; Schwerdtfeger 1944a: 175, 1957a: 182, 1981: 188; Shatilov 1985; Spessivtsev 1913a: 93; Stark 1926a: 335, 1952: 332; Wachtl 1876a: 460. (**ds**) Allen 1973; Ammann & Knabl 1923; Arnoldi et al. 1955: 704; Bejer-Petersen & Jorum 1977: 21; Benick 1921; Bergroth 1886; Borchert 1951; Brakman 1966: 205; Brancsik 1906; Buresh & Lazarov 1956; Butovitsch & Heqvist 1947; Calwer 1884, 1893;

Chorbadzhievo 1924d; Chrystal 1922; Crowson 1971: 51; Debatisse 1945; Endrodi 1957b: 417, 1958b: 307; Escherich 1923b: 487, 1932b; Fowler 1891; Fuchs 1904a, 1905a, 1906b; Gemminger & Harold 1872: 2687; Gerhardt 1903b; Gornostaev 1917; Gozis 1875: 80; Grill 1895: 312; Grune 1979: 91; Hagedorn 1910d: 65; Hansen, V. 1939, 1956, 1964: 460; Hellen 1947; Helliesen 1916: 84; Henschel 1895a: 188; Heyden, Reitter, & Weise 1883: 182, 1891: 673, 1906: 713; Kangas 1940: 41–50, 1942b; Karpinski 1932b: 54, 1933b: 29; Kersten 1933: 75; Kiefer et al. 1942: 529; Kinelski et al. 1959: 245; Klefbeck & Sjoberg 1960: 230; Kleine 1912a: 268, 1913a: 35, 1913b: 135, 1934a: 155; Kloft & Hinks 1945: 218; Koch 1977: 31; Kolbe, W. 1918: 211; Kraatz 1869: 59; Kurenzov 1934a: 54, 1938a: 66; Kurir 1947c: 37; Lacordaire 1866: 383; Langhoffer 1915c: 158; Leclercq 1971; Lindemann 1884b: 264; Lomnicki 1913b: 148; Lovendal 1890c: 211; Lucht 1987: 277; Lundberg 1977, 1981: 151; Matthews & Fowler 1883: 42; Meinert 1887: 70; Mirzoian 1950: 140; Mosley 1893: 193; Munro 1926: 4–77; Munster 1928: 291; Murayama 1957c: 607; Negru 1968a: 456; Novak, P. 1952: 416, 1964; Nunberg 1928b: 88, 109, 1954: 57; Nuorteva 1971: 71; Nusslin 1898: 275; Palm 1943: 85, 1947a: 173, 1959: 24, 32, 1960: 351; Palmen 1946: 194; Penecke 1898: 254; Pfeffer 1924b: 472, 1930b: 119, 1931b: 74, 1989a: 58; Pierce, W. D. 1917: 12; Pittioni 1943: 176; Poppius 1900: 109; Postner 1974: 424; Prossen 1913: 84; Rapp 1934: 734; Reitter 1894a: 88, 1916: 292; Roubal 1941: 267; Saalas 1913a: 68, 85, 1930: 118, 1931: 67; Sahlberg 1900: 106; Sainte-Claire & Mequignon 1938: 447; Schaufuss 1915: 1236; Schaum 1859: 96, 1862: 101; Schedl 1980a: 18, 1981b: 71; Schilsky 1909: 189; Schiodte 1873: 103; Schmaus 1960: 32; Schwerdtfeger 1981: 188; Seidlitz 1891a: 567, 1891b: 612; Stark 1926a: 335, 1926b: 103, 1926j: 126, 1927b: 89, 1931a: 26, 1936e: 142, 1952: 332; Stein 1868: 114; Stierlin 1895: 446; Strand 1946: 600; Tredl 1907: 18; Wachtl 1876a: 460; Wichmann 1909b: 173, 1927a: 69; Winter, T. G. 1983: 9; Yanovskii & Tegshzhargal 1985: 415; Zinovjev 1955: 187, 191; Zumr 1983b. (**tx**) Balachowsky 1949a: 181; Barbey 1901: 27, 101; Chorbadzhievo 1924d; Dombrowsky 1887, 1888; Duffy 1953; Eggers 1910f: 560–561, 1911a: 121–122, 1912: 49, 1923: 163, 1933f: 8–9, 1940f: 44; Eichhoff 1864: 38, 1868d: 419, 1876a: 378–379, 1878b: 288, 1881a: 52, 262, 1883a: 114, 140; Endrodi 1957a, 1957b; Escherich 1923b: 487; Ferrari 1867a: 27, 29, 1867b: 114; Fleischer 1927; Gebien 1907: 197; Georg 1856: 59; Gillanders 1908; Grune 1979: 90, 91; Hagedorn 1904e, 1910a: 96; Hansen, V. 1956, 1964: 460; Harold 1875; Henschel 1876a: 240, 1895a: 188; Hopkins 1915b: 49; Jacquelin du Val & Fairmaire 1868: 112; Kuhnt 1913: 1059; Lacordaire 1866: 383; Lindemann 1881a: 237; Lovendal 1889b: 67, 1890c: 211, 1898: 177; Lucht 1987: 277; Murayama 1933a: 7, 1957c: 607; Nunberg 1929c: 121, 1954: 57; Perris 1866: 195–196; Pfeffer 1932b: 20, 1942a: 16, 1955a: 172; Portevin 1935: 327; Postner 1974: 424; Quaschik 1953: 35; Reitter 1894a: 88, 1913a: 78, 1916: 292; Rhumbler 1922: 326, 1927: 343; Rye 1874: 299; Saalas 1913a: 68, 85, 1949: 342, 374; Schedl 1934f: 1642, 1980a: 18, 1981b: 71; Schimitschek 1937c: 53, 1955c: 84; Seidlitz 1891a: 567, 1891b: 612; Sharp 1870: 256; Sokanovskii 1930: 801; Spessivtsev 1913a: 93–94, 1921: 53, 1922a: 474, 492, 1925a: 175, 1925b: 31; Stark 1952: 332; Stierlin 1898: 446; Stresemann et al. 1986: 351. (**ms**) Eichhoff 1868d: 419; Escherich 1932b; Schimitschek 1930b: 407.

marshami Rye 1869: 188 (*Tomicus*). Syntypes, sex?; Prestwich, England; not located. Synonymy: Sharp 1870: 256.

References: (**ds**) Gemminger & Harold 1872: 2689; Rye 1869: 187–188; Sharp & Fowler 1893: 34. (**tx**) Eichhoff 1876a: 378; Sharp 1870: 256.

similis Eggers 1911a: 121. Holotype, sex?; Vizzavona, Corsicae; Leonhard Collection. Synonymy: Balachowsky 1949a: 181.

References: (**ds**) Kleine 1913b: 136, 1934a: 155; Sainte-Claire 1914: 474; Schaufuss 1915: 1236. (**tx**) Balachowsky 1949a: 181; Eggers 1911a: 121–122, 1933f: 9; Endrodi 1957b: 417; Portevin 1935: 327; Reitter 1913a: 78; Schedl 1934f: 1643.

leonhardi Eggers 1912a: 49. Syntypes 2, sex?; Bulgaria; Eggers Collection, in NHMW, Wien. Synonymy: Sokanovskii 1930: 801.

References: (**cn**) Chorbadzhievo 1929. (**hb**) Chorbadzhievo 1929; Tschorbadjiev 1929: 167. (**ds**) Buresh & Lazarov 1956; Chorbadzhievo 1929; Kleine 1913b: 136; Murayama 1957c: 607; Pfeffer 1936: 90; Schaufuss 1915: 1236; Tschorbadjiev 1929: 167; (**tx**) Eggers 1912a: 49, 1933: 9; Murayama 1957c: 607; Reitter 1913a: 78; Schedl 1934f: 1642, 1979c: 183; Sokanovskii 1930: 801.

***ater* Eggers** 1925: 157. Holotype, sex?; Tenasserim; Prague Museum.

Distribution: Asia (Burma).

References: (**ds**) Murayama 1957c: 607. (**tx**) Eggers 1925: 157; Murayama 1957c: 607.

***autographus* (Ratzeburg)** 1837: 160 (*Bostrichus*). Syntypes, sex?; Sudlichen Deutschland (Hr. Warnkonig) bis Russland und Schweden; not located.

Figures: Balachowsky 1949a: 178–179, Bevan 1987: 113, Bright 1963: 112, Chararas 1962c: 412, Grune 1979: 90, Joly 1976b:fig. 141, Kusch 1967: 10, Li, Shi, & Ao 1984: 265, Nobuchi 1966d:pl. 2, Pfeffer 1989a:pl. 7.

Distribution: Africa (Algeria/ Madeira Island),

Asia ("Manchuria", Shanxi in China/ Japan/ Korea/ Taiwan/ Sakhalin Island, Siberia in E USSR), Europe (Austria/ Belgium/ Bulgaria/ Corsica/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Hungary/ Italy/ Netherlands/ Norway/ Poland/ Romania/ Spain/ Sweden/ Switzerland/ W USSR), North America (Alaska/ Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland, Northwest Territories, Ontario, Quebec, Saskatchewan, Yukon in Canada/ California, Colorado, Maine, Michigan, Minnesota, Montana, Nevada, New Hampshire, New Mexico, New York, North Carolina, Oregon, Pennsylvania, South Dakota, Tennessee, Utah, Virginia, Washington, West Virginia, Wisconsin, Wyoming in USA), South America (introduced into Brazil).

Hosts: *Picea* spp., *Pinus* spp., *Abies* spp., *Larix* spp., *Pseudotsuga menziesii*, *Tsuga heterophylla*.

Notes: (1) The North American population is statistically distinguishable from that of Europe and Asia (SLW). (3) Karpinski 1948: 148 (used *polonicus*, apparently as a nomen nudum, synonymy by Nunberg 1956: 161).

References: (**ay**) Bright 1963: 108; Bugnion 1887b; Chapman 1969b, 1972; Escherich 1923b: 429, 487, 598; Hadorn 1933; Hopkins 1894g; Kempers 1932: 69; Leisewitz 1906: 91; Lekander 1959b: 33; Munro 1917b: 147; Nunberg 1928a: 140; Nusslin 1911a: 60, 378, 1912b: 102; Sasakawa & Yoshiyasu 1983; Scherb 1971; Sedlaczek 1902b: 244; Thomas, J. B. 1967; Thomas, J. B. & Krywienczyk 1966. (**bv**) Annila 1975: 8; Baker, W. L. 1972: 263; Butovitsch 1971; Chapman 1966: 55; Chararas 1982; Chararas & Deschamps 1962; Chenier & Philogene 1989b; Daterman, Rudinsky, & Nagel 1965; Dyer & Chapman 1965: 48; Eidmann 1987; Furniss, M. M., Baker, & Hostetler 1976: 1300; Grune 1979: 91; Hosking & Knight 1975; Kohnle 1985; Kohnle & Klimetzek 1984; Kohnle & Vite 1984b; Leclerq, Simon, & Verstraeten 1976; Luitjes 1976; Magema, Gaspar, & Severin 1982; Mozolevskaya, Lebedeva, & Galaseva 1979; Naumann-Etienne 1978a; Nuorteva 1956c: 28; Nuorteva & Nuorteva 1968; Prell 1930c: 639, 1931: 364; Rozhkov 1970: 140; Rudinsky 1966b: 356–361, 1966c: 218–219; Rudinsky & Daterman 1964a; Saarenmaa 1978; Turnbull & Franklin 1980; Winter, K. 1980; Zhong & Schowalter 1989. (**cn**) Anonymous 1929c: 644, 1980g; Ass & Funtikow 1941; Barbey 1901: 101, 1906a, 1925: 73; Beckwith 1972; Brown, R. L. & Winter 1981; Chararas 1961b: 70, 1961c: 93; Chenier & Philogene 1989; Chorbadzhievo 1929; Eckstein 1926: 579; Eidmann 1965c, 1987; Escherich 1917: 97–115, 1923b: 429, 487, 598; Esterberg 1959; Felt 1906: 672, 1926: 247, 271, 1930a: 271; Fleischer 1877a; Francke-Grosmann 1954a; Grandi 1951; Hanson, H. S. 1940a; Hartig 1861: 325, 1877: 194; Hendrickson 1965: 595; Herlein 1878; Herrick 1935: 138; Hess 1898: 349, 1907: 245; Hess & Beck 1914: 269, 1927: 324; Hopkins 1892: 258, 1894: 270, 1899c: 252, 316, 445, 1904a: 25; Inouye 1955; Inouye & Yamaguchi 1955a: 235; Ishikura 1966; Jaensch 1938: 49; Jahn & Sinreich 1959: 1; Joly 1976; Judeich & Nitsche 1895: 454; Juutinen 1960: 24; Koch 1910: 17; Kovacevic 1952: 69; Kozikowsky 1929: 253; Lindgren 1980a: 62; Lindquist, O. H. & Syme 1981: 40; Marcu 1926c: 64; Marie 1924: 328–330; Martin, J. L. 1965; Mathiesen-Kaarik 1953: 6; Merker & Stattler 1952: 135–143; Mokrzecki 1925c: 44; Muller 1912: 186; Mumford 1960: 24, 1965: 18; Nilssen 1978a: Nosek 1951: 106, 1952b: 100; Novak, V. 1959b: 73, 1967; Nuorteva & Nuorteva 1968; Nusslin 1913: 231; Ohnesorge 1955: 279; Pfeffer 1948a: 800, 1949b: 150, 1950c: 2; Pierce, W. D. 1917: 69; Rhumbler 1922: 326, 1927: 342; Saalas 1949: 342, 373; Sajevyc 1928: 329; Schimitschek 1932c: 250, 1935a: 197, 1937c: 53, 1938b: 114, 1947g: 191, 1949b: 165, 1952a: 208, 1955a: 66, 1955c: 84, 1961a: 154; Schneeberg 1925: 498; Schwerdtfeger 1944a: 180, 1957a: 186; Sedlaczek 1921: 335, 1936: 200; Shiraki 1952; Sinreich 1961: 165; Smith, G. J. & Melvin 1974a, 1974b; Smith, J. B. 1900: 363; Spaic 1956: 88; Syme & Nystrom 1988: 40; Titova 1966; Tragardh & Butovitsch 1935: 1–268, 1936: 578; Vasechko 1964; Vite 1984b; Wachtl 1901: 381; Wardle 1929: 325; Weber, H. 1926: 579; Wichmann 1927b: 361; Wilke 1931: 641; Wolff & Krausse 1922: 91; Wong, H. R. & Melvin 1973; Zethner-Moller & Rudinsky 1967: 903; Zieger 1948a: 378. (**ec**) Adeli 1964: 397; Annila 1975: 11, 1977; Apfelbeck 1916b; Ashmead 1893b; Ass & Funtikow 1941; Bakshi 1950, 1951; Balachowsky & Chararas 1964; Balazy 1964, 1965a, 1968; Balazy & Michalski 1960, 1964a, 1964b; Barbey 1906a, 1927; Beran 1936; Bovey 1970; Bramannis 1940; Buhl 1989; Bushing 1965: 459; Butovitsch 1971; Chararas 1957a, 1957c: 145–155, 1957d, 1958b, 1958c: 1653, 1959c: 113–129, 1959d, 1959e, 1959g: 215–233; Cooreman 1963: 45; Deyrup & Gara 1978: 275; Eidmann 1965c; Elliot & Morley 1907; Fleischer 1877a, 1877b; Francke-Grosmann 1931; Fuchs 1930, 1937; Furniss, R. L. & Carolin 1977: 378; Gornostaev 1917: 308–315; Graham 1969: 874; Grossmann 1931a; Grunwald 1986; Hellrigl & Schwenke 1985: 48; Heqvist 1963: 153; Hirschmann 1960, 1971a, 1971b: 40; Hirschmann & Wisniewski 1982, 1983; Hirschmann & Zirngiebl-Nicol 1961; Hopkins 1891b: 258; Inouye & Yamaguchi 1955a: 235; Inouye et al. 1955: 62; Jahn & Sinreich 1960b; Jakaitis & Valenta 1976: 20; Jamnicky 1957b: 18, 1957c; Kangas 1946c: 23; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1980a, 1980b, 1983; Kirchhoff 1985; Kirchhoff & Fuhrer 1986: 373; Kleine 1908c: 217, 1909a: 49, 1944: 69; Kolubajiv & Kalandra 1954: 30; Kosarievskaya & Mamajev 1962: 450; Kostin 1964: 109;

Krivosheina 1974; Krogerus 1927: 122; Kuhn 1949a: 279; Langor 1985; Leclercq, Simon, & Verstraeten 1967; Luitjes 1976; Mahunka 1968; Marsh 1979: 157; Mathiesen-Kaarik 1953: 6; Matthews 1970; Michalski & Ratajczak 1989; Mozolevskaya, Lebedeva, & Galaseva 1979; Naumann-Etienne 1978a; Nishiguchi 1959: 271; Nosek 1951: 106, 1952b: 100, 1959b: 87; Novak, P. 1952: 416; Nuorteva 1956a: 17, 1957b: 68, 1959d: 203, 1967a, 1968a, 1970, 1971: 69; Nuorteva & Nuorteva 1968; Nusslin 1927: 342; Okolow 1963; Palmen 1944: 60, 1946: 194; Pfeffer 1923a: 331, 1932a: 13, 1943b: 180, 1949b: 350, 1950c: 2, 1957a: 196, 1959: 5; Pierce, W. D. 1908: 387; Poinar 1975: 156; Purrini 1977b, 1978a, 1978b, 1980; Purrini & Ormieres 1981; Purrini & Zizka 1983; Rennerfelt 1951: 122; Rondani 1873: 139; Ruhm 1956b: 4; Saalas 1917a: 18, 1928: 649, 1949: 342, 373, 1951: 15; Saarenmaa 1978; Schedl 1936f: 172; Scheucher 1959: 263; Schimitschek 1931b: 487, 1932c: 250, 1935a: 197, 1936a: 558, 1948e: 97, 1952a: 208, 1953b: 49, 523, 1955a: 66, 1964c; Schmitz & Rudinsky 1968: 1–42; Schwerdtfeger 1944a: 180, 1957a: 186; Sklenkis 1974; Szczepanski 1960a: 410; Tenkacova & Mituch 1987; Thalenhorst 1949d: 264, 1958: 34; Thompson, W. R. 1943: 42; Titova 1966; Tomalak, Welch, & Galloway 1989b, 1989d; Vietinghoft 1924: 335; Vitzthum 1923: 143, 1926: 489; Werner & Holsten 1984; Westerboer 1963: 348; Wiackowski 1957a: 80; Wilke 1931: 641; Winter, K. 1980; Wisniewski 1979c: 7, 1980; Woodring & Moser 1970; Zethner-Moller & Rudinsky 1967: 909; Zmur 1985b. (**hb**) Altum 1881c: 308; Annila 1977; Anonymous 1929c: 644; Apfelbeck 1916b, 1917; Baker, W. L. 1972: 263; Balachowsky 1948; Barbey 1901: 27, 101, 1925: 73; Bargmann 1906; Beffa 1949, 1961; Beran 1936: 257–312; Bevan 1962c: 95; Bonnemaison 1953; Borodajewsky 1929b; Bright 1963: 108; Bright & Stark 1973: 74; Budkov 1897; Bugnion 1887; Chararas 1957c, 1961b: 70, 1961c: 93, 1962c: 412; Charvat 1950; Chorbadzhievo 1929; Daterman, Rudinsky, & Nagel 1965; Doebner 1862: 179; Dombrowsky 1887, 1888; Eckstein 1889, 1897, 1926: 579; Eichhoff 1881a: 52, 261; Escherich 1923b: 429, 487, 598; Everts 1903: 765; Felt 1926: 247, 271, 1930a: 271; Fleischer 1877a; Fuchs 1904a, 1907: 47, 1911b; Furniss, R. L. & Carolin 1977: 378; Furst 1888: 113; Gornostaev 1916: 313; Grandi 1951; Gyorfi 1957; Hadorn 1933; Hagedorn 1903a; Hartig 1861: 325, 1877: 194; Henschel 1876a: 240, 1877a, 1885b, 1895a: 188; Herrick 1935: 138; Hess 1898: 349, 1907: 245; Hess & Beck 1914: 269, 1927: 324; Holmgren 1867: 137; Hopkins 1894g, 1899e: 252, 316, 445, 1904a: 25; Inouye et al. 1955: 62; Jaensch 1938: 49; Joly 1976; Judeich 1876d: 255; Judeich & Nitsche 1895: 454; Karpinski 1933b: 29; Karpinski & Strawinski 1948: 155; Karsch 1883: 141; Kholodkovskii 1889: 267, 1912: 279, 318; Knotek 1894a: 559; Koch 1909: 333; Kohnle 1985; Komarek 1931: 1–256; Kostin 1960: 133; Krivolutskaya 1956: 832, 1960: 78, 1973: 140; Lekander 1959b: 33; Lengerken 1939: 41, 1954: 84; Li, Shi, & Ao 1984: 48; Lindemann 1881a: 236; Lindgren 1980a: 62; Loos 1913: 412; Luitjes 1976; Lunardoni & Leonardi 1889: 479; Magema, Gaspar, & Severin 1982; Malotenkow 1908: 110; Michalski 1959a: 291; Mozolevskaya, Lebedeva, & Galaseva 1979; Munro 1917b: 147, 1926: 70; Naumann-Etienne 1978a; Niisima 1908b: 18; Nijholt 1980: 203; Nilssen 1979a, 1984, 1987; Nordlinger 1848: 240, 1856: 24; Nosek 1959b: 87; Nunberg 1929c: 120, 1947c: 106; Nuorteva 1956c: 28, 1967a, 1968a, 1970; Nusslin 1898: 283, 1906b: 14, 1913: 231, 1927: 342; Ohnesorge 1955: 279; Orest 1926a: 73; Palm 1956: 63; Pfeffer 1941c: 5, 1989a: 57; Pierce, W. D. 1907: 291; Postner 1974: 424; Prell 1930c: 639, 1931: 364; Ratzeburg 1837: 160, 1839: 194; Rhumbler 1922: 326, 1927: 342; Rimski-Korsakov et al. 1949: 299; Rodzianko 1915: 1–15; Rozhkov 1970: 140; Rudinsky & Daterman 1964a; Rupertsberger 1880: 231; Saalas 1913a: 68, 85, 1916: 110–116, 1949: 342, 373, 1951: 15; Schedl 1981b: 71; Schimitschek 1955a: 66; Schnaider 1954: 174; Schwarz 1895a: 143; Schwerdtfeger 1944a: 180, 1957a: 186, 1981: 192; Sedlaczek 1921: 335, 1934: 275; Spessivtsev 1913a: 93, 1923: 210, 1928a: 222, 1934: 208; Stark 1926a: 335, 1952: 336; Swaine 1911b: 81, 1912b: 142; Thalenhorst 1958: 34; Tragardh 1939b: 158, 200; Tschorbadjiev 1929: 167; Wachtl 1876a: 453, 1901: 381; Weber, H. 1926: 579; Wichmann 1927b: 361; Winter, K. 1980; Wolff & Krausse 1922: 91; Wong, H. R. & Melvin 1973; Wood, S. L. 1982b: 725. (**ds**) Acloque 1896; Ammann & Knabl 1913, 1923; Andersch 1851; Anonymous 1980g; Audras & Schaefer 1957; Bain 1974: 16; Balachowsky 1943a, 1948; Balazy & Michalski 1960; Barthe 1896; Bartindale & Bartindale 1948: 138; Bau 1888; Beckwith 1972a; Bedel 1888b: 400, 416; Beeson 1938: 287; Beffa 1949; Bejer-Petersen & Jorum 1977: 21; Belousov 1916, 1917: 336; Bielz 1851, 1887; Bielussov 1917: 334–337; Bistrom & Vaisanen 1988: 42; Blanchere & Robert 1889; Blandford 1894c; Borchert 1951; Brakman 1966b: 205; Brancsik 1871, 1906; Bright 1963: 108, 1971b: 126, 1976d: 125; Bright & Stark 1973: 74; Brown, R. M. & Winter 1981; Brundin 1934; Budkov 1897; Buresh & Lazarov 1956; Butovitsch & Heqvist 1947; Calwer 1884, 1893; Chamberlin 1917: 324; Chapuis & Candeze 1853; Charvat 1950; Cho 1957; Choo 1983: 82; Choo & Woo 1985: 165; Chorbadzhievo 1924d, 1929; Chrystal 1922, 1937; Credler 1868; Debatisse 1945; Dejean 1937; Deyrup 1981b: 6; Drooz 1985: 361; Eder 1934; Eggers 1904; Elias 1985: 39; Elias, Short, & Clark 1986; Endrodi 1958b; Ericson & Sandin 1893; Escalera 1919; Escherich 1923b: 429, 487, 598, 1932b; Esterberg 1928,

1959; Evans, D. 1983: 32; Evans, D., Lowe, & Hunt 1978; Everts 1922: 646; Favre 1890; Felt 1926: 247, 271, 1930a: 271; Fleischer 1877b, 1921b; Florov 1949: 89; Fowler 1891; Frey 1937; Fricken 1889: 350; Fuchs 1904a, 1905a, 1907: 47; Furniss, M. M. & Furniss 1972; Furniss, R. L. & Carolin 1977: 378; Gast et al. 1989: 385; Gaubil 1849: 126; Gemminger & Harold 1872: 2687; Gillerford 1966; Gornostaev 1917; Gozis 1875: 80; Gredler 1866: 374, 1869: 73; Grill 1895: 312; Grouzelle 1905; Grune 1979: 91; Hagedorn 1903a, 1910d: 66; Hamilton 1889: 159, 1890: 44, 1894a: 35, 1894b: 406; Hansen, V. 1939, 1956, 1964: 460; Heinemann 1908a; Hellen 1947; Heller 1881: 173; Hennig 1954: 261; Henschel 1895a: 188; Henshaw 1887: 8, 1895: 44; Heyden 1881: 177, 1890: 132, 1893: 177, 1898: 77; Heyden, Reitter, & Weise 1883: 182, 1891: 673, 1906: 713; Holdhaus & Deubel 1910: 145, 185, 199; Holmgren 1867: 137; Holzel 1946: 81; Hopkins 1893a: 137, 145, 1893b: 211, 1899: 197–461; Horion 1951; Hormuzaki 1891: 174; Hubault 1923b; Ihssen 1939: 336; Ishikura 1966; Jamnicky 1960a; Jazentkovsky 1912: 291; Joly 1976; Judeich & Nitsche 1895: 454; Kaltenbach 1874: 647, 685; Karpinski 1925: 216, 1926: 82, 1931: 28, 1933a: 296, 1933b: 29, 1948a: 175, 1948b: 230; Karpinski & Strawinski 1948: 155; Keler 1925b: 275; Kersten 1933: 75; Kestercanek 1881a: 12; Kiefer et al. 1942: 529; Klefbeck & Sjoberg 1960: 230; Kleine 1912a: 128, 161, 262, 268, 1913a: 35, 1913b: 135, 1914b: 249, 258, 400, 1934a: 155; Kloft & Hinks 1945: 218; Knotek 1892a: 38, 1894a: 559; Ko 1969: 276; Koca 1905: 192; Koltze 1901: 154; Kono 1938b: 65, 68; Kono & Tamanuki 1939: 90, 93; Koschitsky 1900: 83; Kraatz 1869: 59; Krivolutskaya 1956: 832, 1960: 78, 1965: 238, 1973: 140, 1983; Kurenzov 1957b: 17; Kurir 1947c: 11; Kusch 1967; Lacordaire 1866: 381; Langhoffer 1915c: 158; Leclercq 1971; Lentz 1857: 139; Li, Shi, & Ao 1984: 48; Liegel 1886: 43; Lindberg & Saris 1952: 59; Lindbroth 1935: 59; Lindemann 1884b: 264; Lindquist, O. H. & Syme 1981: 40; Lokaj 1868: 64; Lomnicki 1886a: 243, 1913b: 148; Loos 1913: 412; Lucht 1987: 277; Lunardoni & Leonardi 1889: 479; Lundberg 1974: 92, 1979: 31; Lundblad 1950a: 175, 1950c: 115; Mandl 1931: 25; Marcu 1926c: 64; Matthews & Fowler 1883: 42; Michalski 1957c: 165; Miller 1868: 27; Mumford 1960: 24, 1965: 18; Munro 1917: 123–158, 1921: 87; Munster 1922a: 155, 1928: 291; Murayama 1929b: 2, 1929d: 5, 1930a: 1, 1930b: 17, 21, 31, 1937a: 3, 1937b: 374, 1948: 6, 1950b: 1295, 1954b: 172, 1957c: 588, 597; Negru 1966b: 401, 1968a: 456; Niisima 1908b: 18; Nobuchi 1966b: 19, 1967: 20; Novak, P. 1952: 416; Nunberg 1927a: 213, 1928b: 88, 108, 1954: 56; Nuorteva 1971: 67; Nusslin 1898: 283; Orest 1926c: 61, 64; Pacher 1865: 152; Palm 1946: 122, 1948a: 91, 1956: 63; Palmen 1944: 60, 1946: 194; Perris 1876a: 255, 1877a: 415; Pfeffer 1924b: 473, 1926b: 58, 1947c: 3, 1950b: 75, 1989a: 57; Pierce, W. D. 1917: 69; Pittioni 1943: 176; Platonoff 1940: 11, 1942: 64, 1943: 141; Pomerantzev 1907b: 426, 494; Poppius 1900: 108;Postner 1974: 424; Rapp 1934: 733; Ratzeburg 1837: 160, 1839: 194; Redtenbacher 1858: 836, 1874: 380; Reitter 1869a: 20, 1869b: 155, 1894a: 88, 1916: 292; Rimski-Korsakov et al. 1949: 299; Roubal 1936b: 193, 1941: 268; Rozhkov 1970: 140; Rye 1869: 6; Saalas 1913a: 68, 85, 1917a: 18, 1931: 70; Sahlberg 1900: 106; Sainte-Claire & Mequignon 1938: 447; Schaufuss 1915: 1235; Schaum 1859: 96, 1862: 101; Schedl 1980a: 18, 1981b: 71; Scheerpeltz & Winkler 1930: 257; Schilsky 1909: 189; Schimitschek 1938b: 114; Schiodte 1873: 103; Schreiner 1897: 369; Schwarz 1900: 537, 1904: 185, 1910: 185; Schwerdtfeger 1981: 192; Seidlitz 1872: 397, 1891a: 567, 1891b: 612; Sharp & Fowler 1893: 34; Shiraki 1952; Siebke 1875: 284; Slosson 1895: 6; Smith, G. J. & Melvin 1974; Smith, J. B. 1900: 363, 1910: 402; Sokanovskii 1960; Spahr 1981; Stark 1926a: 335, 1926b: 103, 1926j: 126, 1931a: 25, 1931d: 547, 1952: 336; Stein 1868: 114; Stein & Weise 1877: 165; Stierlin 1898: 446; Stierlin & Gautard 1871: 293, 1906: 206; Still, Tidsbury, & Melvin 1974a: 13; Strand 1946: 600; Sturm 1843: 230; Swaine 1909: 102, 1911b: 81; Syme & Nystrom 1988: 40; Thomson 1865: 371, 1868: 223; Tomic 1957: 207–210; Tragardh 1919: 237–248, 1939b: 158, 200; Tredl 1907: 17; Tschorbadjiev 1929: 167; Turnbow & Franklin 1980; Ulanowski 1884: 6; Ulrich 1848: 332; Wachtl 1870: 259, 1876a: 453; Wegelius 1960: 106; Werner & Holsten 1984; Westhoff 1882: 239; Wichmann 1909b: 173, 1927a: 65, 68; Wiepken 1883: 89; Wilke 1931: 641; Wilken 1864: 373; Winter, T. G. 1983: 9; Wiren 1945: 43; Wood, S. L. 1972a: 416, 1982b: 725; Yanovskii & Tegshzhargal 1985: 409; Yin, Huang, & Li 1984: 149; Zinovjev 1955: 187; Zoufal 1920: 21. (**tx**) Acloque 1896; Altman 1844; Bach 1854: 124, 130; Balachowsky 1943a: 168, 1948: 168, 1949a: 178; Barbey 1901: 27, 101; Beckwith 1972a; Bedel 1888b: 400, 416; Beffa 1949, 1961; Benoit 1985: 95; Bertolini 1872; Blandford 1894d; Brancsik 1871; Bright 1963: 108, 112, 1976d: 125; Chapuis & Candeze 1853; Chararas 1962c: 412; Charvat 1950; Choo 1983: 82; Chorbadzhievo 1924d; Dombrowsky 1887, 1888; Eggers 1923b, 1926b, 1928d, 1930b: 30, 1931b: 30–31, 1941c: 121, 1942c: 32; Eichhoff 1864b: 38–39, 1866: 277, 1868d: 424, 1876a: 378–379, 1878b: 284, 1881a: 52, 261–262, 1883a: 114, 140; Endrodi 1957b: 417; Escherich 1923b: 429, 487, 598; Escherich & Escherich 1897; Evans, D. 1983: 32; Everts 1903: 765, 1922: 646; Fauvel 1887, 1889; Ferrari 1867a: 27, 1867b: 107, 114; Fleischer 1905, 1927; Formanek 1907: 50; Fricken 1889: 350; Grune 1979: 90–91; Hagedorn 1910a: 96; Hansen, V. 1956, 1964: 460; Henschel 1876a:

240, 1890: 132, 1895a: 188; Heyden 1893: 177; Hopkins 1914: 121, 1915b: 50, 1915c: 211; Houlbert 1922a:pl. 1; Jacquelin du Val & Fairmaire 1868: 107, 112; Joly 1976, 1976b:fig. 141; Judeich & Nitsche 1895: 454; Karpinski & Strawinski 1948: 155; Knotek 1892a: 38; Koch 1910: 17, 1928: 76, 105, 1932: 111; Krivolutskaya 1956: 832, 1958: 158, 1960: 154; Kuhnt 1913: 1059; Kusch 1967: 10; Lacordaire 1866: 381; Lekander 1959b: 33; Letzner 1891: 377; Li, Shi, & Ao 1984: 265; Lindemann 1881a: 236; Lindquist, O. H. & Syme 1981: 40; Lovendal 1889b: 66, 1898: 175; Lucht 1987: 277; Lunardoni & Leonardi 1889: 479; Munro 1917b: 147, 1920: 1–35, 1926: 4–77; Murayama 1930b: 17, 1937b: 374, 1950b: 1295, 1954b: 172, 1957c: 588, 597; Negru 1966: 401; Niisima 1909: 151; Nilssen 1979a, 1979b; Nobuchi 1966b: 19, 1966d:pl. 2; Nordlinger 1848: 240, 1856: 24; Nunberg 1928a: 140, 1929c: 120, 1947: 99–108, 1954: 56, 1956: 161; Nusslin 1911a: 60, 378, 1912b: 102; Pardy 1974, 1977, 1983; Perris 1877a: 415; Pfeffer 1932b: 19, 1941c: 5, 1947c: 3, 1955a: 169, 1989a: pl. 7; Portevin 1935: 327; Quaschik 1953: 35; Ratzeburg 1837: 160, 1839: 194–195, 1856b: 60; Redtenbacher 1849a: 851, 1849b: 26, 1858: 836, 1874: 380; Reitter 1894a: 88, 1899: 286, 1913a: 75–76, 1916: 292; Rhumbler 1922: 326, 1927: 342; Rupertsberger 1880: 231; Saalas 1913a: 68, 85, 1949: 342, 373; Schedl 1934f: 1642, 1946a: 6, 1950d: 17, 1952f: 87, 1980a: 18, 1981b: 71; Scherb 1971; Schimitschek 1937c: 53, 1955c: 84; Schlechtendal & Wunsche 1879: 126; Schwarz 1895a: 143; Sedlaczek 1912: 306; Seidlitz 1872: 397, 1891a: 567, 1891b: 612; Sokanovskii 1930: 801–802, 1954: 19, 1960: 675; Spessivtsev 1913a: 93, 1922a: 473, 1923: 209–210, 1925a: 174, 1925b: 29, 1928: 235–244, 1931: 51–52, 1934: 207–220; Stark 1931: 339–343, 1952: 336; Stierlin 1898: 446; Stresemann et al. 1986: 352; Swaine 1909: 102; Syme & Nystrom 1988: 40; Titus, Meikle, & Harrison 1985: 59; Thomas, J. B. 1967; Thomas, J. B. & Krywienczyk 1966; Thomson 1865: 371, 1868: 223; Wood, S. L. 1972a: 416, 1982b: 725, 1986a; Yin, Huang, & Li 1984: 149. (**ms**) Chararas 1959d; Chenier & Philogene 1989; Eichhoff 1868d: 424; Escherich 1932b; Fuchs 1911b; Heinemann 1908a; Kozikowsky 1929: 253; Michalski 1959a: 291; Sedlaczek 1934: 275, 1936: 200; Swaine 1912b: 142.

villosus Herbst 1793: 121. Syntypes, sex?; Deutscher; not located, preoccupied by Fabricius 1792.

Notes: (1) This name was based on a misidentification of the species named by Fabricius 1792. It is probable that many of the following citations refer to the species of Fabricius.

References: (**ay**) Escherich 1923b: 487. (**cn**) Barbey 1925: 422; Eckstein 1926: 579; Escherich 1923b: 487; Gabler 1955; Grandi 1951; Hartig 1811: 320, 330, 1820: 320, 330, 1832: 280, 287, 1861: 325, 1877: 194; Houba 1913: 252; Jaensch 1938: 50; Kleine 1932a: 302; Kollar 1840: 255; Koppen 1882: 237, 260; Rhumbler 1927: 342; Schimitschek 1937c: 53, 1944a: 174; Schwerdtfeger 1957a: 182; Souphieff & Scherbinovskaja 1937: 14; Wachtl 1901: 381; Weber, H. 1926: 579. (**ec**) Belanowskii 1930; Elliot & Morley 1907; Galoux 1947d; Gyorfi 1952b; Hartig 1832: 280, 287; Hinton 1945: 222; Hubault 1923a; Jamnicky 1957b: 20; Kleine 1908c: 217, 1909a: 49, 77, 1944: 75; Nosek 1959b: 87; Nunberg 1930: 204; Pfeffer 1923a: 331; Schwerdtfeger 1944a: 174, 1957a: 182; Sedlaczek 1935a: 162; Sitowski 1930: 3; Stammer 1934: 198; Wichmann 1955a: 102. (**hb**) Altum 1881c: 308, 1894; Bach 1864; Barbey 1901: 27, 101, 1925: 422; Dallimore & Munro 1922; Dombrowsky 1887, 1888; Eckstein 1889, 1926: 579; Eichhoff 1881a: 52, 264; Escherich 1923b: 487; Everts 1903: 766; Fisher 1936a; Fuchs 1904a; Gabler 1955; Gillanders 1908; Girard 1873; Grandi 1951; Gyorfi 1957; Hagedorn 1903d; Hartig 1811: 320, 330, 1820: 320, 330, 1832: 280, 287, 1861: 325, 1877: 194; Henschel 1876a: 207, 240, 1895a: 188; Jaensch 1938: 50; Janson 1867; Karpinski 1933b: 29; Karpinski & Strawinski 1948: 156; Karsch 1883: 142; Kleine 1932a: 302; Kollar 1840: 255; Lengerken 1939: 64, 1954: 84; Marcu 1927b: 425; Munro 1926: 70; Nordlinger 1855: 184, 1856: 24, 1869: 233; Nosek 1959b: 87; Nusslin 1898: 283; Palm 1953a: 15; Rhumbler 1927: 342; Schwerdtfeger 1944a: 174, 1957a: 182; Sedlaczek 1935a: 162; Stark 1952: 330; Taschenberg 1880: 232; Wachtl 1876a: 460, 1901: 381; Weber, H. 1926: 579; Zocchi 1959: 103. (**ds**) Acloque 1896; Andersch 1851; Audras & Schaefer 1957; Barthe 1896; Bau 1888; Bielz 1851, 1887; Blanchere & Robert 1889; Brancsik 1906; Buck 1955; Calwer 1884, 1893; Carpentier & Delaby 1908; Crotch 1863; Dallimore & Munro 1922; Debatisse 1945; Duftschmidt 1825; Eggers 1904, 1912f; Endrodi 1958b; Ericson & Sandin 1893; Escalera 1919; Escherich 1923b: 487, 1932b; Eyquem 1891; Fauvel 1897; Favre 1890; Fisher 1936a; Forster 1849: 439; Fowler 1891; Fricken 1889: 351; Fuchs 1904a, 1905a; Gaubil 1849: 126; Gemminger & Harold 1872: 2687; Gozis 1875: 80; Grill 1895: 312; Gyllenhal 1827: 624; Hagedorn 1903a, 1910d: 67; Hansen, V. 1939, 1956; Heinemann 1908a; Hellen 1947; Hennig 1954: 265; Henschel 1895a: 188; Heyden 1876: 301, 1879: 140; Heyden, Reitter, & Weise 1883: 182, 1891: 673, 1906: 713; Horion 1951; Hubault 1923b; Jansson 1940: 63; Jazentkovsky 1912: 292; Johnson & Halbert 1902: 819; Joy 1923: 278; Kaltenbach 1874: 623–624, 646; Karpinski 1932b: 54, 1933b: 29; Karpinski & Strawinski 1948:

156; Kestercanek 1881a: 12; Kleine 1912a: 262, 268, 1913a: 35, 1913b: 136, 1914a: 16, 22, 1932a: 302, 1934a: 155; Kloft & Hinks 1945: 218; Koltze 1901: 154; Koppen 1882: 237, 260; Koschitsky 1900: 83; Kraatz 1869: 59; Kurir 1957c: 22; Lacordaire 1866: 381; Langhoffer 1915c: 158; Lentz 1857: 137; Lomnicki 1913b: 148; Lundblad 1958: 489; Marcu 1927b: 425; Matthews & Fowler 1883: 42; Meinert 1887: 70; Mirzoian 1950: 140; Mjoberg 1903: 108; Morley 1868: 187; Murayama 1957c: 607; Nunberg 1954: 57; Nusslin 1898: 283; Oliveira 1887: 329; Ortzen 1886: 280; Pacher 1853: 49, 1865: 152; Palm 1953a: 15, 1955a: 142, 1959: 28; Perris 1876a: 253, 255, 1877a: 415, 1877c: 415; Pfeffer 1928b: 7, 1931b: 73; Pittioni 1943: 176; Ragusa 1924: 117; Rapp 1934: 734; Ratzeburg 1837: 130, 1839: 157; Redtenbacher 1858: 836, 1874: 380; Reitter 1869b: 155, 1894a: 88, 1916: 292; Roubal 1941: 268; Sainte-Claire 1914: 474; Sainte-Claire & Mequignon 1938: 447; Schaschl 1854: 133; Schaufuss 1915: 1235; Schaum 1859: 96, 1862: 101; Schilsky 1909: 189; Schiodte 1873: 103; Schmitz 1898: 157; Schnaider 1936: 366; Schneider & Leder 1877: 55; Seidlitz 1891b: 613; Souphieff & Scherbinovskaja 1937: 14; Sparre-Schneider 1889: 61; Stark 1926b: 103, 1927b: 89, 1952: 330; Stein 1868: 114; Stein & Weise 1877: 165; Stephens 1829a: 144, 1830: 356, 1839: 206; Stierlin 1898: 446; Stierlin & Gautard 1871: 293, 1906: 206; Sturm 1826: 102, 1843: 230; Swaine 1909: 103; Thomson 1865: 371, 1868: 223; Tredl 1907: 18; Villa & Villa 1833: 26; Wachtl 1876a: 460; Westhoff 1882: 240; Wichmann 1927a: 69, 1955a: 102; Wollaston 1854: 290, 1857: 96; Zetterstedt 1840: 193; Zocchi 1959: 103. (**tx**) Acloque 1896; Altman 1844; Bach 1854, 1864; Barbey 1901: 27, 102; Carpentier & Delaby 1908; Dombrowsky 1887, 1888; Duffy 1953; Duftschmidt 1825; Eggers 1911a, 1912f; Eichhoff 1864b: 39, 1866: 277, 1878b: 284, 289, 1878c: 165, 1881a: 52, 262, 264; Endrodi 1957b; Escherich 1923b: 487; Everts 1903: 766; Fabricius 1792: 367, 1801: 391; Fauvel 1887, 1889; Ferrari 1867: 27, 29, 1867b: 114; Fleischer 1905, 1927; Formanek 1907: 50; Fricken 1889: 351; Gabler 1955; Gebien 1907: 197; Gillanders 1908; Girard 1873; Gyllenhal 1813: 361, 1827: 624; Hagedorn 1910a: 96; Hansen, V. 1956; Henry 1892: 10; Henschel 1876a: 207, 240, 1895a: 188; Herbst 1793: 121; Hopkins 1915b: 49; Jablonsky 1785: 121; Jacquelin du Val & Fairmaire 1868: 107, 112; Karpinski & Strawinski 1948: 156; Kuhnt 1913: 1059; Lacordaire 1866: 381; Letzner 1891: 377; Leunis 1886: 181; Lovendal 1889b: 67, 1898: 178; Lucas 1920: 250; Marsham 1802: 53; Murayama 1957c: 607; Nordlinger 1848: 241, 1856: 24; Nunberg 1954: 57; Nusslin 1911a: 60; Panzer 1795a: 287; Paykull 1800: 154; Pfeffer 1932b: 20; Quaschik 1953: 35; Ratzeburg 1837: 130, 1839: 157; Redtenbacher 1849a: 358, 790, 851, 1849b: 26, 1858: 836, 1874: 380; Reitter 1894a: 88, 1899: 286, 1913a: 77, 1916: 292; Rhumbler 1922: 326, 1927: 342; Rupertsberger 1880: 231; Schedl 1934f: 1643, 1952f: 87; Schimitschek 1937c: 53; Schlechtendal & Wunsche 1879: 126; Seidlitz 1891b: 613; Stark 1952: 330; Stephens 1829a: 144, 1829b: 12, 1830: 365, 1839: 206; Stierlin 1898: 446; Swaine 1909: 103; Taschenberg 1880: 232; Thomson 1865: 371, 1868: 223; Wollaston 1854: 290, 1857: 96, 1865: 237; Zetterstedt 1840: 193. (**ms**) Escherich 1932b; Hartig 1834: 109; Heinemann 1908a; Lucas 1920: 250.

septentrionis Mannerheim 1843: 298 (reprint p. 126) (*Bostrichus*). Syntypes, sex?; Sitka Island, Alaska; MZU, Helsinki, lost, not at Helsinki Museum. Synonymy: Bedel 1888b: 416, Bright 1963: 108.

Notes: (3) The North American population of this species is statistically distinguishable from that of Europe and Asia, but it is not recognized here in nomenclature because of the confusion any change might cause. A change would impact the name *septentrionis*. Additional research is needed (SLW).

References: (**cn**) Chamberlin 1924; Doane et al. 1936; Lyons 1956: 600; Swaine 1918a: 129, 131. (**ec**) Ross, D. A. 1967, 1968. (**hb**) Balachowsky 1948; Chamberlin 1939: 466, 1958: 190–191; Doane et al. 1936; Harrington 1891: 26; Lyons 1956: 600; Swaine 1918a: 129, 131. (**ds**) Balachowsky 1948; Beaulne 1956; Chamberlin 1925, 1939: 466, 1958: 190–191; Cockerell et al. 1907; Dejean 1837; Fall 1906: 202; Fall & Cockerell 1907: 217; Gemminger & Harold 1872: 2687; Hamilton 1889: 159; Harrington 1890: 189, 1891: 26, 1894: 16; Henshaw 1885: 148; Hopkins 1893a: 137, 1893b: 211; Hopping 1922; Hubbard & Schwarz 1878a: 643, 666; Keen 1929: 42; Kleine 1934a: 155; Leng 1920: 342; Mank 1934: 81; Melsheimer 1853: 87; Murayama 1957c: 607; Pfeffer 1935: 158; Provancher 1877: 568; Ross, D. A. 1967, 1968; Schwarz 1886: 42; Stein 1868: 114; Swaine 1909: 102; Van Dyke 1924: 26; Wickham 1896a: 309. (**tx**) Balachowsky 1948; Bedel 1888b: 416; Bright 1963: 108; Chamberlin 1939: 466, 1958: 190–191; Eichhoff 1876a: 378, 1878b: 284, 1881a: 262; Fall 1926: 208; Ferrari 1867a: 75; Hopkins 1915b: 50, 1915c: 211; Keen 1929: 42; LeConte 1857: 22, 1868: 161, 1876: 361; Mannerheim 1843: 298 (reprint p. 125), 1852: 359, 1853: 235; Murayama 1957c: 607; Provancher 1877: 568; Schwarz 1886: 42; Swaine 1909: 102, 1915: 361, 1918a: 129, 131; Wood, S. L. 1969c: 115.

semicastaneus Mannerheim 1852: 358 (reprint p. 76) (*Bostrichus*). Holotype, sex?; Sitka Island, Alaska; MZU, Helsinki. Synonymy: LeConte 1868: 161.

References: (**cn**) Packard 1890: 860. (**hb**) Chittenden 1890; Packard 1890: 860. (**ds**) Chittenden 1890; Leng 1920: 342; Stein 1868: 114; Swaine 1909: 103. (**tx**) Bedel 1888b: 416; Eichhoff 1878b: 284; Hamilton 1888: 159; LeConte 1857: 22, 1868: 161, 1876: 361; Mannerheim 1852: 358; Swaine 1909: 103; Wood, S. L. 1969c: 115.

victoris Mulsant & Rey 1853: 91 (*Bostrichus*). Syntypes, sex?; Faillefeu, Basses-Alpes, France; not located. Synonymy: Bedel 1888b: 416.

References: (**hb**) Wachtl 1876a: 458. (**ds**) Calwer 1884, 1893; Gemminger & Harold 1872: 2686; Schaum 1859: 96, 1862: 101; Schilsky 1909: 189; Stein 1868: 114; Stein & Weise 1877: 165; Wachtl 1876a: 458. (**tx**) Balachowsky 1949a: 179; Bedel 1888b: 416; Eichhoff 1864b: 46, 1868d: 419; Ferrari 1867: 22; Mulsant & Rey 1852: 205, 1853: 91.

americanus Hopkins 1915b: 51. Holotype ♀; Cheat Bridge, Randolph County, West Virginia [USA]; USNM, Washington. Synonymy: Chamberlin 1958: 190, Bright 1963: 108.

References: (**ay**) Thomas, J. B. 1957: 4. (**cn**) Blackman 1950; Chamberlin 1924; Doane et al. 1936; Rodary 1959: 852; Swaine 1918a: 129, 131, 1924d: 9; Swaine et al. 1924: 19; Thomas, J. B. 1958: 394. (**ec**) Blackman 1919: 90; Blackman & Stage 1918: 59; Price 1966: 241; Thompson, W. R. & Simmonds 1964: 128, 1965: 16. (**hb**) Balachowsky 1948; Blackman 1950; Chamberlin 1939: 466, 1958: 190; Doane et al. 1936; Drake 1921; Felt 1924: 271; Swaine 1918a: 129, 131, 1924d: 9; Watson 1928: 620; Wolcott & Montgomery 1933: 167. (**ds**) Anonymous 1926c: 520; Balachowsky 1948; Beaulne 1956; Blackman 1950; Blatchley & Leng 1916: 612; Chamberlin 1925, 1939: 466, 1958: 190; Dodge 1938; Drake 1921: 201–205; Hoffmann 1956: 91; Kleine 1934a: 155; Leng 1920: 342; Leonard 1928: 520; Murayama 1957c: 606; Notman 1920: 184; Proctor 1946: 208; Wolcott & Montgomery 1933: 167. (**tx**) Balachowsky 1948; Blatchley & Leng 1916: 612; Bright 1963: 108; Chamberlin 1939: 466, 1958: 190; Dodge 1938: 55; Hopkins 1915b: 50–51; Murayama 1957c: 606; Swaine 1918a: 129, 131; Thomas, J. B. 1957: 4.

pseudotsugae Swaine 1915b: 360 (reprint p. 5). Lectotype ♀; Stanley Park, Vancouver Island, British Columbia [Canada]; CNCI, Ottawa, designated by Bright 1967b: 674. Synonymy: Chamberlin 1958: 190, Bright 1963: 108.

References: (**cn**) Anonymous 1958a: 4; Doane et al. 1936; Doidge 1967: 196; Felt 1926: 247, 271; Hatch 1938: 194; Keen 1938: 125, 1952c: 163; Schuder 1969: 81; Swaine 1918a: 129–130. (**ec**) Bedard 1933a; Keen 1938: 125. (**hb**) Balachowsky 1948; Chamberlin 1939: 465, 1958: 190; Doane et al. 1936; Felt 1926: 247, 271; Keen 1938: 125, 1952c: 163; McCowan & Rudinsky 1958: 14; Swaine 1918a: 129, 130. (**ds**) Anonymous 1958a: 4; Balachowsky 1948; Bedard 1938a; Bright 1967b: 674; Chamberlin 1917, 1918: 14, 1939: 465; Felt 1926: 247, 271, 1930a: 247; Hoebeke 1978; Hopping 1922; Keen 1929: 42, 1938: 125, 1952c: 163; Kleine 1934a: 155; Leng 1920: 342; Murayama 1957c: 606; Patterson & Hatch 1945: 154; Schuder 1969: 81. (**tx**) Balachowsky 1948; Bright 1963: 108, 1967b: 674; Chamberlin 1939: 465, 1958: 190; Keen 1929: 42; Murayama 1957c: 606; de Ruette 1970: 100; Schedl 1979c: 202; Swaine 1915b: 360, 1918a: 129–130.

alternans Eggers 1931b: 30. Holotype, sex?; Sao Paulo, Brazil; Prague Museum.

Notes: (3) The type was not seen, but the collection of *autographus* from Sao Paulo that was seen suggests an introduction and synonymy of Eggers name.

References: (**ds**) Murayama 1957c: 607. (**tx**) Eggers 1931b: 30; Murayama 1957c: 607; Schedl 1940c: 204–208.

longicollis Eggers 1941c: 121. Holotype, sex?; Lensahn, Ostholstein; USNM, Washington. Synonymy: Pfeffer 1955: 169.

References: (**ds**) Horion 1951; Murayama 1957c: 607. (**tx**) Anderson, W. H. & Anderson 1971: 18; Eggers 1941c: 121, 1944c: 143; Murayama 1957c: 607.

artepunctatus Eggers 1941b: 122. Lectotype ♂; Weissrusslnd (Bialowjesh); USNM, Washington, designated by Anderson & Anderson 1971: 4. Synonymy: Sokanovskii 1954: 19.

References: (**ds**) Endrodi 1958b. (**tx**) Anderson, W. H. & Anderson 1971: 4, 18; Eggers 1941b: 122; Endrodi 1957a, 1957b: 417; Nunberg 1956c: 160–161, 168; Schedl 1979c: 27; Sokanovskii 1954: 19.

brasiliensis Schedl 1940c: 207. Syntypes, sex?; Brazil: Sao Paulo; Schedl Collection in NHMW, Wien. Synonymy: Wood examined the NHMW, Wien, syntypes to establish this synonymy (Wood 1983 notes, p. 16).

References: (**ds**) Murayama 1957c: 607. (**tx**) Murayama 1957c: 607; Schedl 1940c: 207, 1979c: 45.

autographus sachalinensis Sokanovskii 1960: 675. Syntypes, sex?; Sakhalin Island, USSR; Sokanovskii Collection.

Notes: (1) This variety appears to be no more than an aberration that has no status in nomenclature.

References: (**tx**) Sokanovskii 1960: 675.

***baikalicus* Reitter** 1899: 286. Holotype, sex?; Quellgebiet des Irkut; NHMB, Budapest.
Figures: Grune 1979: 90, Tsai & Li 1959: 92.
Distribution: Asia (Heilongjiang, "Mongolia" in China/ Japan/ Sakhalin Island, Siberia in E USSR), Europe (Finland/ W USSR).
Hosts: *Larix* spp., *Pinus koraiensis*.
Notes: (3) Sokanovskii 1960: 675 (*ursus*, nomen nudum).
References: (**bv**) Grune 1979: 91; Rozhkov 1970: 141. (**cn**) Anonymous 1980g; Esterberg 1959; Florov 1949: 86; Kontkanen 1932: 62; Kurenzov 1935c: 188, 1956a: 87; Nestertschuk 1930: 173. (**ec**) Kostin 1964: 109; Kurenzov 1934a: 50; Rudnev 1958: 372; Yanovskii 1977b. (**hb**) Kostin 1960: 133; Krivolutskaya 1973: 139; Kurenzov 1935a: 20, 35, 1948b: 102, 1950d: 206; Postner 1974: 425; Rimski-Korsakov et al. 1949: 300; Rozhkov 1970: 141; Stark 1952: 326; Vitomskii 1928a: 178. (**ds**) Anonymous 1980g; Esterberg 1959; Grune 1979: 91; Hagedorn 1910d: 66; Hansen, V. 1939; Hellen 1947; Klefbeck & Sjoberg 1960: 230; Kleine 1913a: 90, 1913b: 136, 1914b: 247, 250, 1934a: 155; Kontkanen 1932: 62; Krivolutskaya 1973: 139, 1983; Kurenzov 1934a: 50, 1935a: 20, 35, 1935c: 188, 1936a: 113, 1936b: 351, 1938a: 66, 1957b: 17, 1967; Murayama 1937b: 370, 1954b: 173, 1957c: 588, 601, 607; Nestertschuk 1930: 675; Nuorteva 1971: 71; Postner 1974: 425; Rimski-Korsakov et al. 1949: 300; Rozhkov 1970: 141; Sawamoto 1940a: 96, 101; Schedl 1969a: 202; Semenov 1904: 38; Sokanovskii 1960; Stark 1931a: 21, 25, 1931d: 547, 1952: 326; Strand 1946: 600; Yanovskii 1974, 1977a; Yanovskii & Dmitrienko 1983a; Yanovskii & Tegshzhargal 1985: 409; Yin, Huang, & Li 1984: 146; Zinovjev 1955: 191. (**tx**) Balachowsky 1948: 168; Eggers 1928d: 174; Grune 1979: 90–91; Hagedorn 1910a: 96; Krivolutskaya 1958: 159; Kurenzov 1941a: 165, 1948b: 102, 1950: 206; Murayama 1937b: 370–371, 1954b: 173, 1957c: 588, 601, 607; Postner 1974: 425; Reitter 1899: 286, 1913a: 76; Sawamoto 1940a: 96, 101; Schedl 1934f: 1642; Semenov 1904: 38; Sokanovskii 1960: 675; Spessivtsev 1931: 51; Stark 1952: 326; Tsai & Li 1959: 92; Yin, Huang, & Li 1984: 146.

***betulae* Hopkins** 1915b: 50. Holotype ♀; Grant County, Virginia [USA]; USNM, Washington, automatic.
Figures: Bright 1963: 112 (male genitalia).
Distribution: North America (Alberta, British Columbia, Newfoundland, New Brunswick, Ontario, Quebec in Canada/ District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maine, Maryland, Michigan, Mississippi, Montana, New Hampshire, New Jersey, New York, North Carolina, Pennsylvania, Vermont, Virginia, Washington, West Virginia in USA).
Hosts: *Betula lenta, B. lutea, B. papyrifera*, rare in *Fagus grandifolia, Liquidambar styraciflua*.
References: (**ay**) Bright 1963: 106; Thomas, J. B. 1967. (**bv**) Baker, W. L. 1972: 263; Hosking & Knight 1975. (**cn**) Blackman 1950; Chamberlin 1924; Connola et al. 1956; Doane et al. 1936; Felt 1926: 247, 271; Hopkins 1904a: 25; Keen 1938: 132, 1952c: 169; Lindquist, O. H. & Syme 1981: 40; Swaine 1918a: 130–131; Syme & Nystrom 1988: 40. (**ec**) Felt 1906: 468; Hough 1963; Keen 1938: 132; Thompson, W. R. & Simmonds 1964: 128, 1965: 16. (**hb**) Baker, W. L. 1972: 263; Beal & Massey 1945: 159–160; Blackman 1922b: 120–121, 1950; Bright 1963: 109; Chamberlin 1939: 466; Doane et al. 1936; Felt 1906: 468, 1926: 247, 271; Hopkins 1904a: 25; Keen 1938: 132, 1952c: 169; Swaine 1918a: 130, 131; Wood, S. L. 1982b: 727. (**ds**) Anonymous 1926c: 520; Atkinson et al. 1991: 159; Beal & Massey 1945: 159–160; Beaulne 1956; Blackman 1922b: 120–121, 1950; Blatchley & Leng 1916: 611; Bright 1963: 109, 1971b: 126, 1976d: 127; Chamberlin 1939: 466; Dodge 1938: 15; Drake 1921: 204; Drooz 1985: 362; Felt 1926: 247, 271, 1930a: 247; Furniss, M. M. & Johnson 1987: 376; Furniss, R. L. & Carolin 1977: 380; Gast et al. 1989: 385; Hopkins 1893a: 137; Hopping 1922: 128–134; Hough 1963: 572–579; Keen 1929: 42, 1938: 132, 1952c: 169; Kirk 1970; Kleine 1934a: 155; Knull 1932: 67; Leng 1920: 342; Leonard 1928: 520; Lindquist, O. H. & Syme 1981: 40; Martineau 1948: 379; Murayama 1957c: 606; Nash 1951: 46; Patterson & Hatch 1945: 154; Proctor 1946: 208; Syme & Nystrom 1988: 40; Wood, S. L. 1972a: 416, 1982b: 727. (**tx**) Beal & Massey 1945: 159–160; Benoit 1985: 95; Blackman 1922b: 120–121; Blatchley & Leng 1916: 611; Bright 1963: 108–109, 112, 1976d: 127; Chamberlin 1939: 466; Dodge 1938: 15; Hopkins 1915b: 50; Keen 1929: 42; Lindquist, O. H. & Syme 1981: 40; Murayama 1957c: 606; Pardy 1974, 1977, 1983; Swaine 1915: 361, 1918a: 130–131; Syme & Nystrom 1988: 40; Titus, Meikle, & Harrison 1985: 59; Thomas, J. B. 1967; Wood, S. L. 1972a: 416, 1982b: 727.

eichhoffi Hopkins 1894: 279 (reprint p. 5). Holotype ♀; Grant County, Virginia [USA]; USNM, Washington, preoccupied by Ferrari 1867.
References: (**ay**) Hopkins 1894g. (**hb**) Felt 1906: 336–337; Hewitt 1914: 501–518; Hopkins 1894g, 1904b: 320. (**ds**) Gemminger & Harold 1872: 2687; Hagedorn 1910d: 67; Henshaw 1895: 44; Kleine 1913b: 136; Leng 1920: 342; Swaine 1909: 103. (**tx**) Eichhoff 1868d: 419, 1878b: 297; Hagedorn 1910a: 96; Hopkins 1894: 279, 1915b: 50–51; Schedl 1939b: 394; Swaine 1909: 103, 1912: 351–353, 1918a: 131. (**ms**) Eichhoff 1868d: 419.

liquidambaris Hopkins 1915b: 51. Holotype ♂; Virginia Beach, Virginia [USA]; USNM, Washington. Synonymy: Blackman 1922b: 120.

References: (**cn**) Blackman 1950; Doane et al. 1936; Swaine 1918a: 131. (**hb**) Blackman 1950; Chamberlin 1939: 467; Doane et al. 1936; Swaine 1918a: 131. (**ds**) Blackman 1922b: 120–121, 1950; Blatchley & Leng 1916: 612; Chamberlin 1939: 467; Kleine 1934a: 155; Leng 1920: 342. (**tx**) Blackman 1922b: 120–121; Blatchley & Leng 1916: 612; Chamberlin 1939: 467; Hopkins 1915b: 50–51; Swaine 1918a: 131.

***brevipilosus* Murayama** 1957c: 604. Holotype ♂; Mt. Manza, Gumma pref., Japan; USNM, Washington.
Figures: Nobuchi 1966d:pl. 2.
Distribution: Asia (Japan).
Hosts: *Tsuga diversifolia*.
References: (**ds**) Murayama 1957c: 588, 601, 604; Nobuchi 1966b: 19. (**tx**) Murayama 1957c: 588, 601, 604; Nobuchi 1966b: 19, 1966d:pl. 2.

* ***carbonarius* Scudder** 1890: 470. Holotype, sex?; Greenriver, Wyoming [USA], Oligocene; not located.
Figures: Scudder 1890:pl. 8, fig. 6.
Distribution: North America (fossil in Wyoming Oligocene in USA).
Notes: (1) The divided eye is not characteristic of *Dryocoetes*, but suggests affiliation with *Dolurgocleptes*; however, a change in generic placement is not suggested.
References: (**ds**) Handlirsch 1908; Hopkins 1900a: 65. (**tx**) Scudder 1890: 470.

***carpini* Eggers** 1942c: 32. Holotype, sex?; Ussuri, von Lubarkyi; Eggers Collection and Strohmeyer Collection, Eberswalde.
Distribution: Asia (E USSR).
Hosts: *Carpinus cordata*.
References: (**cn**) Kurenzov 1935c: 187. (**ec**) Kurenzov 1934a: 52. (**hb**) Kurenzov 1935a: 19, 34, 1948b: 114; Stark 1952: 329. (**ds**) Krivolutskaya 1983; Kurenzov 1934a: 52, 1935a: 19, 34, 1935c: 187, 1936b: 350, 1965; Stark 1952: 329. (**tx**) Eggers 1942c: 32; Kurenzov 1941a: 167, 1948b: 114; Michalski 1969b: 569; Pfeffer 1944a: 131; Schedl 1979c: 54; Stark 1951: 229, 1952: 329. (**ms**) Pfeffer 1944a: 131.
carpini Stark 1952: 329. Lectotype, sex?; USSR: Maritime Province; IZL, Leningrad, designated by Michalski 1969a: 894. Synonymy: Stark 1951: 229.
References: (**tx**) Michalski 1969a: 894; Stark 1951: 229, 1952: 329.

***carpinivorus* Choo & Woo** 1989: 58. Holotype ♀; Korea: Mt. Hanla, Jeju province; Choo Collection?
Figures: Choo & Woo 1989: 60.
Distribution: Asia (Korea).
Hosts: *Carpinus laxiflora*.
References: (**tx**) Choo & Woo 1989: 58.

***caryi* Hopkins** 1915b: 50. Holotype ♀; Camp Caribou, Maine [USA]; USNM, Washington.
Distribution: North America (Alaska/ Alberta, British Columbia, Quebec in Canada/ Maine, New York, North Carolina, Wyoming in USA).
Hosts: *Picea engelmannii, P. glauca, P. rubra*.
References: (**bv**) Baker, W. L. 1972: 264. (**cn**) Swaine 1918a: 133. (**hb**) Baker, W. L. 1972: 264; Chamberlin 1939: 468; Swaine 1918a: 133. (**ds**) Blatchley & Leng 1916: 611; Bright 1963: 108, 114, 1976d: 130; Chamberlin 1928, 1939: 468; Drooz 1985: 362; Furniss, R. L. & Carolin 1977: 380; Kleine 1934a: 155; Leng 1920: 342; Murayama 1957c: 606; Wood, S. L. 1972a: 417, 1982b: 730. (**tx**) Blatchley & Leng 1916: 611; Bright 1963: 114, 1976d: 130; Chamberlin 1939: 468; Hopkins 1915b: 49–50; Murayama 1957c: 606; Swaine 1918a: 133; Wood, S. L. 1972a: 417, 1982b: 730.

***cerasi* Eggers** 1942c: 32. Holotype, sex?; Ussuri (Cyran), USSR; Eggers Collection (not listed by Anderson & Anderson 1971 or Schedl 1979c).
Distribution: Asia (E USSR).
Hosts: *Cerasus maximowictzii*.
References: (**cn**) Kurenzov 1935c: 188. (**ec**) Kurenzov 1934a: 52. (**hb**) Kurenzov 1935a: 20, 34. (**ds**) Kurenzov 1934a: 52, 1935a: 20, 34, 1935c: 188, 1936b: 351. (**tx**) Eggers 1942c: 32; Michalski 1969b: 569; Pfeffer 1944a: 131; Sokanovskii 1954: 19; Stark 1950: 229. (**ms**) Pfeffer 1944a: 131.
cerasi Stark 1950: 229. Holotype (?); Ussuri (?); nomen nudum (?).
Notes: (1) Stark 1950: 229 cites *cerasi* Eggers as a junior synonym, but we have found no evidence that Stark's name was ever published.
References: (**ds**) Murayama 1957c: 588, 599. (**tx**) Murayama 1957c: 588, 599; Stark 1950: 229.

***confusus* Swaine** 1912a: 351. Holotype ♂; Colorado [USA]; Cornell University Collection, Ithaca, New York.
Figures: Bright 1963: 112, Doidge 1981: 2–3, Kusch 1967, Ryker & Rudinsky 1979: 204.
Distribution: North America (Alberta, British Columbia in Canada/ Arizona, Colorado, Idaho, Montana, New Mexico, Oregon, Utah, Washington, Wyoming in USA).
Hosts: *Abies lasiocarpa,* uncommon in *A. amabilis, A. concolor, Picea engelmannii*.
References: (**ay**) Bright 1963: 110; Farris 1969: 27–32; Thomas, J. B. 1967. (**bv**) Borden et al. 1987; Bright 1963: 110; Kohnle & Vite 1984b; Stock & Borden 1983. (**cn**) Andrews & Erickson 1973b: 14; Andrews & Monts 1977: 5, 1978: 3; Andrews & Vanderwal 1971: 4; Anonymous 1955j: 10, 1960g: 12, 1960q, 1961h, 1961s, 1963e: 17, 1963y, 1982b; Bauman 1967: 174, 1968: 193, 1969: 158; Beddows 1968: 217, 1969: 192; Bennett 1983; Bongberg 1957, 1962; Bousfield & Carlson 1978; Bousfield, Hagle, & Kohler 1988; Brown, A. W. A. 1943: 7; Brown, C. E., Hopkins, & Robins 1960: 86; Brown, C. E., Robins, & Stevenson 1962: 98; Byler et al. 1986; Cahill & Lister

1971; Chamberlin 1924; Chrystal 1949b: 3–11; Cottrell 1967: 98, 1973: 8; Cottrell & Doidge 1972: 5; Cottrell & Erickson 1977: 4, 1978: 4; Cottrell & Fiddick 1962, 1968, 1971: 4, 1972; Cottrell, Unger, & Fiddick 1979: 26; Doane et al. 1936; Doidge 1967: 196, 1968: 119, 1969: 107, 1972: 5, 1973a: 7, 1975: 8, 1976: 6, 1981; Doidge & Koot 1978: 5, 1979: 6–7; Erickson & Wood 1979: 6; Evans, D. 1949: 108; Evenden 1924; Fiddick, Harvey, & Silver 1966; Fiddick & Van Sickle 1982: 17; Fuller & Hostetler 1980; Fuller & Johnson 1985; Geistlinger 1967: 127, 1968: 133, 1969: 126; Gibson et al. 1987; Gillman & Bailey 1978: 9; Grant, J. 1967b: 187, 1968b: 207, 1969b: 183; Grant, J., Lund, & Beddows 1970: 3; Hagle et al. 1987: 44; Hatch 1938: 194; Helzner & Moyer 1979; Hewitt 1920: 16; Hofacker & Loomis 1982: 3, 1983: 3; Hofacker, Loomis, & Gilstrap 1988: 18; Hofacker, Loomis, & Tucker 1984: 6, 1987; Hofacker et al. 1989; Hopping, G. R. 1937: 64, 1946: 3–8, 1951: 74; Hopping, R. 1934; James & Goheen 1981; James & Linnane 1979, 1980: 13; Johnson, D. W. & Averill 1983; Johnson, D. W. & Creasap 1978a, 1978b: 18; Johnson, D. W. & Curtis 1986; Johnson, D. W. & Minnemeyer 1976, 1977: 33; Keen 1938: 125, 1952c: 163, 168; Kendrick & Molnar 1965: 39–43; Klein, W. H. 1968; Klein, W. H. & McGregor 1966; Klein, W. H. & Parker 1970: 17; Knopf, J. 1981; Kohler, Dooling, & Bousefield 1985; Kondo & Moody 1987: 112; Kondo & Taylor 1985: 63; Leech 1946: 81, 1947: 59; Lindgren 1980a: 63; Linnane 1984; Lister & Cahill 1970: 23; Lister & Hildebrand 1984; Loomis, Hofacker, & Tucker 1985: 15, 1986; Lowe & Moyer 1980; Lucht 1966: 31; Lucht & Moore 1963: 19; Lund 1967, 1968; McGregor et al. 1985; McGugan et al. 1958; Molnar 1958: 83, 1965: 563–570; Molnar, Harris, & Ross 1965: 98, 1967: 114; Molnar, Ross, & Fiddick 1971: 79, 1972: 84; Molnar et al. 1968: 116, 1969: 116, 1970: 102; Monts 1967: 79, 1968: 75, 1969: 82; Moody 1988: 86; Morris, E. V. 1967: 162, 1969: 60; Morris, E. V., Brown, & Wegwitz 1970: 4; Morris, E. V. & Monts 1972: 7, 1973a: 9, 1976: 3; Morris, E. V. & Vanderwal 1968: 172; Morris, E. V. & Wood 1978: 4; Ollieu, Stipe, & Hoffman 1980: 27; Ostmark 1956: 7; Ostmark & Wilford 1956: 6, 13; Owen 1986: 8; Prebble 1944: 48; Price 1956: 81–84; Robinson, L. A. & Dooling 1978: 11; Rogers & Hessburg 1985; Ross, D. A., Baranyay, & Fiddick 1973: 85; Ross, D. A., Van Sickle, & Wood 1981: 83; Ruppel 1967: 37; Ryker & Rudinsky 1979: 207; Schuder 1969: 75; Sharon & O'Neil 1985; Silver & Ross 1959: 88, 1960: 98, 1962b: 112, 1963a: 111, 1964b: 113, 1965a: 115; Smith, G. J., & Melvin 1974b; Sterner & Davidson 1981: 36, 1983: 50; Stock & Borden 1983; Swaine 1918a: 130–131, 1933: 25; Thier & Hoffman 1983; Tkacz 1983; Tripp, Ross, & Baranyay 1974: 82; Tripp, Ross, & Hunt 1975: 88; Tripp, Ross, & Van Sickle 1977: 81; Tunnock et al. 1984; Twinn 1934: 123; Wood, C. S. & Van Sickle 1983: 23, 1987: 24, 1989: 23; Wood, C. S., Van Sickle, & Humble 1987: 23; Wood, C. S., Van Sickle, & Shore 1984: 20, 1985: 22; Wood, R. O. 1967: 14, 1969: 90; Wood, R. O. & Doidge 1971: 5, 1972: 18; Wood, R. O., Geistlinger, & Doidge 1970: 3; Wood, R. O. & Koot 1973a: 20; Yasinski & Pierce 1957: 9. (**ec**) Beal 1937a; Davidson 1958; Doidge 1981; Farris 1969; Heliovaara & Lilja 1989; Hopping, G. R. 1950c: 74; James & Goheen 1981; James, Stewart, & Williams 1984; Keen 1938: 125; Kendrick & Molnar 1965; Livingston & Berryman 1972: 1793; Massey 1964: 37–40; Molnar 1962a, 1963, 1964, 1965; Molnar & Cottrell 1960; Poinar 1975: 175; Whitney et al. 1984. (**hb**) Anderson, R. F. 1960: 241; Andrews & Monts 1977: 5; Bright 1963: 104, 1976d: 126; Chamberlin 1939: 467, 1958: 188–189; Doane et al. 1936; Doidge 1981; Evans, J. W. 1952: 140; Farris 1969; Keen 1938: 125, 1952c: 163, 165; Lindgren 1980a: 63; Mathers 1931: 247–248, 775; Molnar & Cottrell 1960: 16, 20; Ryker & Rudinsky 1979: 207; Stock & Borden 1983; Swaine 1918a: 130–131; Wood, S. L. 1982b: 727. (**ds**) Allen, S. J. 1967b: 63, 1977, 1978: 5, 1979: 5; Allen, S. J. & Wood 1973a: 5; Anderson, R. F. 1960: 241; Anonymous 1960: 12, 1963y, 1982b; Bongberg 1957; Bright 1963: 110, 1976d: 126; Brown, C. E., Hopkins, & Robins 1960: 86; Chamberlin 1925, 1939: 467, 1958: 188–189; Evans, J. W. 1952: 140; Evenden 1924; Farris 1969: 529; Furniss, R. L. & Carolin 1977: 380; Gast et al. 1989: 385; Gautreau & Melvin 1974; Hagle et al. 1987: 44; Hopping 1922; Keen 1929: 42, 1938: 125, 1952c: 163, 165; Kleine 1913b: 136, 1934a: 155; Kusch 1967; Leech 1947: 81; Leng 1920: 342; MacKay 1950: 115; Mank 1934: 81; Marchant & Borden 1976; McComb et al. 1953: 3; Murayama 1957c: 606; Ruppel 1967: 37; Schuder 1969: 75; Smith, G. J. & Melvin 1974b; Stock & Borden 1983; Susut & Melvin 1974; Thatcher 1935: 261; Wood, S. L. 1948: 70, 1951a: 128, 1972a: 416, 1982b: 727. (**tx**) Benoit 1985: 95; Bright 1963: 108, 110, 112, 1967b: 674, 1976d: 126; Chamberlin 1939: 467, 1958: 188–189; Doidge 1981: 2–3; Doidge & Koot 1978:fig. 5; Eggers 1926b: 136; Hoebeke 1978; Keen 1929: 42; Kusch 1967; Muesebeck 1942: 96, 1950: 132; Murayama 1957c: 606; de Ruette 1970: 100; Ryker & Rudinsky 1979: 204, 207; Swaine 1912a: 351–352, 1915: 361, 1918a: 130–131; Thomas, J. B. 1967; Wood, S. L. 1951a: 128, 1972a: 416, 1982b: 727. (**ms**) Hatch 1938: 194; Prebble 1944: 48.

abietis Hopkins 1915b: 50, 52. Holotype ♀; Lake McDonald, Montana [USA]; USNM, Washington. Synonymy: Swaine 1918a: 131.
References: (**ds**) Kleine 1934a: 155; Leng 1920: 342. (**tx**) Hopkins 1915b: 50, 52; Swaine 1918a: 131–132.

***cristatus* Inouye & Nobuchi** 1959a: 122. Holotype, sex?; Nopporo Nat. Forest nr. Sapporo, Hokkaido, Japan; Nobuchi Collection, Ibaraka.
Figures: Inouye & Nobuchi 1959a: 122.
Distribution: Asia (Japan).
Hosts: *Pseudotsuga taxifolia*.
References: (**tx**) Inouye & Nobuchi 1959a: 122.

° ***diluvialis* (Wickham)** 1916: 18 (*Pityophthoridea*). Holotype, sex ?; fossil in Miocene, Florissant, Colorado [USA]; not located.
Figures: Wickham 1916: 18.
Distribution: North America (fossil in Miocene in Colorado in USA).
References: (**tx**) Wickham 1916: 18.

***eichhoffi* Ferrari** 1867: 29. Syntypes 2, sex?; Graecia; NHMW, Wien.
Distribution: Europe (Greece).
Notes: (3) Reitter 1890: 175 (treated in *Lymantor*).
References: (**hb**) Wachtl 1876a: 460. (**ds**) Hagedorn 1910d: 67; Kleine 1913b: 136; Murayama 1957c: 607; Schaufuss 1915: 1236; Schilsky 1909: 189; Wachtl 1876a: 460. (**tx**) Eichhoff 1883a: 140; Ferrari 1867a: 29; Hagedorn 1910a: 96; Murayama 1957c: 607; Reitter 1890: 175, 1913a: 75; Schedl 1934f: 1642.

***formosanus* Nobuchi** 1967: 18. Holotype ♂; Formosa to Nogoya Port, Japan, imported; Nobuchi Collection, Ibaraki.
Figures: Nobuchi 1967:pl. 1 (adult).
Distribution: Asia (Taiwan).
Hosts: *Picea* sp.
References: (**tx**) Nobuchi 1967: 11–30, pl. 1.

***granicollis* (LeConte)** 1868: 162 (*Xyleborus*). Holotype, sex?; Sullivan Co., Pennsylvania [USA]; MCZ, Cambridge.
Figures: Bright 1963: 112 (male genitalia).
Distribution: North America (Quebec in Canada/ Arkansas, District of Columbia, Georgia, Illinois, Kentucky, Louisiana, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, E Texas, Virginia in USA).
Hosts: *Picea glauca,* rare in *Abies* sp., *Castanea* sp., *Juglans* sp..
Notes: (1) LeConte 1876: 643 (to *Dryocoetes*).
References: (**ay**) Bright 1963: 111; Hopkins 1894g. (**bv**) Baker, W. L. 1972: 264; Roling & Kearby 1975b, 1977. (**cn**) Chamberlin 1924; Chittenden 1897: 72; Hopkins 1899c: 251, 445; Roling & Kearby 1977; Smith, J. B. 1900: 363; Swaine 1918a: 129–130. (**ec**) Felt 1906: 720, 753; Roling & Kearby 1977. (**hb**) Baker, W. L. 1972: 264; Chamberlin 1939: 465; Deyrup & Atkinson 1987a: 65; Felt 1906: 720, 753; Hopkins 1894g, 1899c: 251, 445; Swaine 1918a: 129–130; Wood, S. L. 1982b: 728. (**ds**) Anonymous 1926c: 520; Blackwelder & Blackwelder 1948; Blatchley & Leng 1916: 611; Bright 1963: 111, 1976d: 128; Chamberlin 1925, 1939: 465; Chapuis 1869; Deyrup 1981b: 6; Deyrup & Atkinson 1987a: 65; Drooz 1985: 362; Gemminger & Harold 1872: 2687; Hagedorn 1910d: 67; Henshaw 1882: 269, 1885: 148; Hopkins 1893a: 138, 1893b: 212; Hubbard & Schwarz 1878: 643; Kleine 1913b: 136, 1914b: 399, 1934a: 155; Leng 1920: 342; Leonard 1928: 520; Murayama 1957c: 606; Smith, J. B. 1900: 363, 1910: 402; Swaine 1909: 103; Ulke 1902: 56; Weber & McPherson 1991: 54; Wood, S. L. 1982b: 728. (**tx**) Benoit 1985: 95; Blatchley 1916: 611; Bright 1963: 108, 111–112, 1976d: 128; Chamberlin 1939: 465; Eggers 1926b; Eichhoff 1878b: 291; Hagedorn 1910a: 70; Hopkins 1894: 279, 1915b: 50; LeConte 1868: 162, 1876: 361; Murayama 1957c: 606; Schwarz 1891: 79; Swaine 1909: 103, 1918a: 129–130; Wood, S. L. 1982b: 728.

***hectographus* Reitter** 1913a: 76. Syntypes, sex?; Transbaikalien, im Quellgebiet des Irkut, und Ostkarpathen; NHMB, Budapest.
Figures: Balachowsky 1949a: 179 (adult), Li, Shi, & Ao 1984L265, Pfeffer 1989a:pl. 7, Yin, Huang, & Li 1984: 150.
Distribution: Asia ("Manchuria", Qinhai, Shanxi, Sichuan, Yunnan in China/ Japan/ Sakhalin Island, Siberia in E USSR), Europe (Bulgaria/ Czechoslovakia/ Finland/ France/ Hungary/ Norway/ Poland/ Sweden/ W USSR).
Hosts: *Picea* spp., *Pinus* spp., *Abies* spp.
References: (**bv**) Annila 1975: 8; Chararas & Deschamps 1962; Hellen 1921; Laumond & Ritter 1971; Novak, V. 1962b; Nuorteva 1956c: 23; Nuorteva & Nuorteva 1968; Rozhkov 1970: 141; Prell 1930c: 639, 1931: 369. (**cn**) Chorbadzhievo 1929; Eidmann 1965c; Esterberg 1959; Florov 1949: 90; Grandi 1951; Hellen 1921; Inouye 1955; Juutinen 1960: 30; Kurenzov 1935c: 189; Marcu 1926c: 64; Nilssen 1978a; Nosek 1951: 106, 1952b: 100; Novak, V. 1959b: 73; Nuorteva & Nuorteva 1968; Pfeffer 1948a: 800, 1949b: 150, 1950c: 2; Rodary 1959: 850; Saalas 1949: 342, 374; Titova 1966; Tragardh & Butovitsch 1936: 578; Wilke 1931: 669; Yanagisawa 1952: 105. (**ec**) Annila 1975: 11, 1977; Balazy 1964, 1968; Balazy & Michalski 1964b; Chararas 1957a, 1959c: 113–129, 1959d, 1959g: 214–233, 1960a: 31; Eidmann 1965c; Heqvist 1963: 153; Inouye et al. 1955: 63; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1980a, 1983; Kirschenblat 1948; Kleine 1944: 71; Kosarievskaya & Mamajev 1962: 450; Kostin 1964: 109; Krivosheina 1974; Kurenzov 1934a: 54; Michalski & Ratajczak 1989; Nishiguchi 1959: 271; Nosek 1951: 106, 1952b: 100; Novak, V. 1962b; Nuorteva 1956a: 17, 1957b: 68, 1959d: 203, 1967a, 1968a, 1970, 1971; Nuorteva & Nuorteva 1968; Palmen 1946: 194; Pfeffer 1932a: 13, 1943b: 180, 1949b: 150, 1950c: 2, 1959: 3; Poinar 1972, 1975: 157; Rodary 1959: 850; Ruhm 1957b: 254; Ruhm & Chararas 1957: 253–269; Saalas 1917a: 18, 1930: 119, 1949: 342, 374, 1951: 15;

Titova 1966; Wilke 1931: 669; Zinovjev 1957: 340. (**hb**) Annila 1977; Balachowsky 1948; Chararas 1962c: 415; Chorbadzhievo 1929; Grandi 1951; Heyrovsky 1929: 37–38; Inouye et al. 1955: 63; Li, Shi, & Ao 1984: 47; Karpinski 1933b: 29; Kostin 1960: 133; Krivolutskaya 1956: 832, 1960: 78, 1973: 140; Kurenzov 1935a: 35, 1948b: 100, 1950d: 207; Nilssen 1979a, 1984; Nuorteva 1956c: 23, 1967a, 1968a, 1970; Opanasenko & Kononenko 1966; Orest 1926a: 68, 73; Palm 1956: 63; Pfeffer 1941c: 5; Prell 1930c: 639, 1931: 369; Qiu & Hus 1958: 267; Rozhkov 1970: 141; Saalas 1949: 342, 374, 1951: 15; Spessivtsev 1923: 210, 1928a: 222; Stark 1952: 338; Tragardh 1939b: 158, 200; Tschorbadjiev 1929: 167; Yang et al. 1989c; Zinovjev 1957: 340. (**ds**) Balachowsky 1948; Bistrom & Vaisanen 1988: 42; Buresh & Lazarov 1956; Chorbadzhievo 1929; Csiki 1914; Eder 1934; Endrodi 1958b; Escherich 1932b; Esterberg 1959; Hansen, V. 1939; Hellen 1923: 51, 1947; Holzschuh 1977; Horion 1935, 1951; Jacentkovsky 1939: 77; Jamnicky 1960a; Kaisila 1952: 18; Karpinski 1931: 19, 28, 1933a: 290, 1933b: 29, 1948a: 175, 1948b: 230; Klefbeck & Sjoberg 1960: 230; Kleine 1934a: 155; Kono 1938b: 65, 68–69; Kono & Tamanuki 1939: 90, 93; Krausse 1925: 78; Krivolutskaya 1956: 832, 1960, 1965a: 238, 1973: 140, 1983; Kurenzov 1934a: 54, 1935a: 35, 1935c: 189, 1936a: 111, 1936b: 351, 1938a: 62, 1951b: 17; Larroche & Torossian 1971; Leclercq 1971; Li, Shi, & Ao 1984: 47; Lindberg & Saris 1952: 59; Lundberg 1974: 92; Lundblad 1950c: 115; Marcu 1926c: 64; Munster 1928: 291; Murayama 1954b: 202, 1957c: 588, 598; Nakane et al. 1963: 383; Negru 1966b: 402; Nunberg 1928b: 88, 108, 1954: 56; Nuorteva 1956b: 168, 1971: 67; Orest 1926c: 64; Palm 1946: 122, 1948a: 91, 1956: 63; Palmen 1946: 194; Pfeffer 1926a: 11, 1926b: 58, 1930b: 120, 1931b: 75, 1935: 159, 1936: 90, 1950b: 75, 1989a: 57; Platonoff 1943: 141; Reitter 1916: 351; Roubal 1927: 48, 1935b: 72, 1941: 268; Rozhkov 1970: 141; Saalas 1916: 110–116, 1917a: 18, 1930: 119, 1931: 70; Schaufuss 1915: 1236; Schedl 1980a: 18; Stark 1931a: 25, 1931d: 547, 1952: 338; Strand 1944: 600–601; Tragardh 1939b: 158, 200; Tschorbadjiev 1929: 162; Wegelius 1960: 106; Wichmann 1927a: 68–69; Wilke 1931: 669; Yanovskii 1977a; Yanovskii & Dmitrienko 1983; Yin & Huang 1981: 564; Zinovjev 1955: 187. (**tx**) Balachowsky 1948: 168, 1949a: 179; Eggers 1914: 297–298, 1930b: 30, 1941c: 121; Endrodi 1957a: 307, 1957b; Fleischer 1927; Karpinski 1931: 19; Krivolutskaya 1956: 832, 1958: 157; Kurenzov 1941a: 168–169, 1948b: 100, 1950: 207; Li, Shi, & Ao 1984: 265; Murayama 1954b: 202, 1957c: 588, 598; Nakane et al. 1963: 383; Negru 1966b: 402; Nilssen 1979a, 1979b; Nunberg 1954: 56; Pfeffer 1932b: 20, 1941c: 5, 1947e: 6, 1955a: 179, 1989a:pl. 7; Reitter 1913a: 76, 1916: 351; Saalas 1949: 342, 374; Schedl 1934f: 1642, 1980a: 18; Sokanovskii 1930: 801–802; Spessivtsev 1922a: 473, 491, 1923: 209–210, 1925a: 175, 1925b: 31, 1928: 235, 1931: 52–53; Stark 1952: 338; Yin & Huang 1981: 564; Yin, Huang, & Li 1984: 150. (**ms**) Escherich 1932b; Heller 1921; Schimitschek 1930b: 407.

***himalayensis* Strohmeyer** 1908a: 161 (reprint p. 1). Holotype ♂; Kaschmir; Strohmeyer Collection.
Distribution: Asia (Kashmir, Uttar Pradesh in India).
Hosts: *Juglans regia, Pyrus lanata.*
References: (**ds**) Hagedorn 1910d: 67; Kleine 1913b: 136, 1914b: 271; Murayama 1957c: 607. (**tx**) Hagedorn 1910a: 96; Murayama 1957c: 607; Schedl 1934f: 1642; Strohmeyer 1908a: 161.

***indicus* Stebbing** 1914: 549. Syntypes 5, sex?; N-W Himalaya: Jaunsar; FRI, Dehra Dun.
Distribution: Asia (Himachal Pradesh, Kashmir, Uttar Pradesh in India/ Nepal).
Hosts: *Abies webbiana, Picea morinda, Pinus excelsa.*
References: (**ay**) Gardner 1934b: 1–17. (**cn**) Pierce, W. D. 1917: 81; Roonwal 1954: 12; Stebbing 1914: 549. (**ec**) Beeson 1922c: 495; Stebbing 1914: 549. (**hb**) Beeson 1922c: 495; Stebbing 1914: 549. (**ds**) Beeson 1922c: 495, 1961: 287; Kleine 1934a: 155; Murayama 1957c: 607; Pierce, W. D. 1917: 81; Roonwal 1954: 12; Schedl 1973b: 210. (**tx**) Eggers 1925: 157; Gardner 1934b; Murayama 1957c: 607; Stebbing 1914: 549.

***infuscatus* Murayama** 1937b: 370. Syntypes, sex?; Horyuri, Japan; USNM, Washington.
Distribution: Asia (Japan/ Korea/ E USSR).
Hosts: *Larix dahurica koreana, Pinus koraiensis.*
References: (**ds**) Cho 1957; Choo 1983: 165; Choo & Woo 1985: 165; Ko 1969: 276; Murayama 1937a: 3, 1937b: 370, 1939: 143, 1942a: 56, 1948: 6, 1957c: 588, 602. (**tx**) Choo 1983: 83; Murayama 1937b: 370–371, 1957c: 588, 602.

orientalis Kurenzov 1941a: 169, 233. Syntypes, sex?; southern parts Soviet Far East (upper course of Suputinka River); Mountainous-Taiga Station and Zoological Institute, Academy of Science, USSR. Synonymy: Murayama 1957: 602.
Notes: (3) Kurenzov 1948a: 51 (named form *orientalis pilosiusculus,* no status).
References: (**hb**) Krivolutskaya 1973: 139; Kurenzov 1948a: 51, 1948b: 108, 1950d: 147; Stark 1952: 329. (**ds**) Krivolutskaya 1965a: 236, 1973: 139, 1983; Stark 1952: 327; Yanovskii & Tegshzhargal 1985: 409. (**tx**) Krivolutskaya 1958: 159; Kurenzov 1941a: 169, 233, 1948a: 51, 1948b: 108, 1950: 161; Michalski 1969a: 895, 1969b: 569; Murayama 1957: 602; Stark 1952: 327.

***italus* Eggers** 1940f: 44. Holotype, sex?; Italien (Cassano Spinola, Prov. Alessandria); Solari Collection.
Distribution: Europe (Italy).

Notes: This is probably a synonym of *alni*, holotype not examined by us.
References: (**ds**) Murayama 1957c: 607. (**tx**) Eggers 1940f: 44; Murayama 1957c: 607.

***karamatsu* Sawamoto** 1940a: 97, 102. Holotype, sex?; Honshu, Japan; Ent. Inst. der Kaiserlichen Hokkaido Univ.
Distribution: Asia (Japan).
Hosts: *Larix leptolepis*.
References: (**ds**) Murayama 1954b: 173, 1957c: 588, 603; Sawamoto 1940a: 96, 102. (**tx**) Murayama 1954b: 173, 1957c: 588, 603; Sawamoto 1940a: 97, 102–104.

***melaenus* Eichhoff** 1872a: 136. Holotype, sex?; Brasilia; Hamburg Museum, lost.
Distribution: South America (Brazil).
Notes: (3) This species obviously does not belong to this genus; it may be an *Araptus*, or possibly *Dendrocranulus*.
References: (**ds**) Gemminger & Harold 1872: 2687; Hagedorn 1910d: 67; Kleine 1913b: 136, 1914b: 336; Murayama 1957c: 607. (**tx**) Eichhoff 1872a: 136, 1878b: 287; Hagedorn 1910a: 95–96; Murayama 1957c: 607.

***niijimai* Nobuchi** 1959a: 11. Holotype, sex?; Misono near Kutchan, Hokkaido; Nobuchi Collection, Ibaraki.
Distribution: Asia (Japan).
Hosts: *Picea jezoensis*.
References: (**tx**) Nobuchi 1959a: 11.

***padi* Stark** 1952: 335. Syntypes, sex?; Siberia (Usurie: Sutschan); IZL, Leningrad.
Distribution: Asia (Sakhalin Island, E USSR).
Hosts: *Acer* sp., *Alnus* sp., *Echinopanax* sp., *Micromelas* sp., *Padus maaki*, *Syringa robusta*.
References: (**hb**) Kurenzov 1948b: 121; Stark 1952: 335. (**ds**) Krivolutskaya 1983; Kurenzov 1940a: 77, 1941a: 170; Murayama 1957c: 588, 599; Stark 1952: 335. (**tx**) Krivolutskaya 1958: 144; Kurenzov 1941a: 170, 1948b: 121; Murayama 1957c: 588, 599; Stark 1952: 335.

***picipennis* Eggers** 1926b: 138. Lectotype, sex?; Jozankei (Sapporo), Japan; USNM, Washington, designated by Anderson & Anderson 1971: 138.
Figures: Yin, Huang, & Li 1984: 145 (head, declivity).
Distribution: Asia (Sichuan in China/ Japan).
Hosts: *Acer mayeri*, *Salix* sp.
References: (**ds**) Murayama 1954b: 202, 1955: 99, 1957c: 588; Yin, Huang, & Li 1984: 145. (**tx**) Anderson, W. H. & Anderson 1971: 25; Eggers 1926b: 138; Murayama 1954b: 202, 1955: 99, 1957c: 588; Schedl 1934f: 1642, 1979c: 193; Yin, Huang, & Li 1984: 145.

***pilosus* Blandford** 1894d: 92. Holotype, sex?; Nikko, Japan; BMNH, London.
Distribution: Asia (Japan).
Notes: (3) This species might belong to *Taphrorychus*, holotype not examined.
References: (**ds**) Blandford 1894c; Choo 1983: 83; Choo & Woo 1985: 165; Kleine 1913b: 136, 1914b: 258; Krivolutskaya 1983; Kurenzov 1967; Murayama 1936a: 129, 1954b: 174, 1957c: 588, 599; Nakane et al. 1963: 383; Nobuchi 1966b: 19. (**tx**) Blandford 1894d: 92; Choo 1983: 83; Murayama 1934c: 299, 1936a: 129, 1954b: 202, 1957c: 588, 599; Nakane et al. 1963: 383; Nobuchi 1966b: 19; Schedl 1934f: 1642, 1962p: 205; Stebbing 1908b: 11.

***pini* Niisima** 1909: 152. Syntypes 5, sex?; Makkarinupuri, Prov. Ishikari, Japan; Nobuchi Collection, Ibaraki.
Figures: Nakane et al. 1963:pl. 192, Nobuchi 1966d:pl. 2.
Distribution: Asia (Japan/ Korea/ Sakhalin Island in E USSR).
Hosts: *Picea* spp., *Pinus* spp., *Larix* spp., *Abies* sp.
References: (**ec**) Inouye et al. 1955: 63. (**hb**) Inouye et al. 1955: 63; Krivolutskaya 1956: 833. (**ds**) Choo, Woo, & Nobuchi 1988a: 134; Kleine 1913b: 136, 1914b: 258, 1934a: 155; Kono & Tamanuki 1939: 94; Krivolutskaya 1956: 833; Murayama 1948: 2, 1949a: 12, 1953c: 145, 1954b: 202, 1957c: 588, 602; Sawamoto 1940a: 96, 101. (**tx**) Hagedorn 1910a: 96; Inouye & Nobuchi 1959a: 122–123; Krivolutskaya 1956: 833, 1958: 160; Murayama 1954b: 202, 1957c: 588, 602; Nakane et al. 1963:pl. 192; Niisima 1909: 152; Nobuchi 1966d:pl. 2; Sawamoto 1940a: 96, 99, 101–102; Sokanovskii 1958: 39; Schedl 1934f: 1642.

***pumilio* Eichhoff** 1878b: 295. Holotype, sex?; America meridionalis (Venezuela); Hamburg Museum, lost.
Distribution: South America (Venezuela).
Notes: (3) This species is obviously placed in the wrong genus; it may belong to *Araptus* or *Dendrocranulus*.
References: (**ds**) Hagedorn 1910d: 67; Kleine 1913b: 136, 1914b: 339; Murayama 1957c: 607. (**tx**) Eichhoff 1878b: 295; Hagedorn 1910a: 96; Murayama 1957c: 607.

***pusillus* Eggers** 1933f: 7. Holotype, sex?; Amurgebiet; Eggers Collection, in NHMW, Wien.
Distribution: Asia (E USSR).
References: (**hb**) Stark 1952: 331. (**ds**) Stark 1931e: 142, 1952: 331. (**tx**) Eggers 1933f: 7; Michalski 1969b: 569; Schedl 1979c: 206; Sokanovskii 1954: 18, 1960: 675; Stark 1952: 331.

***quadrisulcatus* Strohmeyer** 1908b: 72. Holotype, sex?; Kaschmir; Strohmeyer Collection.
Distribution: Asia (Kashmir, Uttar Pradesh in India).
Hosts: *Abies pindrow*, *A. webbiana*.
References: (**cn**) Roonwal 1954: 17. (**ds**) Beeson 1961: 287; Hagedorn 1910d: 67; Kleine 1913b: 136, 1914b: 271; Roonwal 1954: 17. (**tx**) Hage-

dorn 1910a: 67; Schedl 1934f: 1643; Stebbing 1908b: 11; Strohmeyer 1908b: 72.

***ramicola* Reitter** 1894a: 94. Syntypes 2, sex?; Akbes, in Syrien; NHMB, Budapest.
Distribution: Asia (Syria), Europe (Bulgaria).
Hosts: *Corylus avellana*, *Fagus orientalis*.
Notes: (3) Pfeffer 1985: 141 (treated in *Saliciphilus*).
References: (**bv**) Grune 1979: 127. (**cn**) Chorbadzhievo 1929. (**hb**) Chorbadzhievo 1929; Tschorbadjiev 1929: 172. (**ds**) Buresh & Lazarov 1956; Chorbadzhievo 1929; Grune 1979: 127; Hagedorn 1910d: 67; Hariri 1971: 127; Kleine 1913b: 136; Murayama 1957c: 588; Pfeffer 1936: 90; Postner 1974: 440; Reitter 1894a: 94; Schaufuss 1915: 1244; Schedl 1961b: 185; Sokanovskii 1960; Tschorbadjiev 1929: 172. (**tx**) Grune 1979: 127; Hagedorn 1910a: 96; Murayama 1957c: 588; Pfeffer 1985b: 141; Postner 1974: 440; Reitter 1894a: 94, 1913a: 97; Schedl 1934f: 1642; Sokanovskii 1954: 18, 1960: 675.

***rotundicollis* Eggers** 1928d: 174. Holotype, sex?; Sudaustralien (Gawler); Prague Museum.
Distribution: Australia.
Notes: (3) This species almost certainly belongs to *Cyrtogenius*.
References: (**tx**) Eggers 1928d: 174; Schedl 1940b: 434.

***rugicollis* Eggers** 1926b: 137. Lectotype, sex?; Sachalin (Osawa), Japan; USNM, Washington, designated by Anderson & Anderson 1971: 28.
Figures: Li, Shi, & Ao 1984: 265, Nakane et al. 1963:pl. 192, Nobuchi 1966d:pl. 2.
Distribution: Asia (Shanxi in China/ Japan/ Kurile Islands/ Sakhalin Island, Siberia in E USSR).
Hosts: *Picea* spp., *Larix* spp., *Abies* spp., *Pinus* spp.
References: (**cn**) Anonymous 1980g; Inouye 1949a: 18; Inouye & Yamaguchi 1955a: 235; Kurenzov 1935c: 187. (**ec**) Inouye & Nobuchi 1959b: 41; Inouye & Yamaguchi 1955a: 235; Inouye et al. 1955: 63; Kamijo 1981; Kurenzov 1934a: 54; Nishiguchi 1960c. (**hb**) Inouye et al. 1955: 63; Krivolutskaya 1956: 832, 1973: 139; Kurenzov 1935a: 36, 1948b, 1950d: 208; Li, Shi, & Ao 1984: 47; Qiu & Huo 1958: 265; Stark 1952: 333. (**ds**) Anonymous 1980g; Kono 1938b: 65, 68; Kono & Tamanuki 1939: 89, 93–94; Krivolutskaya 1956: 832, 1965a: 237, 1973: 139, 1983; Kurenzov 1934a: 54, 1935a: 36, 1935c: 187, 1936a: 113, 1936b: 351, 1938a: 62, 1951b: 18, 1963b: 115; Li, Shi, & Ao 1984: 47; Murayama 1953c: 145, 1954b: 174, 1957c: 588, 599; Nakane et al. 1963: 383; Nobuchi 1966b: 20; Sawamoto 1940b: 141, 146; Stark 1952: 333; Tamanuki 1933: 1–54. (**tx**) Anderson, W. H. & Anderson 1971: 28; Eggers 1926b: 137, 1933a: 97; Krivolutskaya 1956: 832, 1958: 158; Kurenzov 1941a: 170–172, 1948b: 101, 1950: 208; Li, Shi, & Ao 1984: 265; Murayama 1954b: 174, 1957c: 588, 599; Nakane et al. 1963: 383, pl. 192; Nobuchi 1959a: 11, 1966b: 20, 1966d:pl. 2; Sawamoto 1940b: 141, 146–147; Schedl 1934f: 1643; Stark 1952: 333.

***sechelti* Swaine** 1915b: 359. Lectotype ♀?; Sechelt, British Columbia; CNCI, Ottawa, designated by Bright 1967b: 674.
Distribution: North America (British Columbia in Canada/ Colorado, Idaho, Montana, Oregon, Utah in USA).
Hosts: *Abies lasiocarpa*.
References: (**cn**) Swaine 1918a: 129–130. (**hb**) Bright 1976d: 129; Chamberlin 1939: 465, 1958: 191; Swaine 1918a: 129–130; Wood, S. L. 1982b: 730. (**ds**) Bright 1976d: 129; Chamberlin 1939: 465, 1958: 191; Furniss, R. L. & Carolin 1977: 380; Gast et al. 1989: 385; Leng 1920: 342; Murayama 1957c: 606; Schedl 1969a: 202; Wood, S. L. 1948: 69, 1951a: 128, 1972a: 417, 1982b: 730. (**tx**) Bright 1963: 108, 1967b: 674, 1976d: 129; Chamberlin 1939: 465, 1958: 191; Hoebeke 1978; Murayama 1957c: 606; de Ruette 1970: 100; Schedl 1979c: 223; Swaine 1915b: 359–360, 1918a: 129–130; Wood, S. L. 1951a: 128, 1972a: 417, 1982b: 730.

***striatus* Eggers** 1933f: 8. Holotype, sex?; Wladiwostok; USNM, Washington.
Figures: Nakane et al. 1963:pl. 192.
Distribution: Asia (Heilongjiang in China/ Japan/ Sakhalin Island, Siberia in E USSR).
Hosts: *Abies holophylla*, *A. nephrolepis*, *A. sachalinensis*.
References: (**cn**) Anonymous 1980g; Kurenzov 1935c: 189. (**hb**) Krivolutskaya 1956: 837, 1973: 138; Kurenzov 1935a: 35, 1950d: 208; Kurenzov & Kononov 1961: 600; Stark 1952: 325. (**ds**) Anonymous 1980g; Kleine 1934a: 155; Krivolutskaya 1956: 837, 1973: 138; Kurenzov 1935a: 35, 1935c: 189; Kurenzov & Kononov 1961: 595; Murayama 1957c: 588, 600; Nakane et al. 1963: 383; Stark 1952: 325; Yin, Huang, & Li 1984: 147. (**tx**) Eggers 1933f: 8; Krivolutskaya 1956: 837, 1958: 162; Kurenzov 1941a: 170–175, 1950: 208; Kurenzov & Kononov 1961: 600; Murayama 1957c: 588, 600; Nakane et al. 1963: 383. pl. 192; Schedl 1941a: 42, 1979c: 238; Stark 1952: 325; Yin, Huang, & Li 1984: 147.

abietinus Kono & Tamanuki 1939: 90. Holotype, sex?; Sachalin (Naipuchi); not given. Synonymy: Murayama 1957c: 600.
References: (**cn**) Inouye 1955. (**ec**) Inouye et al. 1955: 63. (**hb**) Inouye et al. 1955: 63; Stark 1952: 326. (**ds**) Kono & Tamanuki 1939: 91; Murayama 1954b: 202; Stark 1952: 326. (**tx**) Kono & Tamanuki 1939: 90; Murayama 1954b: 192, 202; Stark 1952: 326.

***suecicus* Eggers** 1923: 136. Holotype, sex?; Rorstromt in Schweden; Eggers Collection, in NHMW, Wien.
Distribution: Europe (Finland/ Sweden/ W USSR).
References: (**ds**) Hansen, V. 1939; Murayama

1957c: 607. (**tx**) Eggers 1923: 136, 1930b: 30, 1941c: 121; Murayama 1957c: 607; Schedl 1934g: 1643, 1979c: 245; Sokanovskii 1954: 19.

***uniseriatus* Eggers** 1926b: 145. Holotype, sex?; Sapporo; Nobuchi Collection, Ibaraki.
Distribution: Asia (Shanxi in China/ Japan).
Hosts: *Pinus armandii, P. densiflora*.
References: (**ds**) Kono & Tamanuki 1939: 89–94; Murayama 1954b: 202; Nobuchi 1966: 20; Yin, Huang, & Li 1984: 148. (**tx**) Eggers 1926b: 145; Murayama 1954b: 202; Nobuchi 1966b: 20; Sawamoto 1940: 101; Schedl 1934f: 1643; Sokanovskii 1954: 19, 1958: 39; Yin, Huang, & Li 1984: 148.

***ussuriensis* Eggers** 1933f: 8. Syntypes, sex?; Ussuri; Stark Collection, 2 syntypes in Eggers Collection, in NHMW, Wien.
Figures: Krivolutskaya 1968: 60 (head, proventriculus).
Distribution: Asia (Sakhalin Island and E USSR).
Hosts: *Acer* spp., *Alnus fruticosa, A. kamtschatica*.
References: (**cn**) Kurenzov 1935c: 188, 1956a: 90. (**hb**) Krivolutskaya 1973: 139; Kurenzov 1935a: 20, 34, 1957b: 18; Kurenzov & Kononov 1961: 595. (**ds**) Arnoldi et al. 1955: 704; Kleine 1934a: 155; Krivolutskaya 1965: 236, 1973: 139; Kurenzov 1935a: 20, 34, 1935c: 188, 1936b: 351, 1938a: 64, 1967; Kurenzov & Kononov 1961: 595; Murayama 1957c: 588, 603; Rudnev 1958: 310–313. (**tx**) Eggers 1933f: 8–9; Krivolutskaya 1956: 154, 1958: 162, 1968: 60; Kurenzov 1941a: 170–174; Murayama 1957c: 588, 603; Schedl 1979c: 262.

ussuriensis rugulosus Eggers 1933f: 9. Syntypes, sex?; Ussuri, USSR; not given.
Notes: (1) An apparent aberration that was named as a variety.
References: (**tx**) Eggers 1933f: 9; Schedl 1979c: 262.

***villosus* (Fabricius)** 1792: 367 (*Bostrichus*). Syntypes 2, sex?; Germaniae; UZMC, Copenhagen.
Figures: Grune 1979: 90.
Distribution: Africa (Algeria/ Canary Islands/ Madeira Island/ Tunisia), Europe (Austria/ Belgium/ Bulgaria/ Denmark/ England/ France/ Germany/ Greece/ Sardinia/ Scotland/ Sicily/ Sweden/ Switzerland/ W USSR).
Hosts: *Alnus glutinosus*.
References: (**ay**) Nusslin 1911a: 60. (**bv**) Grune 1979: 91. (**cn**) Anonymous 1979p; Nusslin 1913: 283; Rhumbler 1922: 326; Schimitschek 1955a: 135, 1955c: 84; Sponeck 18171: 316. (**ec**) Adeli 1964; Heqvist 1963: 153; Mahunka 1968; Nusslin 1927: 342; Pfeffer 1928b: 7; Pierce, W. D. 1917: 54; Poinar 1975: 157; Rondani 1873: 140; Ruhm 1956b: 4; Rypinski 1897: 61; Schimitschek 1930a: 326, 1955a: 135; Tudor 1969: 34; Woodring & Moser 1970. (**hb**) Adeli 1964; Budkov 1897; Budge 1949; Bukowsky 1930; Janson 1867: 91; Karpinski 1933: 52–56; Marcu 1927: 425–427; Nusslin 1913: 282, 1927: 342; Postner 1974: 424; Ratzeburg 1837: 130, 1839: 157; Rhumbler 1922: 326; Rupertsberger 1880: 231; Schedl 1981b: 71; Schimitschek 1930a: 326, 1955a: 135; Schwerdtfeger 1981: 188; Spessivtsev 1913a: 93. (**ds**) Adeli 1964; Angus 1965c: 13; Anonymous 1979p; Bartindale & Bartindale 1948: 138; Bejer-Petersen & Jorum 1977: 21; Borchert 1951; Brakman 1966b: 205; Brancsik 1871; Buck 1952, 1955: 142, 1955b: 191; Budkov 1897; Bukowsky 1930; Buresh & Lazarov 1956; Chapuis & Candeze 1853; Chorbadzhievo 1924d; Chrystal 1937; Crowson 1971: 51; Crowson & Hunter 1964: 200; Dallimore & Munro 1922: 189–193; Davidson 1961: 20; Dejean 1821, 1825, 1837; Endrodi 1981: 185; Grune 1979: 91; Hagedorn 1910d: 67; Hansen, V. 1964: 460; Holzschuh 1977; Klefbeck & Sjoberg 1960: 230; Koca 1900: 116; Leclercq 1971; Lucht 1987: 277; Morley 1868: 287; Munro 1926: 4–77; Negru 1966b: 402, 1968a: 456; Normand 1937: 268; Nunberg 1928b: 88, 109; Pfeffer 1989a: 58; Pierce, W. D. 1917: 54; Postner 1974: 424; Schedl 1963e: 155, 1967c: 71, 1971d: 426, 1971f: 146, 1980a: 18, 1981b: 71; Schedl, Lindbert, & Lindberg 1959: 24; Schilsky 1909: 189; Schwerdtfeger 1981: 188; Seidlitz 1872: 397, 1891a: 567; Sharp & Fowler 1893: 34; Verdcourt 1952: 80; Welch, R. C. 1970: 140; Winter, T. G. 1983: 10. (**tx**) Balachowsky 1949a: 181; Bechstein 1818: 75, 216; Bechstein et al. 1805: 102; Bedel 1888b: 400, 416; Bertolini 1872; Brancsik 1871; Bright 1963: 111; Chapuis & Candeze 1853; Chorbadzhievo 1924d; Dejean 1821, 1825; Eggers 1908a: 122, 1911a: 123, 1912b: 117, 1912f: 29, 1921: 40–41, 1923a: 162, 1928d, 1929e: 43, 1933f: 8; Eichhoff 1864: 38, 1878b: 165, 1883a: 115, 140; Fabricius 1792: 367; Grune 1979: 90–91; Hansen, V. 1964: 460; Hopkins 1915b: 49; Iablokoff-Khnzorian 1961: 85; Letzner 1891: 377; Lucht 1987: 277; Negru 1966b: 402; Perris 1877a: 413, 415; Pfeffer 1955a: 171; Portevin 1935: 327; Postner 1974: 424; Reitter 1913a: 77; Sahlberg 1836: 149; Schedl 1952f: 87, 1980a: 18, 1981b: 71; Schedl, Lindberg, & Lindberg 1959: 24; Schimitschek 1937: 53, 1955c: 84; Seidlitz 1872: 397, 1891a: 567; Sokanovskii 1930: 801–802; Spessivtsev 1913a: 93, 1922a: 474, 491, 1925a: 175, 1931: 52; Stresemann et al. 1986: 352; Strohmeyer 1912b: 57.

villosus starhoni Reitter 1913a: 77. Syntypes, sex?; Mahrisch-Ostrau; NHMB, Budapest. Synonymy: Balachowsky 1949a: 181.
References: (**ds**) Reitter 1916: 292. (**tx**) Balachowsky 1949a: 181; Reitter 1913a: 77, 1916: 292; Schedl 1934f: 1643, 1979c: 219.

villosus minor Eggers 1908a: 122. Syntypes, sex?; Sicily: Ragusa; Ragusa Collection.
Notes: (1) Balachowsky 1949a: 182, Pfeffer 1955: 171 (treated as a subspecies).
References: (**cn**) Schimitschek 1944: 175, 1952c: 58. (**ec**) Novak, P. 1952: 416; Schimit-

schek 1941a: 316. (**hb**) Geisthardt 1939: 243–246; Schimitschek 1939c: 271–274, 1944: 175. (**ds**) Horion 1951; Kleine 1913b: 136, 1934a: 155; Novak, P. 1952: 416; Pfeffer 1989a: 58; Ragusa 1934a: 155; Sainte-Claire & Mequignon 1938: 447; Roubal 1941: 268; Schaufuss 1915: 1236. (**tx**) Balachowsky 1949a: 182; Eggers 1908a: 122, 1908e, 1911a, 1921: 40–41; Reitter 1913a: 77; Schedl 1934f: 1642; Sokanovskii 1960: 675, 1961: 483–485.

sardus Strohmeyer 1912b: 57. Syntypes, sex?; Sardinien (Sorgono); Strohmeyer.
Notes: (1) Balachowsky 1949a: 182, Pfeffer 1955: 171 (treated as a subspecies).
References: (**ds**) Csiki 1914; Holdhaus 1923: 115; Kleine 1913a: 307, 1913b: 136; Langhoffer 1915c: 158; Pfeffer 1935: 158, 1947d: 127; Sainte-Claire 1914: 474; Schaufuss 1915: 1236. (**tx**) Balachowsky 1949a: 132; Eggers 1912b: 117, 1914: 40, 1921: 40–41; Pfeffer 1932b: 20; Portevin 1935: 327; Reitter 1913a: 77; Schedl 1934f: 1642, 1979c: 219; Sokanovskii 1960: 675; Strohmeyer 1912b: 57.

Genus *Chiloxylon* Schedl

CHILOXYLON SCHEDL 1959m: 550. Type-species: *Chiloxylon rufulus* Schedl, monobasic.
References: (**hb**) Wood, S. L. 1986a: 75. (**ds**) Wood, S. L. 1986a: 75. (**tx**) Schedl 1959m: 550; Wood, S. L. 1986a: 73, 75.

***rufulus* Schedl** 1959m: 550. Holotype ♀; Matto Grosso: Rio Caraguata; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1959m: 550, 1979c: 215; Wood, S. L. 1986a: 75.

Genus *Dryocoetiops* Schedl

DRYOCOETIOPS SCHEDL 1957d: 13. Type-species: *Ozopemon laevis* Strohmeyer, original designation.
References: (**hb**) Wood, S. L. 1986a: 75. (**ds**) Schedl 1966b: 33; Wood, S. L. 1986a: 75. (**tx**) Schedl 1957d: 13; Wood, S. L. 1986a: 73, 75.

***australis* (Schedl)** 1942c: 181 (*Dryocoetes*). Holotype, sex?; Queensland, Australien; Schedl Collection in NHMW, Wien.
Distribution: Australia (Queensland).
Notes: (1) Schedl 1964m: 308 (to *Dryocoetiops*).
References: (**ds**) Murayama 1957c: 608. (**tx**) Murayama 1957c: 608; Schedl 1942a: 179, 1942c: 181, 1964m: 308, 1979c: 31.

***bicolor* Schedl** 1970b: 360. Holotype ♀; Malaya, Malacca to Nagoya (Japan), imported; PPST, Tokyo.
Distribution: Asia (Malaya).
Hosts: Mersawa.
References: (**tx**) Schedl 1970b: 360, 1979c: 38.

***coffeae* (Eggers)** 1923: 161 (*Dryocoetes*). Holotype ♀; Java; Hamburg Museum, lost.
Figures: Nobuchi 1966e:pl. 2, 1967:pl. 1.
Distribution: Asia ("China"/ Assam, Bengal in India/ Japan/ Malaya/ Sri Lanka/ Taiwan), Indonesia (Borneo, Java), New Guinea, Philippine Islands.
Hosts: *Balanocarpus heimii,Coffea arabica, C. canephora, C. hybrida, Dryobalanops oblongifolia, Intsia palembanica, Kuona laurina, Machilus thunbergii, Palaquium gutta, Quercus* spp, *Shorea sumatrana, Swietenia macrophylla*.
Notes: (1) Schedl 1964k: 308 (to *Dryocoetiops*).
References: (**ay**) Gardner 1934b: 1–17. (**cn**) Low 1975; Mathur & Singh 1960a: 13, 1961a: 79. (**hb**) Browne 1961c: 83–84; Kalshoven 1958b: 174. (**ds**) Browne 1961c: 83, 1972a: 19; Kleine 1934a: 155; LePelley 1968: 146; Low 1975; Mathur & Singh 1960a, 1961a; Murayama 1957c: 607; Nobuchi 1966e: 52–54, 1967: 20; Schedl 1936d: 1, 1959a: 491, 1968e: 262; Thomas, R. T. S. 1960a, 1960b. (**tx**) Eggers 1923: 161; Gardner 1934b; Murayama 1957c: 607; Nobuchi 1966e:pl. 2, 1967: pl. 1; Schedl 1936d: 1, 1939e: 348, 1942d: 4, 1943b: 41, 1959a: 491, 1961f: 88, 1962n: 697, 1964k: 308, 1979c: 59.

javanus Eggers 1936e: 87 (*Dryocoetes*). Holotype ♀; Java (Tjibodas, 1400 m); RNH, Leiden.
Synonymy: Schedl 1962n: 697.
References: (**ds**) Murayama 1957c: 607; Nunberg 1961b: 609. (**tx**) Eggers 1936e: 87–88; Murayama 1957c: 607; Nunberg 1961b: 609; Schedl 1962n: 697.

***eugeniae* (Schedl)** 1942a: 180 (*Dryocoetes*). Holotype, sex?; Malaya, Segamat; BMNH, London.
Distribution: Asia (Malaya/ Singapore).
Hosts: *Eugenia aequa*.
Notes: (1) Schedl 1964k: 308 (to *Dryocoetiops*).
References: (**ds**) Browne 1961c: 85; Murayama 1957c: 607. (**tx**) Murayama 1957c: 607; Schedl 1942a: 180, 1964k: 308, 1979c: 92.

***flavicornis* (Blandford)** 1895a: 320 (*Dryocoetes*). Holotype ♀; Ceylon, Bogawantalawa; BMNH, London.
Distribution: Asia (Sri Lanka).
References: (**ds**) Kleine 1913b: 136, 1914b: 273; Murayama 1957c: 607; Schedl 1959a: 491. (**tx**) Blandford 1895a: 320; Hagedorn 1910a: 96; Murayama 1957c: 607; Schedl 1959a: 491.

***hirsutus* (Schedl)** 1939e: 348 (*Dryocoetes*). Syntypes 3 ♀; Malaya, Selangor: Kanching For. Res.; BMNH, London.
Distribution: Asia (Malaya), Indonesia (Borneo).
Hosts: *Dryobalanops aromatica*.
References: (**ds**) Browne 1961c: 84; Murayama 1957c: 607. (**tx**) Murayama 1957c: 607; Schedl 1939e: 348, 1954c: 154, 1964m: 308, 1979c: 117.

***inopinatus* (Schedl)** 1955b: 294 (*Dryocoetes*). Holotype ♀; Neu-Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**ds**) Murayama 1957c: 608. (**tx**)

Murayama 1957c: 608; Schedl 1955b: 280, 294, 1964m: 308, 1979c: 124.

***kepongi* (Schedl)** 1953c: 296 (*Dryocoetes*). Syntypes 2 ♀; Malaya, Selangor, Kepong; BMNH, London and Schedl Collection in NHMW, Wien.
Distribution: Asia (Malaya).
Hosts: *Artocarpus lanceifolius, A. rigidus, A. scortechini, Campnosperma auriculata, Dryobalanops oblongifolia, Gomphia serrata.*
Notes: (1) Schedl 1964m: 308 (to *Dryocoetiops*), 1979c: 132 (citation of holotype invalid).
References: (**ec**) Beaver 1979b: 298. (**hb**) Beaver 1979b: 298; Beaver & Browne 1978: 587. (**ds**) Beaver & Browne 1978: 587; Browne 1961c: 84, 1986c: 661; Murayama 1957c: 608. (**tx**) Murayama 1957c: 608; Schedl 1953c: 296, 1964m: 308, 1979c: 132.

***laevis* (Strohmeyer)** 1911b: 22 (*Ozopemon*). Holotype ♀; Mindoro, Calapan, Philippine Islands; Philippine Bureau of Science Collection, Manila.
Distribution: Asia (Malaya/ Sri Lanka), Indonesia (Borneo, Java, Sinabang, Sumatra), Philippine Islands (Luzon/ Mindoro).
Hosts: *Dipterocarpus grandiflorus, Hopea odorata.*
Notes: (1) Schedl 1957d: 13 (to *Dryocoetiops*).
References: (**cn**) Mathur & Singh 1960b: 57; Schultze 1923: 401. (**ds**) Kleine 1914b: 290; Mathur & Singh 1960b: 57; Ohno, Yoneyama, & Nakazawa 1982b: 8; Ohno et al. 1987: 87; Schedl 1966b: 32; Schultze 1923: 401. (**tx**) Eggers 1927b: 391; Nobuchi 1983: 301; Schedl 1951i: 50, 1957d: 13, 1964m: 307, 1970i: 224, 1971f: 155; Strohmeyer 1911b: 22–23.

dipterocarpi Hopkins 1915b: 49 (*Ozopemon*). Holotype ♀; Pagbilao, Philippine Islands; USNM, Washington. Synonymy: Schedl 1964m: 307.
References: (**ds**) Kleine 1934a: 157; Schedl 1966b: 40. (**tx**) Hopkins 1915b: 49; Nobuchi 1983: 301; Schedl 1964m: 307.

diversicolor Eggers 1923: 160 (*Ozopemon*). Syntypes 2, sex?; Sinabang auf Insel Simalur, sudlich von Sumatra; RNH, Leiden, and Eggers Collection, presumably in USNM, Washington. Synonymy: Eggers 1927b: 391.
References: (**ds**) Schedl 1938g: 426. (**tx**) Eggers 1923: 160, 1927b: 391; Schedl 1957d: 13.

loebli Schedl 1972j: 227 (*Poecilips*). Holotype, sex?; Ceylon, Central: Hatton, 1400 m, Montagne boisee a l'est de la ville; MHNG, Geneve. Synonymy: Wood examined NHMW, Wien, paratypes to establish synonymy (Wood 1983 notes).
References: (**tx**) Schedl 1972j: 227, 1979c: 140.

orbus Browne 1966: 249 (*Xyleborus*). Holotype ♀; Philippines: Tawi Tawi, Tarawakan; UZMC, Copenhagen. Synonymy: Schedl 1970i: 224.
References: (**tx**) Browne 1966: 249; Nobuchi 1983: 303; Schedl 1970i: 224.

***malaccensis* (Schedl)** 1942a: 180 (*Dryocoetes*). Holotype ♀; Singapur; Schedl Collection in NHMW, Wien.
Distribution: Asia (Malaya).
References: (**ds**) Browne 1961c: 85; Murayama 1957c: 608. (**tx**) Murayama 1957c: 608; Schedl 1942a: 180, 1964m: 308, 1979c: 146.

***nitidus* (Schedl)** 1942a: 179 (*Dryocoetes*). Syntypes, sex?; Java, Anim Sand; Kalshoven Collection and Schedl Collection in NHMW, Wien.
Distribution: Asia (Malaya), Indonesia (Java, Sumatra), New Guinea.
Hosts: *Coffea* sp., *Shorea acuminata.*
Notes: (1) Schedl 1964m: 308 (to *Dryocoetiops*), 1979: 170 (citation of holotype invalid).
References: (**ds**) Browne 1961c: 85; Murayama 1957c: 607; Schedl 1961c: 70. (**tx**) Murayama 1957c: 607; Schedl 1942a: 179, 1955b: 294, 1961c: 70, 1964m: 308, 1979c: 169.

***petioli* Beaver** 1990a: 281. Holotype ♀; Doi Sutep, Chiang Mai, Thailand, 1300 m; BMNH, London.
Figures: Beaver 1990a: 282 (adult outline).
Distribution: Asia (Thailand).
Hosts: *Manglietia garelli* leafstalks.
References: (**tx**) Beaver 1990a: 281.

***schultzei* (Schedl)** 1961f: 88 (*Dryocoetes*). Holotype ♀; Luzon, Isabela, San Mariano; Eggers Collection, in NHMW, Wien.
Distribution: Philippine Islands (Luzon).
Notes: (1) Schedl 1964m: 308 (to *Dryocoetiops*).
References: (**ds**) Schedl 1966b: 41. (**tx**) Nobuchi 1983: 301; Schedl 1961f: 88, 1964m: 308, 1979c: 222.

***semigranulatus* (Schedl)** 1936d: 10 (*Dryocoetes*). Syntypes, sex?; Java: West Preanger; Kalshoven Collection and Schedl Collection in NHMW, Wien.
Distribution: Indonesia (Java).
References: (**ds**) Murayama 1957c: 608. (**tx**) Murayama 1957c: 608; Schedl 1931c: 340, 1936d: 10, 1953c: 296, 1964m: 308, 1979c: 224.

***tonkinensis* (Schedl)** 1942a: 179 (*Dryocoetes*). Holotype, sex?; Tonkin, Montes Mason, 2000 bis 3000 fuss; Schedl Collection in NHMW, Wien.
Distribution: Asia (Tonkin Island in Vietnam).
Notes: (1) Schedl 1964m: 308 (to *Dryocoetiops*).
References: (**ds**) Murayama 1957c: 608. (**tx**) Murayama 1957c: 608; Schedl 1942a: 179, 1954c: 154, 1964m: 308, 1979c: 254.

Genus *Ozopemon* Hagedorn

OZOPEMON HAGEDORN 1908: 382. Type-species: *Ozopemon regius* Hagedorn, monobasic.
References: (**ay**) Nobuchi 1969a: 60. (**hb**) Wood, S. L. 1986a: 75. (**ds**) Schedl 1966b: 40; Wood, S. L. 1986a: 75. (**tx**) Browne 1961: 87; Hagedorn 1908: 382, 1910b: 1; Hopkins 1915b: 9, 48; Wood, S. L. 1986a: 75.

***aplanatus* Schedl** 1942a: 177. Lectotype ♀; Malaya, Selangor, Bukit-Kutu; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 23.
Distribution: Asia (Malaya).
References: (**ds**) Browne 1961c: 89; Schedl 1966b: 301. (**tx**) Nobuchi 1983: 301; Schedl 1942a: 177, 1979c: 23.

***ater* Eggers** 1933a: 101. Holotype ♀; China: Szechuan, Mukue, Tatsienlu; USNM, Washington.
Distribution: Asia (Sichuan in China).
References: (**tx**) Anderson, W. H. & Anderson 1971: 5; Eggers 1933a: 101; Michalski 1969b: 570; Schedl 1979c: 29–30.

***augustae* Eggers** 1923a: 159. Syntypes ♀; Deutsch Neu Guinea, Kaiserin Augusteflussgebiet; MNB, Berlin and Eggers Collection, 1 Eggers syntype in NHMW, Wien.
Distribution: Indonesia (Borneo, Java), Bismarck Islands, Fiji, New Britain, New Guinea.
References: (**ds**) Browne 1966: 246, 1980a: 371, 1983a: 555, 1989a: 2; Ohno, Yoshioka, et al. 1988a: 92, 1989: 371; Schedl 1962i: 72, 1964c: 305, 1965g: 23, 1969e: 156. (**tx**) Eggers 1923: 159; Schedl 1940b: 434, 1942d: 4, 1955b: 280, 1979c: 31.

***borneensis* Eggers** 1923a: 154. Syntypes ♀; Sarawak (Borneo) and Siantar (Ostkuste Sumatra); MCG, Genova, and Eggers Collection, in NHMW, Wien.
Distribution: Indonesia (Borneo, Sumatra).
References: (**tx**) Eggers 1923a: 154; Schedl 1979c: 44.

***brevis* Eggers** 1923a: 155. Lectotype ♀; Sipora suf der Insel Mentawei; USNM, Washington, designated by Anderson & Anderson 1971: 8.
Distribution: Indonesia (Mentawei).
References: (**hb**) Kalshoven 1958b: 175. (**tx**) Anderson, W. H., & Anderson 1971: 8; Eggers 1923a: 155; Schedl 1979c: 47.

***brownei* Schedl** 1953c: 297. Lectotype ♀; Malaya, Selangor, Pahang, the Gap, 2800 ft; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 48.
Distribution: Asia (Malaya), Indonesia (Borneo).
Hosts: *Artocarpus elasticus, Campnosperma* sp., *Parartocarpus* sp.
References: (**hb**) Browne 1959b: 295, 1961c: 87–88; Hamilton 1979: 191. (**ds**) Browne 1961c: 87, 1980c: 483, 1985a: 190; Ohno et al. 1987: 483; Schedl 1969a: 204. (**tx**) Browne 1959b: 295; Nobuchi 1983: 301; Schedl 1953c: 297, 1979c: 48.

***fuscicollis* Hagedorn** 1910b: 3. Syntypes 2 ♀; Java; Hamburg Museum, lost.
Distribution: Indonesia (Java, Mentawei, Sumatra).
Notes: (3) Eggers 1923a: 160 (redescribed).
References: (**ds**) Browne 1980c: 483; Hagedorn 1910d: 67; Kleine 1913b: 138, 1914b: 286, 288. (**tx**) Eggers 1923a: 160, 1927c: 87, 1939b: 8; Hagedorn 1910a: 98, 1910b: 3; Strohmeyer 1911b: 24.

***giganteus* Schedl** 1934c: 38. Holotype ♀; Deutsch-Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1934c: 38, 1955b: 280, 1979c: 104.

***granulatus* Schedl** 1936g: 526. Lectotype ♀; New Guinea: Finsch Haven; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 110.
Distribution: New Guinea.
References: (**ds**) Schedl 1936g: 526. (**tx**) Schedl 1936g: 526, 1942a: 177, 1979c: 110.

***gravidus* (Blandford)** 1896b: 206 (*Dryocoetes*). Syntypes 2 ♀; Borneo, Sarawak; BMNH, London.
Distribution: Indonesia (Sarawak in Borneo).
Notes: (1) Hagedorn 1910d: 69 (to *Ozopemon*).
References: (**ds**) Hagedorn 1910d: 69; Kleine 1913b: 138, 1914b: 289. (**tx**) Blandford 1896b: 206; Hagedorn 1910a: 98, 1910b; Lucas 1920: 472; Strohmeyer 1911b: 24. (**ms**) Lucas 1920: 472.

***grossepunctatus* Eggers** 1923a: 155. Holotype ♀; Kina Balu, Borneo; USNM, Washington.
Distribution: Asia (Malaya), Indonesia (Borneo), New Guinea.
References: (**ds**) Browne 1961c: 89. (**tx**) Anderson, W. H. & Anderson 1971: 14; Browne 1961: 89; Eggers 1923a: 155; Schedl 1939e: 329, 1940b: 435.

***latus* Eggers** 1923a: 156. Syntypes ♀; Suban Ajam und Afr. Njuruk Dempu (Sumatra), Solok, Java; 1 in RNH, Leiden, 1 in SMTD, Dresden, 2 in Eggers Collection, 1 of these Eggers syntypes in NHMW, Wien.
Distribution: Indonesia (Borneo, Celebes, Java, Sumatra).
References: (**ds**) Browne 1965a: 188; Schedl 1961c: 69, 1966b: 40, 1971f: 147. (**tx**) Eggers 1923a: 153, 156, 1927b: 390; Nobuchi 1983: 301; Schedl 1979c: 137.

***major* Strohmeyer** 1911b: 23. Holotype ♀; Luzon, Bataan, Limay, Philippine Islands; Philippine Bureau of Science Collection, Manila.
Distribution: Philippine Islands (Luzon).
References: (**ds**) Kleine 1913b: 138, 1914b: 290; Schedl 1966b: 40. (**tx**) Nobuchi 1983: 301; Strohmeyer 1911b: 23–24.

***obanus* Hagedorn** 1910b: 3. Syntypes (?) ♀; Mentawei, Si-Oban; Comliura specimina in MNB, Berlin.
Distribution: Asia (Assam, Nicobar Islands in India/ Malaya), Indonesia (Batoe Island, Borneo, Java, Mentawei, Sumatra), New Guinea, Philippine Islands.
Hosts: *Artocarpus elastica, A. lakocha, Vatica* sp.
Notes: (3) Eggers 1923a: 153 (redescribed).
References: (**hb**) Kalshoven 1958b: 175. (**ds**) Beaver & Browne 1978: 591; Browne 1961c: 89, 1966: 246, 1980c: 483, 1984b: 287; Hagedorn 1910d: 67; Kleine 1913b: 138, 1914b: 286; Ohno et al. 1988a: 92, 1989: 60; Schedl 1961c: 70, 1964g:

241, 1965g: 23, 1971c: 368, 1971f: 147. (**tx**) Eggers 1923a: 153–154; Hagedorn 1910a: 98, 1910b: 3; Nobuchi 1983: 301; Schedl 1958b: 100, 1958k: 154, 1979c: 174; Strohmeyer 1911b: 24.

cylindricus Eggers 1923a: 156. Lectotype ♀; Sumatra; USNM, Washington, designated by Anderson & Anderson 1971: 11. Synonymy: Schedl 1958k: 154.

References: (**ds**) Beeson 1961: 290; Kleine 1934a: 157; Schedl 1961c: 70, 1971f: 147. (**tx**) Anderson, W. H. & Anderson 1971: 11; Eggers 1923: 156; Schedl 1937e: 543, 1940b: 435, 1942d: 4, 1951i: 41, 1958k: 154, 1961c: 70.

***papuanus* Eggers** 1923a: 157. Lectotype ♀; Paumomufluss in Sudost-New Guinea; USNM, Washington, designated by Anderson & Anderson 1971: 23.

Distribution: New Guinea.

References: (**ds**) Eggers 1926a; Schedl 1936g: 526. (**tx**) Anderson, W. H. & Anderson 1971: 23; Eggers 1923a: 157, 1926a: 300, 1927b: 390; Schedl 1936g: 526, 1940b: 435, 1955b: 280, 1979c: 184.

***parinarii* Hopkins** 1915b: 48. Holotype ♀; Calapan, Philippine Islands; USNM, Washington.

Distribution: Philippine Islands.

Hosts: *Parinarium* sp.

References: (**ds**) Kleine 1934a: 157; Schedl 1966b: 41. (**tx**) Hopkins 1915b: 48; Nobuchi 1983: 301.

***perfacilis* Eggers** 1939b: 8. Holotype ♀; Tenasserim (Malvedaung, 30 km sudlich Ye); NHR, Stockholm.

Distribution: Asia (Burma).

References: (**tx**) Eggers 1939b: 8.

***regius* Hagedorn** 1908: 382. Syntypes 2 ♀; Sumatra; Hamburg Museum, lost.

Distribution: Asia (Malaya/ Thailand), Indonesia (Batoe, Borneo, Celebes, Mentawei, Sumatra).

Hosts: *Artocarpus elastica, Palaquium gutta.*

References: (**ds**) Beaver & Browne 1975: 292; Browne 1961c: 88–89, 1980d: 491; Hagedorn 1910d: 67; Kleine 1913b: 138, 1914b: 286; Schedl 1961c: 69, 1965g: 23. (**tx**) Eggers 1923a: 152–153, 1927b: 390; Hagedorn 1908: 382, 1910a: 98, 1910b; Hopkins 1914: 126; Schedl 1961c: 69, 1965g: 23; Strohmeyer 1911b: 24.

***rugatus* (Blandford)** 1896b: 204 (*Dryocoetes*). Holotype ♀; Borneo, Sarawak; BMNH, London.

Distribution: Indonesia (Sarawak in Borneo).

Hosts: *Koompassia malaccensis.*

Notes: (1) Hagedorn 1910a: 69 (to *Ozopemon*).

References: (**cn**) Mathur & Singh 1960b: 84. (**hb**) Browne 1938a. (**ds**) Beeson 1961: 290; Browne 1938a; Hagedorn 1910d: 69; Kleine 1913b: 138, 1914b: 289; Mathur & Singh 1960b: 84. (**tx**) Blandford 1896b: 204; Hagedorn 1910a: 98, 1910b; Strohmeyer 1911b: 24.

***similis* Eggers** 1927c: 87. Lectotype ♀; Borneo, Sandakan; USNM, Washington, designated by Anderson & Anderson 1971: 30.

Distribution: Indonesia (Borneo, Mentawei, Sabah).

Hosts: *Shorea* sp.

Notes: (1) Schedl 1979c: 229 (Designated an invalid lectotype).

References: (**ds**) Browne 1984b: 287; Ohno, Yoneyama, & Narazawa 1987: 93; Schedl 1961c: 70, 1964c: 304, 1964g: 241, 1969a: 206, 1971f: 147. (**tx**) Anderson, W. H. & Anderson 1971: 30; Eggers 1927c: 87; Schedl 1939e: 329, 1954c: 154, 1958h: 498, 1961c: 70, 1964g: 241, 1979c: 229.

***sumatranus* (Blandford)** 1896b: 205 (*Dryocoetes*). Holotype ♀; Sumatra, Singalang Mts.; BMNH, London.

Distribution: Indonesia (Sumatra).

Notes: (1) Hagedorn 1910d: 69 (to *Ozopemon*).

References: (**ds**) Hagedorn 1910d: 69; Kleine 1913b: 138, 1914b: 286; Schedl 1961c: 70. (**tx**) Blandford 1896b: 205; Eggers 1923a: 153; Hagedorn 1910a: 98, 1910b; Schedl 1942d: 4, 1961c: 70; Strohmeyer 1911b: 24.

***theklae* Hagedorn** 1910b: 2. Syntypes ♀; Sumatra, Mount Singalang; MNB, Berlin, 1 in Schedl Collection in NHMW, Wien.

Distribution: Indonesia (Sumatra).

Notes: (1) Schedl 1979c: 252 (citation of holotype invalid). (3) Eggers 1923a: 158 (redescribed the species and named an aberration as a var. of *sirambeanus*, no status).

References: (**ds**) Hagedorn 1910d: 67; Kleine 1913b: 138, 1914b: 286; Schedl 1971f: 147. (**tx**) Eggers 1923a: 158–160; Hagedorn 1910a: 98, 1910b: 2; Schedl 1979c: 252; Strohmeyer 1911b: 24.

singalangicus Eggers 1923a: 153. Syntypes ♀; Sumatra, Mounts Singalang; MNB, Berlin, 1 in Schedl Collection in NHMW, Wien. Synonymy: Schedl 1979c: 252.

Notes: (3) Eggers 1923a: 153 (possible var. of *sumatranus*).

References: (**ds**) Kleine 1914b: 286. (**tx**) Eggers 1923a: 153; Schedl 1971f: 147, 1979c: 252

***tuberculatus* Strohmeyer** 1912d: 38. Syntypes 2 ♀; Formosa; Strohmeyer Collection.

Distribution: Asia (Malaya/ Taiwan).

References: (**ds**) Kleine 1913b: 138, 1914b: 281; Miwa 1931: 269; Nobuchi 1967: 20. (**tx**) Strohmeyer 1912d: 38.

***uniseriatus* Eggers** 1923a: 158. Syntypes 3 ♀; Moroka, Sudost-Neu Guinea; 1 syntype in MCG, Genova, 1 in MNB, Berlin, 1 in Eggers Collection, in NHMW, Wien.

Distribution: New Guinea.

References: (**tx**) Eggers 1923a: 158–159, 1927b: 390; Schedl 1979c: 261.

Genus *Coccotrypes* Eichhoff

COCCOTRYPES EICHHOFF 1878b: 308. Type-species: *Bostrichus dactyliperda* Fabricius, subsequent designation by Hopkins 1914: 118.

Poecilips Schaufuss 1897: 110. Type-species: *Poecilips sannio* Schaufuss, monobasic. Synonymy: Wood 1973c: 171.

References: (**hb**) Browne 1961: 91–92; Ghesquiere 1933a: 26, 1933b: 775; Schedl 1958d: 114, 189. (**ds**) Blackwelder 1947: 778; Brimblecombe 1953: 23; Hagedorn 1910d: 77; Kalshoven 1960: 176, 1968: 176. (**tx**) Arnett 1960: 1044, 1968: 1044; Beeson 1938b: 290, 1939: 279–280, 285–300, 302–307, 1941: 364, 369, 389; Browne 1938a: 24, 1959b: 293–294, 1966: 233–257, 1973b: 679–696; Chamberlin 1939: 317–320; Eggers 1923: 129, 1927a: 185, 1927b: 390, 1940b: 99–108; Hagedorn 1908: 375, 1909: 744, 1910a: 110–112; Hopkins 1914: 135, 1915c: 226; Lepesme 1947: 643; Murayama 1954: 200, 1957: 589–592; Roepke 1919: 23–24; Schaufuss 1897: 110; Schedl 1934f: 1634, 1938d: 456, 1938e: 9–10, 1952k: 160, 1957d: 1–162, 1959a: 488, 1960b: 163, 1960f: 12, 24, 1961j: 349, 1961k: 715, 1962m: 63, 1962n: 697–699, 1962p: 205, 1968e: 261–270, 1977b: 95; Wood, S. L. 1960a: 14, 47, 1961a: 46, 1973c: 171.

Cryphaloides Formanek 1908: 91. Type-species: *Cryphaloides donisthorpei* Formanek = *Bostrichus carpophagus* Hornung, monobasic. Synonymy: Schedl 1962r: 95.

References: (**tx**) Balachowsky 1949a: 200; Formanek 1908: 91; Hopkins 1915b: 8; Nunberg 1956: 141; Reitter 1913a: 65; Schedl 1962r: 95.

Thamnurgides Hopkins 1915b: 45. Type-species: *Thamnurgides persicae* Hopkins =*Coccotrypes advena* Blandford, original designation. Synonymy: Schedl 1938e: 9.

References: (**ay**) Nobuchi 1969a: 62. (**ds**) Schedl 1966b: 33. (**tx**) Beeson 1938b: 290, 1939: 279–308; Eggers 1923a: 129–220, 1927b: 390; Hopkins 1915b: 45; Kalshoven 1935: 146–154; Schedl 1938e: 10, 1961k: 715; Wood, S. L. 1960a: 47.

Spermatoplex Hopkins 1915b: 48. Type-species: *Spermatoplex rhizophorae* Hopkins, original designation. Synonymy: Schedl 1952k: 160.

References: (**tx**) Barber 1919: 53–60; Hopkins 1915b: 9, 48; Schedl 1952k: 160, 1961k: 715.

Dendrurgus Eggers 1923a: 144. Type-species: *Dendrurgus rhizophorae* Eggers, subsequent designation by Wood 1982b: 731. Synonymy: Eggers 1927b: 390.

References: (**tx**) Eggers 1923a: 144, 1927b: 390; 1938e: 9; Schedl 1961k: 715; Wood, S. L. 1960a: 47.

Keys: Wood 1982b: 732 for North and Central America.

Notes: (3) Hagedorn 1913: 254 (*Hyphaene guineensis*, nomen nudum, no status, synonymy). Schedl 1953c: 290, Browne 1961c: 93 (*Poecilips granulicauda* Schedl, nomen nudum, from Malaya, Hunan in China, no status).

References: (**cn**) Green 1916: 608–636; Lever 1943: 14–18; Light 1928: 25–34; Swaine 1908: 82, 90. (**hb**) Browne 1938a: 24, 1961c: 89–91; Ghesquiere 1933a: 29, 1933b: 775, 778; Schedl 1958d: 184; Wood, S. L. 1986a: 75. (**ds**) Brimblecombe 1953: 14; Hagedorn 1910d: 68; Lepesme 1947: 633–642; Reitter 1906: 713; Schedl 1934f: 1643; Scheerpeltz & Winkler 1930: 257; Schilsky 1888: 122; Seidlitz 1891a: 567, 1891b: 631; Westhoff 1881: 240; Wichmann 1954: 515; Wood, S. L. 1986a: 75. (**tx**) Arnett 1960: 1044, 1968: 1044; Balachowsky 1949a: 177; Beeson 1938b: 287, 1939: 279–285, 301–302, 1941: 363–364, 371, 894–895, 924; Blandford 1894b: 261, 1894d: 98, 1898b: 189, 192; Bright 1972: 66; Chamberlin 1939: 317–319, 1958: 12; Eggers 1927e: 40–41, 1940a: 123–141, 1940b: 99–108; Eichhoff 1878b: 36, 57–58, 308, 1881a: 52, 74, 267, 1883: 108, 115; Enderlein 1929: 147; Fonseca 1930: 87; Gardner 1934: 4, 14; Hagedorn 1910a: 88, 93–94, 1913a: 3, 1913b: 253; Hopkins 1914: 118, 133, 1915b: 9, 45–46, 1915c: 195, 226; LeConte & Horn 1883: 518; Lengerken 1939: 64; Lovendal 1889: 25–26, 72; Murayama 1957: 589–590, 609–614; Nusslin 1911: 111, 145; Pfeffer 1989a: 58; Reitter 1894: 68, 89, 1913a: 75, 78–79; Sampson 1914: 389; Schedl 1938e: 1, 9–10, 1943d: 68, 1948i: 113–120, 1959a: 469–534, 1960f: 10–12, 1961k: 681, 1962k: 595–1352, 1962p: 205, 1962r: 95, 1977b: 80; Stebbing 1914: 545; Strohmeyer 1911: 21; Wood, S. L. 1961a: 46, 1973c: 171, 1986a: 75; Yin, Huang, & Li 1984: 151.

***abruptulus* (Schedl)** 1975i: 347 (*Poecilips*). Holotype ♀; New Guinea, N.E., Kiunga; NHMB, Budapest.

Distribution: New Guinea.

References: (**tx**) Schedl 1975i: 347.

***abruptus* (Schedl)** 1979g: 99 (*Poecilips*). Holotype ♀; Papua New Guinea: S. E., Kiunga; Schedl Collection in NHMW, Wien.

Distribution: New Guinea.

References: (**tx**) Schedl 1979g: 99.

***aciculatus* Schedl** 1952d: 360. Holotype ♀; Hamburgfarm on Rio Reventazon, Limon, Costa Rica; Schedl Collection in NHMW, Wien.

Distribution: New Guinea, North America (Costa Rica/ Panama), South America (Brazil).

References: (**ds**) Murayama 1957c: 611; Nunberg 1972b: 190; Schedl 1960a: 76; Wood, S. L. 1977a: 69, 1982b: 736. (**tx**) Murayama 1957c: 611; Schedl 1950i: 148, 1952d: 360, 1955b: 280, 1960a: 76, 1979c: 10; Wood, S. L. 1982b: 736.

***advena* Blandford** 1894d: 100. Holotype ♀; Nagasaki, Japan; BMNH, London.
Figures: Browne 1973b: 690.
Distribution: Antilles Islands (Cuba), Asia (Assam, Bengal, Karnataka, Uttar Pradesh in India/ Japan/ Malaya/ Sri Lanka/ Vietnam), Australia (Queensland), Fiji, Indonesia (Borneo, Java, Sumatra), Hawaii, Micronesia, New Guinea, Niue Island, North America (S Florida in USA), Philippine Islands, Samoan Islands, South America (Suriname).
Hosts: *Albizzia* sp., *Artocarpus lanceifolius, A. rigidus, A. scortechini, Campnosperma auriculata, Dillenia retusa, Diospyros* sp., *Eugenia formosana, E. similis* seeds, *Ficus bracteata, F. xylophylla, Macaranga gigantea, Nephelium lichi, Pterocarpus indicus, Theobroma cacao, Vateria indica.*
Notes: (1) Schedl 1979c: 125 (*Poecilips nigricollis* Eggers, nomen nudum, *P. pernitidus* Eggers, nomen nudum, no status, synonymy).
References: (**cn**) Souphieff & Scherbinovskaja 1937: 88. (**ec**) Beaver 1979b: 298. (**hb**) Beaver 1979b: 298; Beaver & Browne 1978: 593; Wood, S. L. 1982b: 733. (**ds**) Beaver 1976b: 537; Beaver & Browne 1978: 593; Blandford 1894c; Bright 1985c: 172; Browne 1973b: 689, 1974a: 64, 1980a: 372, 1980c: 485, 1980d: 492; Hagedorn 1910d: 68; Kleine 1913b: 137, 1914b: 258; Murayama 1954b: 202, 1957c: 588, 626; Nonveiller 1984: 41; Ohno, Yoneyama, & Nakazawa 1987: 93; Schedl 1959a: 490, 1971a: 276, 1972b: 266, 1972e: 281, 1973c: 377, 1975e: 447, 1975h: 352, 1975i: 346, 1975j: 293, 1978c: 293, 1979b: 415, 1979f: 103; Souphieff & Scherbinovskaja 1937: 88; Wood, S. L. 1977a: 69, 1982b: 733. (**tx**) Blandford 1894d: 100; Bright 1985c: 172; Browne 1970: 566, 1973b: 684, 690; Eggers 1929b: 112; Hagedorn 1910a: 94; Murayama 1954b: 202, 1957c: 588, 626; Nobuchi 1983: 301; Schedl 1934f: 1643, 1938e: 10, 1942d: 3, 1948i: 113, 1955b: 292, 1959a: 490, 1963h: 267; Wood, S. L. 1973c: 174, 1982b: 733.

persicae Hopkins 1915b: 45 (*Thamnurgides*). Holotype ♀; Honolulu, Hawaii; USNM, Washington. Synonymy: Wood 1973c: 174.
References: (**cn**) Mumford 1961: 31. (**hb**) Kalshoven 1963; Roepke 1919b: 23. (**ds**) Beeson 1938b: 290; Kalshoven 1963; Kleine 1934a: 164; Mumford 1961: 31; Murayama 1957c: 630–631; Nobuchi & Ono 1973: 181; Swezey 1941: 120, 1954: 162. (**tx**) Beeson 1929: 228, 1938b: 290; Hopkins 1915b: 45; Murayama 1957c: 630–631; Roepke 1919b: 23; Schedl 1936g: 526, 1938e: 10, 1941f: 112, 1954a: 147, 1961k: 729, 1964m: 217; Wood, S. L. 1960a: 47, 49, 1973c: 174.

philippinensis Eggers 1923a: 145 (*Dendrurgus*). Lectotype ♀; Mt. Makiling, Insel Luzon, Philippinen; USNM, Washington, designated by Anderson & Anderson 1971: 24. Synonymy: Wood 1989: 170.
References: (**cn**) Souphieff & Scherbinovskaya 1937: 89; Wylie & Shanahan 1975. (**hb**) Wylie & Shanahan 1975. (**ds**) Brimblecombe 1953: 26; Murayama 1957c: 630; Nunberg 1964a: 235; Schedl 1936g: 526, 1966b: 37; Souphieff & Scherbinovskaya 1937: 89. (**tx**) Anderson, W. H. & Anderson 1971: 24; Beeson 1929: 229; Eggers 1923a: 145, 148, 1927b: 390, 397–398, 1934a: 79; Murayama 1957c: 630; Nobuchi 1983: 301; Schedl 1933e: 104, 1938e: 10, 1940b: 434, 1962n: 698, 1979c: 192; Wood, S. L. 1966b: 28, 1989: 170.

ternatensis Eggers 1923a: 146 (*Dendrurgus*). Syntypes ♀; Insel Ternate; MCG, Genova, and in Eggers Collection, in NHMW, Wien. Synonymy: Wood 1989: 170.
Notes: (1) Schedl 1979c: 252 (citation of holotype invalid).
References: (**ec**) Beaver 1979b: 298. (**hb**) Beaver 1979b: 298. (**ds**) Beaver & Browne 1978: 598; Murayama 1957c: 630–631. (**tx**) Beeson 1929: 230, 1939: 237; Eggers 1923a: 145–146, 1927b: 406, 1927c: 80; Murayama 1957c: 630–631; Schedl 1979c: 252; Wood, S. L. 1989: 170.

minor Eggers 1923a: 150 (*Dendrurgus*). Lectotype ♀; Buitenzorg auf Java, Botanischer Garten; USNM, Washington, designated by Anderson & Anderson 1971: 21. Synonymy: Wood 1989: 170.
References: (**ds**) Murayama 1957c: 630; Schedl 1967c: 73. (**tx**) Anderson, W. H. & Anderson 1971: 20; Beeson 1939: 228; Eggers 1923a: 150; Murayama 1957c: 630; Schedl 1938e: 10, 1955b: 292, 1979c: 154; Wood, S. L. 1989: 170.

setosus Beeson 1929: 228 (*Thamnurgides*). Holotype ♀; Samoa: Tutuila, Fagasa; BMNH, London. Synonymy: Schedl 1961k: 728.
References: (**ds**) Beeson 1938b: 291; Murayama 1957c: 630. (**tx**) Beeson 1929: 228, 1938b: 291, 1939: 285, 298; Murayama 1957c: 630; Schedl 1951k: 135, 1961k: 728, 1963h: 267.

tutuilensis Beeson 1929: 229 (*Thamnurgides*). Holotype ♀; Samoa: Tutuila, Fagasa; BMNH, London. Synonymy: Wood 1989: 170.
Notes:
References: (**ds**) Beaver 1987b: 9; Beaver & Maddison 1990: 371; Beeson 1938b: 291; Browne 1973: 684; Murayama 1957c: 631. (**tx**) Beeson 1929: 229–230, 1938b: 291; Murayama 1957c: 631; Schedl 1951k: 135; Wood, S. L. 1989: 170.

philippinensis Schedl 1933e: 104. Holotype ♀; Mount Maquiling, Laguna, Luzon; not given. Synonymy: Schedl 1966c: 37.
References: (**tx**) Nunberg 1964: 235; Schedl 1933e: 104–105, 1966c: 37.

cubanus Eggers 1934a: 79 (*Thamnurgides*). Holotype ♀; Cuyajabas, Sierra Rosario, Cuba; USNM, Washington. Synonymy: Wood 1960a: 48.
References: (**ds**) Blackwelder 1947: 778. (**tx**)

Anderson, W. H. & Anderson 1971: 10; Eggers 1934a: 79; Schedl 1961k: 728, 1963f: 55, 1979c: 71; Wood, S. L. 1960a: 49.

nuciferus Schedl 1938e: 10 (*Poecilips*). Lectotype ♀; Paramaribo, Surinam; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 172. Synonymy: Schedl 1961k: 738.
References: (**cn**) Dinther 1961. (**ds**) Blackwelder 1947: 778; Diakonoff 1938: 12–14. (**tx**) Schedl 1938e: 10–12, 1961k: 728, 1979c: 172.

vicarius Beeson 1939: 285 (*Thamnurgides*). Holotype ♀; Samsing, Kalimpong, Bengal, India; FRI, Dehra Dun. Synonymy: Schedl 1961k: 728.
References: (**cn**) Mathur, Singh, & Lal 1958: 45; Mathur et al. 1958: 104. (**ds**) Beeson 1961: 301; Mathur, Singh, & Lal 1958: 45; Mathur et al. 1958: 104; Murayama 1957c: 630. (**tx**) Beeson 1939: 285, 307; Murayama 1957c: 630; Schedl 1961k: 728, 1963h: 267.

niger Schedl 1939e: 345 (*Poecilips*). Syntypes ♀; Malaya, Selangor: Kuala Lumpur, Kepong, Sungei Buloh For. Res., Perak: Trolak For. Res.; BMNH, London and Schedl Collection in NHMW, Wien, preoccupied by Eggers 1927. Synonymy: Wood 1960a: 48.
References: (**cn**) Yunus & Hua 1980: 229. (**ds**) Yunus & Hua 1980: 229. (**tx**) Browne 1949b: 897, 1970: 566; Schedl 1939e: 345–346, 1942a: 170, 1953c: 289; Wood, S. L. 1960a: 48.

subnitidus Schedl 1954a: 147 (*Poecilips*). Holotype ♀; Java, Buitenzorg, 250 m; Schedl Collection in NHMW, Wien. Synonymy: Schedl 1961k: 728.
References: (**tx**) Schedl 1954a: 139, 147, 1961k: 730, 1963h: 267, 1979c: 243.

***alternatus* (Eggers)** 1927b: 398 (*Thamnurgides*). Holotype ♀; Sumatra; USNM, Washington.
Distribution: Indonesia (Sumatra).
References: (**tx**) Anderson, W. H. & Anderson 1971: 3; Eggers 1927b: 398.

***asper* (Schedl)** 1961j: 351 (*Poecilips*). Holotype ♀; Ghana, nr. Kumasi, Bobiri Forest Reserve; BMNH, London.
Distribution: Africa (Sao Thome Island/ Ghana).
References: (**ds**) Browne 1970: 541, 1973b: 690. (**tx**) Browne 1973b: 690; Schedl 1961j: 351, 1961k: 717, 1979c: 28.

***aspericollis* (Beeson)** 1939: 295 (*Thamnurgides*). Holotype ♀; Assam: Naga Hills, 3000 feet; FRI, Dehra Dun.
Distribution: Asia (Tonkin Island in Vietnam/ Assam in India).
References: (**tx**) Beeson 1939: 295.

***babai* (Murayama)** 1961: 29 (*Thamnurgus*). Holotype ♀; Mt. Kinpoku, Sado Isl., Japan; USNM, Washington.
Distribution: Asia (Japan).
References: (**tx**) Murayama 1961: 29; Schedl 1963j: 480.

***barbatus* (Schedl)** 1934d: 90 (*Thamnurgides*). Lectotype ♀; Java, Mount Gede, 800 m; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 34.
Distribution: Asia (Burma/ Assam in India/ Malaya), Indonesia (Java, Sumatra).
Hosts: *Bambusa tulda, Carapa obovata, Dipterocarpus pilosus, Livistona cochinchinensis, Mitrastemon* sp., *Myristica* sp.
References: (**cn**) Box 1953a. (**hb**) Kalshoven 1958b: 175. (**ds**) Kalshoven 1935a: 14. (**tx**) Schedl 1934d: 90, 1938e: 10, 1979c: 34.

ater Eggers 1936e: 84 (*Thamnurgides*). Holotype ♀; Sumatra (Brastagi); Strohmeyer Collection, Eberswalde. Synonymy: Wood 1989: 170.
References: (**cn**) Mathur, Singh, & Lal 1958: 21; Yunus & Hua 1980: 229. (**hb**) Browne 1938a. (**ds**) Beaver & Browne 1978: 593; Beeson 1961: 299; Browne 1938a; Mathur, Singh, & Lal 1958: 21; Schedl 1936d: 2, 1936j: 19, 1975j: 293; Yunus & Hua 1980: 229. (**tx**) Beeson 1939: 289; Browne 1970: 568; Eggers 1936e: 84, 1939d: 224; Schedl 1934d: 90–91, 1936d: 1, 1936j: 19, 1938e: 10, 1942d: 4, 1953c: 298, 1953e: 26, 1979c: 30.

dipterocarpi Beeson 1939: 288 (*Thamnurgides*). Syntypes ♀; Assam: Lakhimpur division, Dihing reserve; FRI, Dehra Dun. Synonymy: Wood 1989: 170.
References: (**cn**) Mathur, Singh, & Lal 1958: 40; Mathur et al. 1958: 104. (**ds**) Beeson 1961: 300; Kleine 1934a: 157; Mathur, Singh, & Lal 1958: 40; Mathur et al. 1958: 104. (**tx**) Beeson 1939: 288; Eggers 1936e: 86–87; Wood, S. L. 1989: 170.

bambusae Beeson 1939: 289 (*Thamnurgides*). Syntypes ♀; Burma: Pyinmana division, Yanaungmyin reserve; FRI, Dehra Dun. Synonymy: Wood 1989: 170.
References: (**ds**) Beeson 1939: 289, 1961: 299; Bhasin, Roonwal, & Singh 1958. (**tx**) Beeson 1939: 289; Wood, S. L. 1989: 170

***bicolor* Sampson** 1914: 390. Syntypes 2 ♀; Seychelles Isl., Mahe: slopes of Morne Seychellois, 1500–2000 ft.; BMNH, London.
Distribution: Africa (Seychelles Islands).
References: (**ds**) Beaver 1987a: 13; Sampson 1914: 389; Schedl 1969d: 11. (**tx**) Beaver 1987a: 13; Browne 1970: 567; Sampson 1914: 389–390.

***birmanus* Eggers** 1939b: 8. Holotype ♀; Birma (Washaung, 20 km ostlich Myitkyina); NHR, Stockholm.
Distribution: Asia (Burma).
References: (**tx**) Eggers 1939b: 8–9.

***borneensis* (Eggers)** 1923a: 146 (*Dendrurgus*). Holotype ♀; Sarawak (Borneo); MCG, Genova.
Distribution: Indonesia (Sarawak in Borneo).
References: (**tx**) Eggers 1923a: 146.

***brunneus* (Nunberg)** 1961b: 616 (*Poecilips*). Holotype ♀; Malay Peninsula, Kelentan Ulu Lebir; BMNH, London.
Figures: Nunberg 1961b: 628.
Distribution: Asia (Malaya).
Hosts: *Balanocarpus heimii*.
References: (**tx**) Nunberg 1961b: 616, 628, 1973: 23; Schedl 1962n: 698.

***brunnipes* Wood** 1989: 178. Holotype ♀; Congo Belge: P.N.A., Mont Hoyo, grotte Yolohafiri, 1030 m; MRCB, Tervuren, automatic.
Distribution: Africa (Zaire).
References: (**tx**) Wood, S. L. 1989: 178.
brunneus Nunberg 1973: 23. Holotype ♀; Congo Belge: P.N.A., Mont Hoyo, grotto Yolhafiri, 1030 m; MRCB, Tervuren, preoccupied by Nunberg 1961.
References: (**tx**) Nunberg 1973: 23; Wood, S. L. 1989: 178.

***campnospermae* (Browne)** *in* Beaver & Browne 1978: 593 (*Poecilips*). Holotype ♀; Malaysia: Penang, Muka Head; BMNH, London.
Figures: Beaver & Browne 1978: 576.
Distribution: Asia (Malaya).
Hosts: *Campnosperma auriculata*.
References: (**ec**) Beaver 1979b: 298. (**hb**) Beaver 1979b: 298. (**tx**) Beaver & Browne 1978: 576, 593; Browne 1979: 593.

***cardamomi* Schaufuss** 1905: 1. Holotype ♀; Ceylon (de Warendorf); Hamburg Museum, lost.
Distribution: Asia (Burma/ "China"/ Karnataka, Kerala in India/ Japan/ Malaya/ Nepal/ Sri Lanka/ Taiwan/ Vietnam), Indonesia (Borneo, Sumatra).
Hosts: *Canarium strichum, Cullenia excelsa, Elaeocarpus tuberculatus, Ellettaria cardamomum, E. major, Hardwickia pinnata, Pteridium aquilinum, Vateria indica*.
References: (**ay**) Gray, B. 1972b; Herfs 1949. (**cn**) Herfs 1949; Kleine 1932a: 302; Mathur & Singh 1960a: 39, 1960b: 36; Mathur, Singh, & Lal 1958: 20; Mathur et al. 1958: 104; Nobuchi 1981a; Souphieff & Scherbinovskaja 1937: 88. (**hb**) Beaver 1987a: 13; Gray, B. 1972b; Herfs 1949; Kleine 1932a: 302. (**ds**) Beaver 1987a: 13; Beaver & Browne 1978: 594; Beeson 1939: 291, 302, 1961: 299; Bhasin, Roonwal, & Singh 1958; Browne 1961c: 92, 1983b: 76; Hagedorn 1910d: 68; Kalshoven 1935a: 14; Kleine 1913b: 137, 1914b: 273, 1932a: 302, 1934a: 156; Mathur & Singh 1960a: 39, 1960b: 36; Mathur, Singh, & Lal 1958: 20; Mathur et al. 1958: 104; Schedl 1959a: 485, 1960e: 171, 1972j: 233, 1973b: 210, 1973c: 377; Souphieff & Scherbinovskaja 1937: 88. (**tx**) Beeson 1939: 291, 302; Eggers 1923a: 146, 1927b: 406, 1936d: 626; Gray, B. 1972b; Hagedorn 1910a: 94, 1910e, 1913a: 46; Lepesme 1944: 238; Schaufuss 1905: 1; Schedl 1959a: 485, 488.

***carinensis* (Eggers)** 1923a: 147 (*Dendrurgus*). Holotype ♀; Carin Cheba (900–1100 m); MCG, Genova.
Distribution: Asia (Burma?).
References: (**tx**) Eggers 1923a: 147–148, 1925: 153.

***carpophagus* (Hornung)** 1842: 116 (*Bostrichus*). Syntypes ♀; Ostindien in Furchten von Betelnussen; MNB, Berlin.
Distribution: Africa (Angola/ Azores Islands/ Cameroon/ Canary Islands/ Chad/ Ethiopia/ Guinea/ Ivory Coast/ Liberia/ Nigeria/ Sengal/ Seyechelles Islands/ Sierra Leone/ South Africa/ Sudan/ Tanzania/ Uganda/ Zaire), Antilles Islands (Bermuda/ Cuba/ Grenada/ Guadeloupe/ Jamaica/ Monserrat/ Puerto Rico/ Santo Domingo/ Trinidad/ Virgin Islands), Asia (Burma/ Cambodia/ Bengal, Karnataka, Nicobar Islands, Tamil Nadu, Uttar Pradesh in India/ Japan/ Korea/ Sri Lanka/ Taiwan/ Thailand/ Vietnam), Australia (Queensland), Europe (England/ France), Hawaii, Indonesia (Borneo, Java, Sumatra), Madagascar, Micronesia (Guam), North America (El Salvador/ Guatemala/ Honduras/ Veracruz in Mexico/ District of Columbia, Florida, New Jersey in USA)/ Philippine Islands, Reunion Island, Samoa, South America (Brazil/ Cayenne/ Colombia/ Guyana/ Peru/ Suriname). Commonly intercepted in seeds and nuts in temperate countries where it cannot breed.
Hosts: *Anona squamosa, Archantophoenix alexandrae, Areca catechu, Borassus flabellifer, Cassia grandis, Chamaedorea elegans, Chrysalidocarpus* sp., *Coccothrinix argentea, Diospyros* spp., *Elaeis guineensis, Erythrina cyiestagalli, Eugenia cumini, Euterpe globosa, Hyphaena guineensis, Livingstonia* spp., *Manikara kauki, Neowashingtonia robusta, Phoenix dactylifera, Polyalthia simiarum, Prichardia thurstoni, Rollinia octopetala, Sabal mauretiaeformis, S. palmetto, Shorea robusta, Theobroma cacao, Thrinax argentia, Washingtonia filifera*.
Notes: (3) Schedl 1960b: 163 (*sublongus* Eggers, nomen nudum, synonymy), 1961: 684, 686 (*subseriatus* Eggers, nomen nudum, *brevis* Eggers, nomen nudum, no status, synonyms).
References: (**bv**) Perfecto 1988; Schedl 1960f: 12. (**cn**) Anonymous 1966s; Daniel & Kumar 1978; Esser 1966: 4; Mathur & Singh 1960b: 59; Mathur, Singh, & Lal 1958: 10; Mathur et al. 1958: 95; Mumford 1962: 21; Perfecto 1988; Souphieff & Scherbinovskaja 1937: 88. (**ec**) Janzen 1972. (**hb**) Beaver 1987a: 13; Beaver & Browne 1978: 583, 1975: 287; Beeson 1922: 494; Browne 1961c: 89–90; Ghesquiere 1933a: 27, 1933b: 776; Kalshoven 1958b: 179, 1963; Oommen & Nair 1969: 314–315; Peck, Kukalova-Peck, & Borden 1989; Wood, S. L. 1982b: 738. (**ds**) Alluaud 1900: 438–442; Anonymous 1966s; Atkinson & Equihua 1985b:

236; Beaver 1976b: 537, 1987a: 13; Beaver & Browne 1975: 287, 1978: 583; Beeson 1938: 287, 1941: 371, 1961: 286; Bhasin, Roonwal, & Singh 1958: 34; Blackwelder 1947: 778; Blatchley & Leng 1916: 608–609; Borges & Serrano 1989; Bright 1985c: 172, 1987a: 3; Brimblecombe 1953: 14; Browne 1961c: 89; Chamberlin 1939: 317–318; Chilson 1958: 335; Choo 1983: 84; Choo & Woo 1985: 165; Choo, Woo & Park 1983: 174; Costa Lima 1925: 159, 1936: 358, 1956: 290; Dinther 1960: 111; Ferreira 1965: 1116; Fonseca 1930: 87; Gemminger & Harold 1872: 2687; Golding 1947: 79; Hagedorn 1910d: 68; Hargreaves 1937: 509, 520; Hilburn & Gorden 1989: 689; Israelson 1984; Kalshoven 1958: 178, 1963: 234; Kleine 1928: 302, 1934a: 156–157; Lepesme et al. 1948: 635; Luigioni 1929: 998; Mathew 1987: 188; Mathur & Singh 1960b: 59; Mathur, Singh, & Lal 1958: 10; Mathur et al. 1958: 95; Matthew 1982; Mumford 1962: 21; Nieuwenhuizen 1953: 346–347; Nonveiller 1984: 40; Nunberg 1972b: 190; Schedl 1959a: 485, 1959p: 17, 1960f: 12, 1961c: 71, 1961k: 685, 1962b: 186, 1964e: 68, 1965a: 339, 1966b: 33, 1966f: 78, 1969d: 7, 1970e: 82, 1972j: 224, 1973c: 378, 1973d: 154, 1975e: 447, 1975h: 350, 1975i: 346, 1975j: 294, 1976a: 51, 1977a: 80, 1977d: 278, 1977e: 42, 1978c: 294, 1982: 287; Souphieff & Scherbinovskaja 1937: 88; Sturm 1843: 230; Swezey 1928: 186–187, 1941: 120–121, 1954: 502, 516; Tucker 1952: 347; Van Zwaluwenburg 1956: 9; Wichmann, Heinrich E. 1927: 80; Wichmann, H. E.1927b: 379, 1954: 502, 516, 1955a: 98; Wood, S. L. 1960a: 46, 1977a: 69, 1982b: 738; Zacher 1927: 162. (**tx**) Beeson 1939: 282; Blandford 1894d: 99, 1898a: 424, 1898b: 193; Bright 1985c: 172; Browne 1972b: 21; Choo 1983: 84; Eggers 1912b: 117, 1920: 33, 1922a: 87, 1924: 104, 1925: 159, 1927a: 180, 1927b: 399, 1929b: 112, 1929e: 52, 1933b: 2, 8, 1940b: 103; Eichhoff 1878b: 58, 310–311; Emden 1924: 187; Ferrari 1867a: 32; Hagedorn 1904g: 546, 1910a: 94, 1910e: 3, 1913a: 4, 26–27, 1913b: 254; Hopkins 1915b: 45–47; Hornung 1842: 116–117; Murayama 1957c: 611–613; Nobuchi 1967: 13, 20, 1983: 301; Nunberg 1958a: 480; Reitter 1913a: 79; Sampson 1914: 389, 1921: 28; Schaufuss 1905: 8; Schedl 1938e: 10, 1939e: 329, 1941d: 380, 1942b: 147–148, 1942c: 163, 1942d: 3, 1948i: 114, 1950i: 145–146, 1951b: 376, 1951k: 144, 1954a: 139, 1957c: 325, 1959a: 485–486, 1959p: 17, 1960b: 163, 1960f: 12, 22, 51, 1960h: 105–106, 1961c: 71, 1961k: 685–690, 1962b: 194, 1962h: 58, 1962r: 95, 1964e: 68, 1964k: 216, 1965a: 339, 1966f: 78, 84, 1967a: 124, 1969d: 5, 1970e: 81–82, 1977b: 79–80; Schmidt 1939: 84; Stebbing 1914: 543; Strohmeyer 1911: 17; Wolcott 1948: 384; Wood, S. L. 1960a: 46–47, 1975b: 392, 1982b: 738.

pygmaeus Eichhoff 1878b: 310. Syntypes ♀; Madagascar; Schedl Collection (Schedl 1961: 686) in NHMW, Wien. Synonymy: Schedl 1959a: 486.

References: (**ay**) Herfs 1949: 27. (**cn**) Costa Lima 1956; Ghesquiere 1933a; Grandi 1951; Gregory 1954; Hagedorn 1904g, 1913a; Hargreaves 1922: 64; Herfs 1949: 27, 1958: 421; Souphieff & Scherbinovskaja 1937: 89; Wichmann 1927b: 379. (**ec**) Rossem 1979; Wichmann, H. E. 1955a: 98. (**hb**) Chamberlin 1939: 318; Costa Lima 1956; Grandi 1951; Hagedorn 1913a; Herfs 1949: 27; Kalshoven 1958b: 179; Wichmann, H. E. 1927b: 379. (**ds**) Alluaud 1900: 441; Beeson 1938b: 287; Blackwelder 1947: 778; Blatchley & Leng 1916: 609; Chamberlin 1939: 318; Costa Lima 1956; Fairmaire 1892b; Ghesquiere 1933a; Hagedorn 1903b: 546, 1910d: 68, 1913a; Hargreaves 1921: 57–64, 1927: 113–128, 1937: 509, 520; Horion 1951; Kalshoven 1958: 179; Kleine 1913b: 138, 1914b: 288, 290, 307, 310, 326, 338, 379, 1932: 28, 1934a: 157; Light 1928: 25–34; Mumford 1961: 19; Murayama 1957c: 611; Nobuchi 1967: 20; Nunberg 1958a: 480, 1960b: 161, 1965b: 17; Sampson 1914: 389, 1921: 28; Schedl 1962b: 184, 1980a: 19; Swezey 1928: 186, 1929: 271–273, 1936: 202, 1941: 120, 1951: 210, 1954: 173; Wichmann, Heinrich E. 1927: 80; Wichmann, H. E. 1955a: 98. (**tx**) Blatchley & Leng 1916: 609; Chamberlin 1939: 318; Costa Lima 1956; Eggers 1912b: 117, 1920, 1924: 104–105, 1927a: 180–181, 1927b, 1933b: 2, 8, 1940b: 103; Eichhoff 1878a: 391, 1878b: 310; Fairmaire 1892b; Hagedorn 1903b: 546, 1910a: 94, 1910e, 1913b: 254; Hopkins 1915b: 45; Murayama 1957c: 611; Nunberg 1958a: 480, 1960b: 161; Reitter 1913a: 79; Sampson 1914: 389, 1921: 28; Schaufuss 1905: 1; Schedl 1940b: 435, 1948i: 114, 1950i: 144–145, 1959a: 456, 1961k: 686, 1980a: 19; Strohmeyer 1911b: 17.

integer Eichhoff 1878b: 331. Syntypes ♀; Siam; 1 in USNM, Washington, others lost with Hamburg Museum. Synonymy: Eggers 1929e: 52.

References: (**ay**) Herfs 1949: 36. (**cn**) Herfs 1949: 36; Kleine 1932a: 302; Mathur & Singh 1961a: 45; Mathur, Singh, & Lal 1958: 39; Mathur et al. 1958: 95; Stebbing 1914: 543. (**ec**) Beeson 1922c: 494; Stebbing 1914: 543. (**hb**) Beeson 1922c: 494; Herfs 1949: 36; Kleine 1932a: 302; Stebbing 1914: 543. (**ds**) Beeson 1922c: 494; Blandford 1898a; Hagedorn 1910d: 68; Kalshoven 1958: 178; Kleine 1913b: 137, 1914b: 273, 280, 1932a: 302; Mathur & Singh 1961a: 45; Mathur, Singh, & Lal 1958: 39; Mathur et al. 1958: 95. (**tx**) Eggers 1922a: 87, 1925: 159, 1929b: 112, 1929e: 52; Eichhoff 1878a: 391, 1878b: 311; Hagedorn 1910a, 1910e, 1913a: 46; Hopkins 1915b: 46; Schedl 1938e: 10, 1948i: 114, 1961k: 686; Stebbing 1914: 543; Wood, S. L. 1960a: 46.

donisthorpei Formanek 1908: 91 (*Cryphaloides*).

Syntypes ♀; Kew Gardens, London, England; BMNH, London. Synonymy: Schedl 1962r: 95.

References: (**ds**) Hagedorn 1910d: 42. (**tx**) Formanek 1908: 91; Hagedorn 1910a: 86; Hopkins 1914: 118; Reitter 1913a: 65–70; Schedl 1962r: 95.

bakeri Hopkins 1915b: 46. Holotype ♀; Havana, Cuba; USNM, Wshington. Synonymy: Schedl 1964g: 216.

References: (**ds**) Blackwelder 1947: 778; Fonseca 1930: 87; Leng & Mutchler 1917: 220; Murayama 1957c: 611; Schedl 1961k: 684, 1962h: 58, 1962k: 1077, 1969d: 5; Wichmann 1954: 515. (**tx**) Hopkins 1915b: 45–46; Murayama 1957c: 611; Schedl 1950i: 145–146, 1957c: 325, 1961k: 684, 1962k: 1077, 1964g: 216.

anonae Hopkins 1915b: 46. Holotype ♀; Cuba; USNM, Washington. Synonymy: Schedl 1950i: 145.

References: (**cn**) Souphieff & Scherbinovskaja 1937: 88. (**ds**) Blackwelder 1947:778; Kleine 1934a: 156; Leng & Mutchler 1917: 220; Souphieff & Scherbinovskaja 1937: 88. (**tx**) Hopkins 1915b: 45–46; Schedl 1948i: 113, 1950i: 145, 1957c: 325, 1959a: 486, 1961k: 686.

hubbardi Hopkins 1915b: 46. Holotype ♀; Monserrat, West Indies; USNM, Washington. Synonymy: Schedl 1950i: 146.

References: (**ds**) Blackwelder 1947:778; Leng & Mutchler 1917: 220. (**tx**) Hopkins 1915b: 45–46; Schedl 1950i: 145–146, 1961k: 684.

thrinacis Hopkins 1915b: 46. Holotype ♀; Isle of Pines, Cuba; USNM, Washington. Synonymy: Schedl 1964k: 216.

References: (**cn**) Souphieff & Scherbinovskaja 1937: 89. (**ds**) Blackwelder 1947:778; Kleine 1934a: 157; Leng & Mutchler 1917: 220; Lepesme et al. 1948: 638; Murayama 1957c: 611; Souphieff & Scherbinovskaja 1937: 89; Tucker 1952: 347. (**tx**) Hopkins 1915b: 45–46; Murayama 1957c: 611; Schedl 1938e: 10, 1948i: 114, 1960b: 163, 1964k: 216.

liberiensis Hopkins 1915b: 47. Holotype ♀; Mount Coffee, Liberia; USNM, Washington. Synonymy: Wood 1975b: 392.

References: (**ds**) Murayama 1957: 613; Schedl 1961k: 710, 1971g: 190. (**tx**) Hopkins 1915b: 46–47; Schedl 1953q: 241–242, 1961k: 710; Wood, S. L. 1975b: 392.

rolliniae Hopkins 1915b: 47. Holotype ♀; Para, Brazil; USNM, Washington. Synonymy: Schedl 1950i: 145.

References: (**cn**) Costa Lima 1956; Souphieff & Scherbinovskaja 1937: 89. (**hb**) Costa Lima 1956. (**ds**) Blackwelder 1947:778; Costa Lima 1936, 1956; Kleine 1934a: 157; Souphieff & Scherbinovskaja 1937: 89. (**tx**) Costa Lima 1956; Hopkins 1915b: 46–47; Schedl 1950i: 145, 1959a: 486, 1961k: 686.

nanus Eggers 1920: 33. Lectotype ♀; Kamerun; USNM, Washington, designated by Anderson & Anderson 1971: 21. Synonymy: Schedl 1948i: 114.

References: (**tx**) Anderson, W. H. & Anderson 1971: 21; Eggers 1920: 33, 1940b: 103; Schedl 1938e: 10, 1941d: 380, 1948i: 114, 1959a: 486, 1961k: 686, 1979c: 163; Wood, S. L. 1960a: 46.

canariensis Eggers 1928a: 117. Lectotype ♀; Gran Canaria (Las Palmas) im Park Santa Catalina; USNM,Washington, designated by Anderson & Anderson 1971: 8. Synonymy: Bright 1987a: 5.

References: (**cn**) Herfs 1950: 5; Souphieff & Souphieff & Scherbinovskaja 1937: 45. (**ds**) Kleine 1934a: 156; Schedl, Lindberg, & Lindberg 1959: 23; Souphieff & Scherbinovskaya 1937: 45; Uyttenboogaart 1937: 117, 1947: 10. (**tx**) Anderson, W. H. & Anderson 1971: 8; Bright 1987a: 5; Eggers 1928a: 117–118; Schedl 1934f: 1643, 1938: 10, 1960b: 162, 1979c: 51; Schedl, Lindberg, & Lindberg 1959: 23.

phoenicola Beeson 1939: 281. Holotype ♀; India: United Provinces, Dehra Dun; FRI, Dehra Dun. Synonymy: Wood 1989: 170.

References: (**cn**) Mathur, Singh, & Lal 1958: 66; Mathur et al. 1958: 95. (**ds**) Beeson 1961: 286; Mathur, Singh, & Lal 1958: 66; Mathur et al. 1958: 95. (**tx**) Beeson 1939: 281; Schedl 1979c: 193.

trevori Beeson 1939: 282. Holotype ♀; Nicobars: Kondul; FRI, Dehra Dun. Synonymy: Wood 1989: 170.

References: (**cn**) Mathur, Singh, & Lal 1958: 10; Mathur et al. 1958: 95; Roonwal 1954: 82. (**ds**) Beeson 1961: 286; Mathur, Singh, & Lal 1958: 10; Mathur et al. 1958: 95; Roonwal 1954: 82. (**tx**) Beeson 1939: 282, 302; Schedl 1979c: 255; Wood, S. L. 1989: 170.

pilosulus Schedl 1948i: 118. Holotype ♀; Kurando, Q [Queensland?]; Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 170.

Notes: (1) The holotype consists of the head and prothorax of a *carpophagus* obviously glued to a *dactyliperda* body (Wood 1983 notes, p. 16).

References: (**tx**) Schedl 1948i: 118, 1979c: 194; Wood, S. L. 1989: 170.

ceylonicus Schedl 1948i: 119. Lectotype ♀; Ceylon; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 55. Synonymy: Wood 1989: 170.

References: (**ds**) Schedl 1959a: 485, 1972j: 224. (**tx**) Browne 1970: 565; Schedl 1948i: 118–119, 1959a: 485–487, 1979c: 55; Wood, S. L. 1989: 170.

punctulatus Eggers 1951: 151. Holotype ♀; Insel St. Thomas, Virgin Islands; Eggers Collection, in NHMW, Wien. Synonymy: Wood 1975b: 392.

References: (**ds**) Murayama 1957c: 611. (**tx**) Eggers 1951: 151; Murayama 1957c: 611; Schedl 1948i: 117, 1979c: 205; Wood, S. L. 1975b: 392.

grisscopuberulus Schedl 1972g: 59. Holotype ♀; Pariquera, State of Sao Paulo; Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 170.

References: (**tx**) Schedl 1972g: 59, 1979c: 112; Wood, S. L. 1989: 170.

exasperatus Schedl 1975d: 455. Holotype ♀; Madras: Anaimalai Hills, au dessus d'Aliyar Dam; MHNG, Geneve. Synonymy: Wood 1989: 170.

References: (**tx**) Schedl 1975d: 455, 1979c: 93; Wood, S. L. 1989: 170.

***chimbui* (Schedl)** 1975f: 354 (*Poecilips*). Holotype ♀; New Guinea, Sattelberg, Huon Golf, Upper Manki logging area, Bulolo, Morobe District; Schedl Collection in NHMW, Wien.

Distribution: New Guinea.

References: (**tx**) Schedl 1975f: 354, 1979c: 56.

***cinnamomi* (Eggers)** 1936d: 630 (*Thamnurgides*). Holotype ♀; Ceylon (Peradeniya); BMNH, London.

Distribution: Asia (Karnataka, Maharashtra in India/ Malaya/ Sri Lanka/ Thailand), Indonesia (Java).

Hosts: *Artocarpus elasticus, A. lanceifolius, A. rigidus, A. scortechini, Calamus* sp., *Campnosperma auriculata, Cinnamomum zeylanicum, Daemonorops* sp., *Elaeocarpus petiolatus, Ficus bracteata, F. xylophylla, Intsia palembanica, Macaranga gigantea, Machilus macrantha* (leafstalks), *Mangifera indica, Pinus* sp., *Podocarpus indicus, Semecarpus curtisii, Shorea leprosula.*

References: (**cn**) Mathur, Singh, & Lal 1958: 26; Mathur et al. 1958: 104. (**ec**) Beaver 1979b: 298. (**hb**) Beaver 1979b: 298, 1987a: 14. (**ds**) Beaver 1987a: 14; Beaver & Browne 1975: 294, 1978: 594; Beeson 1939: 290, 303, 1961: 300; Bhasin, Roonwal, & Singh 1958; Browne 1961c: 92, 1981a: 126, 1986a: 91; Mathur, Singh, & Lal 1958: 26; Mathur et al. 1958: 104; Schedl 1953c: 290, 1959a: 488, 1971a: 281, 1971c: 366. (**tx**) Beeson 1939: 290, 303; Browne 1986a: 91; Eggers 1936d: 630–631, 1959a: 488.

***circumdatus* Fonseca** 1930: 88. Holotype ♀; Sao Paulo: Ypiranga; Inst. Biol. [DZSA or MZUSP?], Sao Paulo, no. 476.

Distribution: South America (Brazil).

Hosts: *Cocos australis.*

References: (**cn**) Costa Lima 1956; Souphieff & Scherbinovskaja 1937: 88. (**hb**) Costa Lima 1956. (**ds**) Blackwelder 1947:778; Costa Lima 1936, 1956; Kleine 1934a: 156; Lepesme et al. 1948: 642; Murayama 1957c: 611; Souphieff & Scherbinovskaja 1937: 88. (**tx**) Costa Lima 1956; Fonseca 1930: 88–91; Murayama 1957c: 611.

***collaris* (Schedl)** 1965c: 59 (*Poecilips*). Holotype ♀; Madagascar, Ankofa (Inondation): Maroantsetra, Ambodiovoangy; NosyBe; IRSM, Madagascar.

Distribution: Madagascar.

Notes: (3) DEB note indicates that this holotype is in MNHN, Paris.

References: (**tx**) Schedl 1965c: 59, 1977b: 96, 1979c: 59.

***confertus* (Schedl)** 1942d: 24 (*Poecilips*). Lectotype ♀; Java, Gn. Megamendoeng; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 61.

Distribution: Indonesia (Java).

Notes: (3) Schedl 1959r: 42 (treated this species as a synonym of *uniseriatus*).

References: (**tx**) Schedl 1942d: 24, 1959r: 42, 1979c: 61.

***confusus* (Eggers)** 1940b: 106 (*Poecilips*). Holotype ♀; Congostaat: Likete; MRCB, Tervuren.

Figures: Browne 1973b: 690.

Distribution: Africa (Cameroon/ Congo/ Ivory Coast/ Nigeria/ Sierra Leone/ Zaire), Madagascar.

Hosts: *Chrysophyllum lacourtianum, Coffea liberica, Irvingia grandifolia, Japaca guineensis, Mammea africana, Mangifera indica, M. odorata, Nephelium leachi, Pachylobius deliciosus, Poinciana regia.*

References: (**bv**) Schedl 1960f: 24. (**cn**) Gregory 1954. (**ec**) Schedl 1961k: 717. (**hb**) Schedl 1961k: 717, 1977b: 96. (**ds**) Beeson 1941: 379; Bright 1972d: 65, 1985c: 172; Browne 1970: 541, 568, 1986c: 661; Ghesquiere 1933a: 33; Hargreaves 1937: 509; Kleine 1934: 164; Murayama 1957c: 631; Nunberg 1969a: 382; Schedl 1960f: 24, 96–99, 1961k: 717, 1966c: 717, 1967e: 213, 1971e: 2, 1977b: 96, 1979b: 415; Wichmann 1954: 517. (**tx**) Bright 1972: 65, 1985c: 172; Browne 1973b: 693; Eggers 1940b: 106; Murayama 1957c: 631; Schedl 1938e: 10, 1942d: 4, 1954d: 870, 1957a: 193, 1961e: 127, 1961k: 717, 1966e: 224, 1977b: 961, 1979c: 62.

sierraleonensis Eggers 1932d: 292 (*Poecilips*). Holotype ♀; Sierra Leone (Njala); BMNH, London.

References: (**cn**) Mathur & Singh 1960a: 14; Mathur, Singh, & Lal 1958: 31; Mathur et al. 1958: 101. (**ds**) Beeson 1961: 292; Browne 1973b: 693, 1983b: 77; Hargreaves 1937: 509; Kleine 1934a: 164; Mathur & Singh 1960a: 14; Mathur, Singh, & Lal 1958: 31; Mathur et al. 1958: 101; Murayama 1957c: 631; Roba 1935: 338. (**tx**) Browne 1973b: 690, 693; Eggers 1932d: 292, 1940b: 106; Murayama 1957c: 631; Schedl 1938e: 10, 1954d: 870, 1979c: 228.

***congonus* Eggers** 1924: 104. Syntypes ♀; Kasai (Imamu), Congostaat; MRCB, Tervuren, 1 syntype in BMNH, London, Eggers Collection, 2 Eggers syntypes in NHMW, Wien.

Figures: Schedl 1961k: 719.

Distribution: Africa (Angola/ Cameroon/ Congo/ Ethiopia/ French Guinea/ Ghana/ Ivory Coast/ Nigeria/ Sierra Leone/ South Africa/ Zaire/ Zambia/ Zimbabwe), Madagascar.

Hosts:*Afzelia* sp., *Anopyxis calensis, Anthonotha macrophylla, Archontophoenix cunninghamiana, Canarium schweinfurthii, Cynometra hankei, Elaeis guineensis, Erythropheleum guineense, Eugenia condensata, E. jambolana, Gilbertiodendron dewevrei, Gossweilerodendron balsamiferum, Homalium* sp., *Oxystigma oxyphyllum, Pachyelasma tessmannii, Petersia africana, Polyalthia suaveolens, Sclerosperma mannii.*

References: (**cn**) Alibert 1946; Ghesquiere 1933a: 33, 35; Mayne & Donis 1951: 331–332; Schouteden 1927: 114–116; Souphieff & Scherbinovskaja 1937: 88. (**ec**) Mayne & Donis 1951: 331–332. (**hb**) Alibert 1946; Paulian 1949b: 353, 1951: 27; Schedl 1961k: 719; Wichmann 1954: 517. (**ds**) Browne 1973b: 687; Cachan 1957: 15; Ghesquiere 1933a: 33–35, 1933b: 776, 783; Kemner 1924: 1–33; Kleine 1934a: 156, 164, 619–628; Lepesme et al. 1948: 636–637; Murayama 1957c: 631; Nunberg 1952: 18, 22, 1965b: 18; Paulian 1951: 27, 30; Schedl 1959p: 17, 1962h: 58; Souphieff & Scherbinovskaja 1937: 88; Vanderyst 1923: 614–619, 1924: 149–156; Wichmann 1954: 515; Wood, S. L. 1957e: 1273. (**tx**) Browne 1973b: 687; Eggers 1924: 104, 1927a: 187, 198, 1932d: 291–293, 1940b: 104, 107; Murayama 1957c: 631; Nunberg 1952: 18, 22, 1969a: 382; Powell, W. 1980: 29; Schedl 1938e: 10, 1941d: 380, 1948i: 114, 1950c: 204, 1950d: 7, 1951e: 38, 1951j: 19, 1953g: 242, 1954d: 870, 879, 1955d: 268, 1957c: 325, 1957d: 13, 1959p: 17, 1960f: 54–131, 1961k: 690–691, 719, 1961m: 84, 1962k: 1077, 1965c: 80, 1979c: 62; Wood, S. L. 1957e: 1273.

***corpulentus* Browne** 1970: 565. Holotype ♀; Singapore; BMNH, London.

Distribution: Asia (Singapore), Indonesia (Sarawak in Borneo).

References:(**tx**) Browne 1970: 565.

***crassiventris* (Schedl)** 1961j: 351 (*Poecilips*). Holotype ♀; Ghana, nr. Kumasi, Bobiri Forest Reserve; BMNH, London.

Figures: Browne 1973b: 690.

Distribution: Africa (Ghana).

References: (**ds**) Browne 1973b: 687; Schedl 1964j: 41. (**tx**) Browne 1973b: 687, 690; Schedl 1961j: 351, 1961k: 723, 1979c: 67–68.

***creber* (Schedl)** 1955b: 290 (*Poecilips*). Holotype ♀; Neu-Guinea, Sattelberg; Schedl Collection in NHMW, Wien.

Distribution: Fiji, New Guinea.

References: (**ds**) Murayama 1957c: 630; Schedl 1979f: 103. (**tx**) Murayama 1957c: 630; Schedl 1955b: 280, 290.

***cylindricus* (Eggers)** 1927a: 187 (*Poecilips*). Holotype ♀; Congo Belg.: Sankuru; MRCB, Tervuren.

Distribution: Africa (Angola/ Cameroon/ Fernando Po Island/ Ghana/ Ivory Coast/ Zaire).

Hosts: *Autranella congolensis, Combretodendron macrophyllum, Desplatzia dewevrei, Trichilia gilgiana.*

References: (**bv**) Schedl 1960f: 55. (**cn**) Ghesquiere 1933a: 33–36, 1933b: 783–786. (**hb**) Schedl 1961k: 723. (**ds**) Browne 1973b: 692; Ferreira 1965: 1117; Ghesquiere 1933a: 33–36; Kleine 1934a: 164, 619–628; Murayama 1957c: 631; Schedl 1959p: 17, 1960f: 55–111, 1966f: 78, 1967e: 68, 213, 1971g: 191, 1972e: 281, 1977b: 98, 1979b: 415. (**tx**) Browne 1973b: 692; Eggers 1927a: 187, 1932d: 292; Murayama 1957c: 631; Schedl 1953d: 69, 1961k: 723, 1964e: 68, 1972e: 289, 1977a: 98, 1979c: 74.

***cyperi* (Beeson)** 1929: 230 (*Thamnurgides*). Holotype ♀; Upolu: Apia, Samoan Islands; BMNH, London.

Distribution: Antilles Islands (Guadeloupe/ Jamaica/ Martinique/ Puerto Rico/ Trinidad), Asia (Burma/ Xizang [Tibet] in China/ Assam, Bengal, Karnataka, Kerala, Maharashtra in India/ Malaya/ Sri Lanka/ Vietnam), Australia (Queensland), Cook Island, Fiji, Hawaii, Indonesia (Java), North America (Costa Rica/ Panama/ Florida, Louisiana in USA), Micronesia, Samoan Islands, South America (Brazil/ Suriname), Tahiti, Tongan Islands.

Hosts: *Aesculus punduana, Amoora wallichii, Artocarpus lakoocha, Borassus flabellifer, Canarium strictum, Carallia lucida, Careya arborea, Cossia arabica, Cynometra hemitobophylla, Dipterocarpus trinervis, Eleocarpus oblongus, Eugenia formosa, E.* sp., *Ficus glomerata, Gluta travancoria, Macademia indica, Macaranga denticulata, Mammea americana, Mangifera indica, Orbignya oleifera, Persea americana, Phytelephas macrocarpa, Pronia copaifer, Swietenia macrophylla, Swintonia floribunda, Terminalia myriocarpa, Theobroma cacao, Vateria indica, Xylia dolabriformis.*

References: (**cn**) Mathur & Singh 1961a: 81, 1961b: 34; Mathur, Singh, & Lal 1958: 45, 104; Roonwal 1954: 40. (**ec**) Roberts 1976: 385. (**hb**) Beaver 1987a: 14; Roberts 1976: 385; Wood, S. L. 1982b: 735. (**ds**) Atkinson & Equihua 1985b: 236; Beaver 1987a: 14; Beaver & Maddison 1990: 1371–1372; Beeson 1938b, 1939, 1961: 300; Bright 1985c: 172; Browne 1974a: 64; Kalshoven 1935a: 14; Kleine 1914b: 104; Mathur & Singh 1961a: 81, 1961b: 34; Mathur, Singh, & Lal 1958: 45, 104; Murayama 1957c: 630; Roberts 1976: 385; Roonwal 1954: 40; Wood, S. L. 1982b: 735. (**tx**) Beeson 1929: 230–231, 294, 303, 1938: 290, 1939; Bright 1985c: 172; Murayama 1957c: 630; Schedl 1942d: 23, 1951k: 135; Wood, S. L. 1978b: 397, 1982b: 735.

indicus Eggers 1936d: 631 (*Thamnurgides*).

Holotype ♀; Indien, Mysore State: Sakalaspur; BMNH, London. Synonymy: Wood 1978c: 397.
References: (**cn**) Mathur & Singh 1960a: 13, 1960b: 14, 1961a: 79, 1961b: 26; Mathur, Singh, & Lal 1958: 15; Mathur et al. 1958: 104. (**hb**) Kalshoven 1958b: 176. (**ds**) Beeson 1939: 294, 304, 1961: 300; Bhasin, Roonwal, & Singh 1958: 68, 72–73; Browne 1961c: 92–93; LePelley 1968: 146; Mathur & Singh 1960a: 13, 1960b: 14, 1961a: 79, 1961b: 26; Mathur, Singh, & Lal 1958: 15, 104; Murayama 1957: 628; Roonwal 1954: 89; Schedl 1959a: 488, 1969d: 8, 1971a: 276, 1972j: 223, 1975e: 488, 1977a: 98; Wichmann 1954: 516; Wood, S. L. 1977a: 69. (**tx**) Beeson 1939: 294, 304, 1941: 390; Browne 1961c: 92–93; Eggers 1936d: 631; Nobuchi 1959a: 12–13; Schedl 1942d: 4, 1952d: 343, 1953c: 289, 1959a: 488, 1969d: 8, 11, 1972q: 257, 1977a: 98; Wood, S. L. 1973c: 179, 1978b: 397.

conspeciens Schedl 1936i: 110 (*Xyleborus*). Holotype ♀; Costa Rica, Hamburgfarm, Reventazon, Ebene Limon (Schedl 1979c: 64); Schedl Collection in NHMW, Wien. Synonymy: Wood 1973c: 179.
References: (**ds**) Blackwelder 1947:779; Murayama 1957c: 631; Schedl 1963f: 55, 1966f: 85, 1970e: 82, 1972g: 43, 1978c: 294. (**tx**) Murayama 1957c: 631; Schedl 1936i: 110, 1948i: 114, 1962m: 64, 1963f: 55, 1979c: 64; Wood, S. L. 1973c: 179.

subdepressus Eggers 1940a: 127 (*Dryocoetes*). Holotype ♀; Trois Rivieres, Guadeloupe; Eggers Collection, in NHMW, Wien. Synonymy: Wood 1977c: 384.
References: (**tx**) Eggers 1940a: 127; Schedl 1938e: 10, 1948i: 115; Wood, S. L. 1977c: 384.

insularis Eggers 1940a: 127 (*Dryocoetes*). Syntypes ♀; Guadeloupe and Martinique; MNB, Berlin and 4 cotypes in Eggers Collection, in NHMW, Wien, preoccupied by Eggers 1939. Synonymy: Schedl 1962m: 63.
References: (**tx**) Browne 1970: 568; Eggers 1940a: 127; Schedl 1950f: 39, 1952d: 345, 1979c: 125.

insularis Eggers 1940a: 129. Lectotype ♀; Trois-Rivieres, Guadeloupe; USNM, Washington, designated by Anderson & Anderson 1971: 15, preoccupied by Eggers 1939d: 223. Synonymy: Schedl 1962m: 63.
References: (**tx**) Eggers 1940a: 129; Schedl 1948i: 114, 1952d: 347, 1960b: 162, 1962m: 63, 1963f: 55, 1979c: 125; Wood, S. L. 1973c: 179.

subimpressus Eggers 1940a: 127 (*Dryocoetes*). Holotype ♀; Trois Rivieres, Guadeloupe; Eggers Collection, in NHMW, Wien. Synonymy: Wood 1977c: 384.
References: (**ds**) Murayama 1957c: 607. (**tx**) Eggers 1940a: 127; Murayama 1957c: 607; Schedl 1958k: 143, 1979c: 242; Wood, S. L. 1977c: 384.

subaplanatus Schedl 1942d: 23 (*Poecilips*). Lectotype ♀; Java, O. Preanger, Tjampea; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 240. Synonymy: Wood 1989: 170.
References: (**hb**) Kalshoven 1958b: 176. (**tx**) Nunberg 1960: 616; Schedl 1942d: 23, 1979c: 240; Wood, S. L. 1989: 170.

caraibicus Schedl 1952d: 345 (*Poecilips*). Syntypes ♀; Guadeloupe and Martinique; MNB, Berlin and Eggers Collection in USNM, Washington and/or in NHMW, Wien, automatic. Synonymy: Schedl 1962: 63.
References: (**ds**) Murayama 1957c: 627. (**tx**) Murayama 1957c: 627; Schedl 1952d: 345, 1957a: 193, 1962m: 63–64.

eggersi Schedl 1952d: 347 (*Poecilips*). Lectotype ♀; Trois-Rivieres, Guadeloupe; USNM, Washington, designated by Anderson & Anderson 1971: 15. Synonymy: Schedl 1962m: 63.
References: (**cn**) Costa Lima 1956. (**hb**) Costa Lima 1956. (**ds**) Costa Lima 1956. (**tx**) Costa Lima 1956; Lepesme 1944: 238; Schedl 1952d: 347, 1962m: 63–64; Wood, S. L. 1973c: 179.

pilifrons Browne 1970: 568 (*Poecilips*). Holotype ♀; India: Nilgiri Hills; BMNH, London. Synonymy: Schedl 1972q: 257.
References: (**tx**) Browne 1970: 568–569; Schedl 1972q: 257.

***dactyliperda* (Fabricius)** 1801: 387 (*Bostrichus*). Syntypes 2 ♀; date seeds; UZMC, Copenhagen.
Figures: Balachowsky 1949a: 183, 186, Bright 1972d: 59, Schedl 1961k: 697, Yin, Huang, & Li 1984: 52.
Distribution: Africa (Cameroon/ Canary Islands/ Egypt/ Equatorial Guinea/ Eritrea in Ethiopa/ Kenya/ Madeira Island/ Malawi/ Morocco/ Mozambique/ Senegal/ South Africa/ Sudan/ Tanzania/ Uganda), Antilles Islands (Bahama Islands/ Cuba/ Jamaica/ Puerto Rico), Asia (Arabia/ Bonin Islands/ Burma/ China/ Karnataka, Maharashtra, Uttar Pradesh in India/ Israel/ Japan/ Jordan/ Malaya/ Thailand), Australia (Queensland), Europe (Crete/ France/ Greece/ Italy/ Portugal/ Spain), Hawaii, Madagascar/ New Guinea, New Zealand, North America (Baja California in Mexico/ Panama/ Arizona, California, Florida, Texas in USA), Solomon Islands, South America (Argentina/ Brazil/ Chile/ Colombia/ Ecuador/ Guyana/ Peru/ Uraguay/ Venezuela). Intercepted in tropical seeds throught the world.
Hosts: *Areca catechu, Cargotus urenus, Chamaedorea* spp., *Chamerops* spp., *Cinnamomum zeylanicum, Coccos* spp., *Coccothrinax* sp., *Dictyospermum album, Elaeis guineensis, Elaeocarpus oblongus, Freycinetia arborea, Hyphaena* spp., *Hyphorbe* sp., *Livingstonia* spp., *Olea europaea, Oreodoxa* spp., *Persea gratissima,*

Phloenix spp., *Phytelephas macrocarpa*, *Pritchardia pacifica*. *Ptychosperma* sp., *Sabal bermudana*, *Seaforthia* sp., *Washingtonia filifera*. See also Schedl 1961k: 698–701 for host list.

Notes: (3) Rey 1892: 30 (named aberration *obscurus*, no status). Schedl 1950i: 145 (*areccae* Eggers, nomen nudum, synonymy).

References: (**ay**) Bright 1981b; Gardner 1934b; Imhoff 1856: 228; Meisner et al. 1985; Vassilaina-Alexopoulou, Mourikis, & Buchelos 1986. (**bv**) Schedl 1960f: 52. (**cn**) Aisagbonhi 1988; Anonymous 1939b: 319, 1964h, 1972f; Avidov 1869: 306; Bach 1874; Batra, R. C. 1972: 44; Beitsch 1934: 63–67; Buxton 1920; Campos 1924, 1929: 63–65; Carpenter & Elmer 1978; Decaux 1890b; Fagnicz 1946; Fenner et al. 1950: 48; Frohlich & Rodewald 1969: 202; Garcia-Tejero 1955: 233; Gentry, J. W. 1965: 121; Ghesquiere 1933c; Grandi 1951; Hagedorn 1904g; Hargreaves 1921: 57–64; Herfs 1858: 421–422, 1950: 4–5, 1959; Kalshoven 1932: 248; Kehat, Blumberg, & Greenberg 1976; Kehat et al. 1966: 173; Keifer 1922: 286, 1945: 253; Kleine 1932a: 302; Lever 1943a: 14–18; Linsley 1943: 804–805; Lucas 1846: 100; Martin 1958: 122; Mathur & Singh 1960b: 63; Mathur, Singh, & Lal 1958: 10; Mathur et al. 1958: 95; Morris, H. M. 1937: 21; Rao & Janaki 1953: 805; Roonwal 1954: 82, 1971a; Sanabria 1921: 1–6; Schedl 1960f: 52; Schouteden 1927: 114; Schwartzman & Kurtz 1956: 499–504; Sohi & Bata 1972; Souphieff & Scherbinovskaja 1937: 15; Speyer 1918: 10–13; Squire 1935: 121–124; Stickney et al. 1950: 48; Van der Merwe 1923: 1–4; Wachi 1966: 497; Waterston 1939; Wichmann 1927b: 379; Willcocks 1913: 37–48; Yunus & Hua 1980: 228. (**ec**) Buchner 1961: 1–8, 89–102, 136; Halperin & Holzschuh 1984: 24; Neger 1911a: 51; Novak, P. 1952: 416; Wichmann 1955a: 98. (**hb**) Atkinson et al. 1986: 60; Baeta Neves & Goes 1944: 194–195; Balachowsky 1963a: 1288; Beaver 1987a: 14; Beaver & Browne 1975: 287, 1978: 584; Bodenheimer 1935; Bright 1981b: 117; Bright & Stark 1973: 75; Browne 1939, 1961c: 90; Budge 1949; Burgos & Saucedo 1983: 98; Chamberlin 1939: 317–318; Dalla Torre 1880: 50; Decaux 1890: 1038–1043; Duffy 1953: 3, 7, 9; Eichhoff 1881a: 53, 267; Emden 1924: 187; Fuchs 1904a; Gardner 1934: 14, 1957: 30; Grandi 1951; Halperin & Holzschuh 1984: 24; Henschel 1895a: 189; Herfs 1949: 22–49, 1950: 3–30, 1959; Hill, D. S. 1987: 339; Kalshoven 1951: 856, 1958b: 179; Kleine 1932a: 302, 1934: 156–157, 608–609; Lengerken 1939: 64, 1954: 85; Lepiney & Mimeur 1932: 45; Morstatt 1924: 12; Nordlinger 1855: 184, 1869: 233; Nusslin 1906a: 50; Peyerimhoff 1926: 387; Rao & Janaki 1953: 805; Roonwal 1971a; Rupertsberger 1880: 232; Schedl 1961k: 692; Schouteden 1927: 116; Schroeder 1896: 357; Stark 1952: 339; Tucker 1952: 347; Uyttenboogaart 1927: 40–41; Viana 1964: 122; Wachtl 1876a: 456; Wichmann 1927a: 80, 1927b: 379; Willcocks 1913: 37; Wood, S. L. 1982b: 739; Zacher 1927: 161. (**ds**) Anonymous 1964h; Atkinson & Equihua 1985b: 236, 1988: 86; Atkinson et al. 1986: 60, 1991: 158; Bach 1854: 123, 130; Baeta Neves 1964: 6; Baeta Neves & Goes 1944: 194–195; Balachowsky 1963a: 1288; Barthe 1896; Beaver 1987a: 14, 1989a: 12; Beaver & Browne 1975: 287, 1978: 584; Bedel 1892: 155; Beeson 1938b: 287, 1939: 283–284, 1941: 371, 1961: 286; Bertolini 1872: 201, 1899: 106; Bhasin, Roonwal, & Singh 1958: 78, 113; Blackwelder 1947: 778; Blackwelder & Blackwelder 1948; Blanchere & Robert 1889; Blandford 1898a: 424, 1898b: 193; Blatchley & Leng 1916: 609; Bodenheimer 1930: 275, 356, 1935; Borchert 1951; Bright 1972d: 66, 1985c: 172; Bright & Stark 1973: 75; Brimblecombe 1954: 14; Browne 1961c: 90; Burgos & Saucedo 1983: 98; Buxton 1920; Bytinski-Salz 1966: 38; Calwer 1884, 1893; Chamberlin 1939: 317–318; Chapuis & Candeze 1853; Costa Lima 1936: 358, 1956: 290; Dejean 1821, 1825, 1837: 332; DeLotto 1947; Diek 1870: 155; Doebner 1862: 184; Donisthorpe 1931: 173; Duftschmidt 1825: 12, 95; Escalera 1919: 107; Fairmaire 1892a: 77, 81; Fauvel 1897: 66; Formanek 1907: 3; Forster 1849: 439; Fricken 1889: 351; Fuchs 1904a: 253; Gardner 1957a; Gaubil 1849: 126; Gebien 1907: 222; Gemminger & Harold 1872: 2687; Gentry, J. W. 1965: 121; Georghiou 1977: 73; Ghesquiere 1933a: 27, 1933b: 776; Gozis 1875: 80; Gredler 1868; Gridelli 1930: 394; Grill 1895: 312; Hagedorn 1910d: 68; Halperin & Holzschuh 1984: 24; Hamilton 1889: 159, 1894b: 406; Henschel 1895a: 189; Henshaw 1895: 44; Heyden, Reitter, & Weise 1883: 182, 1891: 673, 1906: 713; Horion 1951; Kalshoven 1932: 248, 1958: 170; Kaltenbach 1874: 149; Kersten 1933: 77; Kestercanek 1881a: 12; Klefbeck & Sjoberg 1960: 230; Kleine 1913b: 137, 1914b: 258, 322, 1928: 302, 1932a: 302, 1934a: 156; Kocher 1961: 253; Kraatz 1869: 59; Lacordaire 1866: 381; Langhoffer 1915a: 65, 75, 1915c: 158; Lee 1971: 31; Lepesme 1944: 237, 1947: 64; Lepesme et al. 1948: 634; Leonardi 1923: 438; Lepiney & Mimeur 1932: 45; Lever 1943a: 14; Linsley 1943: 804–805; Lomnicki 1913b: 148; Lucas 1846: 100; Luigioni 1920: 1–4, 1929: 998; Luna de Carvalho 1950: 15; Lundblad 1958: 489; Martin, H. 1958: 122, 1959; Mathur & Singh 1960b: 63; Mathur, Singh, & Lal 1958: 10; Mathur et al. 1958: 95; Morstatt 1913: 292; Murayama 1957c: 611; Negru 1968a: 456; Nobuchi & Ono 1973: 181; Nonveiller 1984: 40; Novak, P. 1952: 416; Nunberg 1958a: 479, 1960b: 160, 1961b: 609; Pacher 1853: 49; Perrot 1955: 64; Peyerimhoff 1926: 387; Pfeffer 1989a: 58; Pittioni 1943: 176; Pretzel 1941: 8; Ragusa 1924: 117; Rapp 1934: 735; Redtenbacher 1858: 836, 1874: 381; Reitter 1894a: 89, 1906: 713, 1916: 292; Roonwal 1954: 82, 1971a:

1–11; Ross 1919: 83; Sainte-Claire & Mequignon 1938: 447; Schaufuss 1915: 1236; Schaum 1859: 96, 1862: 101; Schedl 1936g: 526, 1959a: 487, 1960f: 22, 52, 1961k: 692, 1962k: 1077, 1963e: 154–155, 1963h: 267, 1964a: 95–97, 1966f: 85–86, 1969g: 285–291, 1970e: 82, 1971d: 426, 1971g: 190, 1972d: 142, 1972n: 351, 1973d: 161, 1977b: 86, 1978d: 73, 1979i: 291, 1980a: 19; Scheerpeltz & Winkler 1930: 257; Schilsky 1888: 122, 1889: 356, 1909: 189; Schiodte 1873: 103; Schmitz 1898: 157; Schwarz 1885: 42; Seidlitz 1891a: 567, 1891b: 613; Sohi & Bata 1972; Souphieff & Scherbinovskaja 1937: 15; Stark 1952: 339; Stein 1868: 114; Stein & Weise 1877: 165; Stierlin 1898: 446; Stierlin & Gautard 1872: 293, 1906: 206; Sturm 1826: 102, 1843: 230; Swaine 1909: 90; Swezey 1928: 185, 1931: 332, 1932: 16, 28, 1936: 202, 1941: 120, 126, 1954: 173; Tordo 1951: 106; Ulke 1902: 56; Van Dyke 1927: 151, 1928; Vassilaina-Alexopoulou, Mourikos, & Buchelos 1986; Viana 1964: 122; Villa & Villa 1833: 26; Wachtl 1876a: 456–461; Westhoff 1882: 240; Wichmann 1927a: 80, 1954: 516, 1955a: 98, 100, 103; Wolcott 1936: 318; Wood, S. L. 1977a: 69, 1982b: 739; Yin, Huang, & Li 1984: 151; Yunus & Hua 1980: 228. (**tx**) Balachowsky 1949a: 182–183, 1963a: 1288; Balachowsky & Mesnil 1935: 602; Bedel 1892c: 155; Beeson 1939: 283–284; Bertolini 1872; Blatchley & Leng 1916: 609; Bright 1963: 104, 1972d: 59, 66, 1985c: 172; Carne et al. 1980; Chamberlin 1939: 317–318; Chapuis & Candeze 1853: 235; Dejean 1821, 1825; Duftschmidt 1825: 12, 95; Eggers 1908: 217, 1924: 104–105, 1927b: 399, 1927e: 38–39, 1928a: 117–118, 1928c: 86, 1929e: 42, 1932d: 291, 1935c: 307, 1939b: 8; Eichhoff 1864b: 38–39, 1866: 277, 1877: 120, 1878a: 391, 1878b: 308–315, 1881a: 52–53, 267, 1883a: 115, 141; Fabricius 1801: 387; Fauvel 1889; Ferrari 1867a: 24, 26, 1867b: 114; Fleischer 1927; Fonseca 1930: 87; Fricken 1889: 351; Gardner 1934b; Gebien 1907: 197; Hagedorn 1910a: 94, 1910e: 3–4, 1913a: 325–326; Henschel 1895a: 189; Hopkins 1914: 118, 133, 1915b: 46; Hornung 1842: 115–116; Illiger 1907: 321; Kuhnt 1913: 1059; Lacordaire 1866: 381, 391; Lepesme 1944: 237; Letzner 1839: 116–120, 1891: 377; Lovendal 1889b: 72, 1898: 183; Lucas 1920: 194, 1946: 101; Murayama 1957c: 611; Nunberg 1958a: 479, 1961b: 609; Perris 1866: 193, 1977: 415; Portevin 1935: 328; Redtenbacher 1858: 836; Reitter 1894a: 89, 1913a: 78, 1916: 292; Rey 1892b: 30; Rupertsberger 1880: 232; Schedl 1933e: 106, 1934f: 1643, 1938e: 10, 1938i: 25, 1942c: 163, 1948i: 113, 1950d: 18, 1950e: 211, 1951d: 17, 1952e: 122–123, 1954a: 139, 1957b: 151, 1961k: 692, 697, 1962k: 1077, 1972d: 142, 1977b: 86, 1980a: 19; Seidlitz 1891a: 567, 1891b: 613; Stark 1952: 339–340; Stierlin 1898: 446; Swaine 1909: 90; Wood, S. L. 1975b: 392, 1982b: 739; Yin, Huang, & Li 1984: 151. (**ms**) Lucas 1920: 194.

palmicola Hornung 1842: 116 (*Bostrichus*). Syntypes ♀; Ostindien, Fruchten von Betelnussen; MNB, Berlin. Synonymy: Balachowsky 1949a: 182.

References: (**ds**) Gemminger & Harold 1872: 2687; Girard 1880; Swaine 1909: 90. (**tx**) Balachowsky 1949a: 182; Eichhoff 1881a: 268; Ferrari 1867a: 32; Hornung 1842: 116; Schedl 1961k: 692; Swaine 1909: 90.

tropicus Eichhoff 1878b: 312. Holotype ♀; America meridionalis (Peru); Hamburg Museum, lost. Synonymy: Wood 1992b: 82.

Notes: (1) Eichhoff (1878: 312) states that this taxon is near *dactyliperda* (probably a synonym). Since there is only one known endemic American species of this genus, because the description fits *dactyliperda*, and the type is lost, it is placed in synonymy under that species.

References: (**ds**) Blackwelder 1947:778; Kleine 1913b: 138, 1914b: 344. (**tx**) Eichhoff 1878a: 391, 1878b: 312; Hagedorn 1910a: 94; Schedl 1952h: 70.

laboulbenei Decaux 1890:? (p. 1–16). Syntypes, sex?; Siam; not located. Synonymy: Bedel 1892b: 155.

References: (**ds**) Bedel 1892b. (**tx**) Decaux 1890: 1–16; Bedel 1892b: 115; Schedl 1961k: 692.

eggersi Hagedorn 1904g: 449. Syntypes ♀; Hamburg importiert in Steinnussen aus Ekuador; Hamburg Museum, lost, 1 syntype in USNM, Washington. Synonymy: Schedl 1948i: 113.

References: (**ay**) Herfs 1949: 26. (**cn**) Fonseca 1930: 87; Grandi 1951; Hagedorn 1913a; Herfs 1949: 26, 1950: 5, 1958: 421; Kleine 1932a: 302; Ruffinelli 1944: 27; Souphieff & Scherbinovskaja 1937: 88. (**ec**) Neger 1911a: 51. (**hb**) Grandi 1951; Hagedorn 1913a; Herfs 1949: 26; Kleine 1932a: 302; Viana 1964: 122. (**ds**) Blackwelder 1947:778; Costa Lima 1936; Donisthorpe 1931: 174; Hagedorn 1910d: 68; Kleine 1913b: 137, 1914b: 343, 1932a: 302; Lepesme et al. 1948: 640; Ruffinelli Rey 1976; Souphieff & Scherbinovskaja 1937: 88; Viana 1964: 122. (**tx**) Anderson, W. H. & Anderson 1971: 12; Eggers 1928c: 86; Hagedorn 1904g: 449, 1910a: 94, 1910e; Schedl 1948i: 113, 1961k: 692, 1979c: 87.

bassiavorus Hopkins 1915b: 47. Holotype ♀; Washington, D.C. [USA]; USNM, Washington. Synonymy: Wood 1975b: 392.

References: (**cn**) Souphieff & Scherbinovskaja 1937: 88. (**hb**) Chamberlin 1939: 319. (**ds**) Blackwelder 1947:778; Blatchley & Leng 1916: 609; Chamberlin 1939: 319; Kleine 1934a: 156; Murayama 1957c: 611; Souphieff & Scherbinovskaja 1937: 88; Wolcott 1948: 383. (**tx**) Blatchley & Leng 1916: 609; Chamberlin 1939: 319; Hopkins 1915b: 46–47; Murayama 1957c: 611; Schedl 1950i: 145; Wood, S. L. 1975b: 392.

moreirai Eggers 1928c: 86. Lectotype ♀; Minas

Garaes, Guaxupe, Brasil; USNM, Washington, designated by Anderson & Anderson 1971: 21. Synonymy: Schedl 1948i: 113.
References: (**cn**) Costa Lima 1956; Souphieff & Scherbinovskaja 1937: 89. (**hb**) Costa Lima 1956. (**ds**) Blackwelder 1947:778; Costa Lima 1936, 1956; Kleine 1934a: 157; Lepesme et al. 1948: 641; Souphieff & Scherbinovskaja 1937: 89. (**tx**) Anderson, W. H. & Anderson 1971: 21; Costa Lima 1956; Eggers 1928c: 86; Fonseca 1930: 87–92; Lepesme 1944: 238; Schedl 1948i: 113, 1959a: 487, 1961k: 692, 1979c: 159.

tanganus Eggers 1935c: 307. Holotype ♀; Ostafrika (Tanga); BMNH, London. Synonymy: Schedl 1948i: 113.
References: (**ay**) Herfs 1949: 22. (**cn**) Herfs 1949: 22, 1950:d, 1958: 422. (**hb**) Herfs 1949: 22; Linsenmaier 1972. (**ds**) Lee 1971: 31; Lepesme et al. 1948: 637. (**tx**) Eggers 1935c: 307; Lepesme 1944: 238; Schedl 1937g: 67–68, 1938e: 10, 1948i: 113, 1959a: 487, 1961k: 692, 1979c: 249.

borassi Beeson 1939: 283. Holotype ♀; Coorg: Bhagamandala; FRI, Dehra Dun. Synonymy: Wood 1989: 171.
References: (**cn**) Mathur, Singh, & Lal 1958: 14, 95; (**ds**) Beeson 1961: 286; Bhasin, Roonwal, & Singh 1958; Mathur, Singh, & Lal 1958: 14, 95; Schedl 1959a: 485, 1971a: 281, 1972j: 244. (**tx**) Beeson 1939: 283–284; Browne 1970: 564; Schedl 1948i: 118, 1950f: 39, 1959a: 485–486; Wood, S. L. 1989: 171.

elaeocarpi Beeson 1939: 284. Syntypes ♀; India: Coorg: Bhagamandala, 3,500 feet; FRI, Dehra Dun. Synonymy: Wood 1989: 171.
References: (**cn**) Mathur, Singh, & Lal 1958: 42, 95. (**ds**) Beeson 1961: 286; Mathur, Singh, & Lal 1958: 42, 95; Schedl 1975e: 449. (**tx**) Beeson 1939: 284–285, 301; Wood, S. L. 1989: 171.

***declivis* Sampson** 1914: 390. Syntypes 10 ♀; Seychelles Isl: Silhouette: Mare aux Cochons, Mahe: high forest of Morne Blanc and Pilot, country above Port Glaud, near Morne Blanc, forest above Cascade Estate, Mare aux Cochons district; BMNH, London.
Distribution: Africa (Seychelles Islands), Madagascar.
References: (**hb**) Beaver 1987a: 15. (**ds**) Beaver 1987a: 15; Murayama 1957: 613; Sampson 1914: 389; Schedl 1969d: 11, 1977b: 89. (**tx**) Sampson 1914: 389–391; Schedl 1948i: 115, 1950d: 26, 1977b: 89.

***depressus* (Eggers)** 1927c: 82 (*Thamnurgides*). Holotype ♀; Philippinen: Luzon, Provinz Laguna, Mount Maquiling; USNM, Washington.
Distribution: Philippine Islands.
References: (**ds**) Schedl 1966b: 35. (**tx**) Anderson, W. H. & Anderson 1971: 11; Eggers 1927c: 82–83; Nobuchi 1983: 301.

***distinctus* (Motschulsky)** 1866: 403 (*Anodius*). Holotype ♀; type labeled Ceylon, published as Des Montagnes de Nura-Ellia; IZM, Moscow.
Distribution: Antilles Islands (Jamaica/ Puerto Rico), Asia (Sri Lanka), Guam, Hawaii, Micronesia, New Guinea, North America (Honduras/ Florida, Louisiana, Texas in USA), South America (Suriname).
Hosts: *Coccothrinus* sp., *Phoenix* sp. seeds.
References: (**hb**) Deyrup & Atkinson 1987a: 65; Wood, S. L. 1982b: 737. (**ds**) Atkinson & Equihua 1988: 86; Atkinson et al. 1991: 159; Bright 1972d: 67, 1985c: 172; Deyrup & Atkinson 1987a: 65; Gemminger & Harold 1872: 2685; Hagedorn 1910d: 103; Hilburn & Gordon 1989: 689; Kleine 1913b: 161, 1914b: 274; Motschulsky 1866: 403; Wood, S. L. 1977a: 69, 1982b: 737. (**tx**) Bright 1972d: 67, 1985c: 172; Hagedorn 1910a: 153; Motschulsky 1866: 403; Muskus, A. 1984: 87; Wood, S. L. 1969c: 117, 1982b: 737.

floridensis Schedl 1948i: 117. Lectotype ♀; Winter Park, Florida [USA]; Schedl Collection in NHMW, Wien. Synonymy: Wood 1969c: 117.
References: (**ds**) Bright 1985c: 173; Murayama 1957c: 611; Schedl 1966f: 79. (**tx**) Bright 1985c: 173; Murayama 1957c: 611; Schedl 1948i: 116–117, 1979c: 98; Wood, S. L. 1969c: 117.

***duplopilosus* (Browne)** 1970: 567 (*Thamnurgides*). Holotype ♀; Sarawak: Mt. Poi, 4350 ft.; BMNH, London.
Distribution: Indonesia (Borneo, Java).
References: (**tx**) Browne 1970: 567; Schedl 1972q: 256.

uniseriatus Eggers 1936e: 85 (*Thamnurgides*). Holotype ♀; Java, Preanger; USNM, Washington, preoccupied by Eggers 1927. Synonymy: Schedl 1972q: 256.
References: (**ds**) Schedl 1964c: 304. (**tx**) Anderson, W. H. & Anderson 1971: 35; Eggers 1936e: 85–86; Schedl 1972q: 256, 1979c: 261.

***elongatulus* (Schedl)** 1975e: 455 (*Poecilips*). Holotype ♀; Kerala: Cardamon Hills, Valara Fall, a 46 km au sud-ouest de Munnar, 450–500 m; MHNG, Geneve.
Distribution: Asia (Kerala in India).
References: (**tx**) Schedl 1975e: 455, 1979c: 89.

***elongatus* (Eggers)** 1923a: 150 (*Dendrurgus*). Holotype ♀; Sipora auf der Insel Mentawei; Genueser Museum.
Distribution: Indonesia (Mentawei).
References: (**tx**) Eggers 1923a: 150.

***excavatus* Schedl** 1948i: 114. Holotype ♀; Seychelles Islands, Perey sladen Trust; Schedl Collection in NHMW, Wien.
Distribution: Africa (Seychelles Islands).
References: (**ds**) Beaver 1987a: 17. (**tx**) Schedl 1948i: 114, 1979c: 93.

***fagi* (Nobuchi)** 1959a: 12 (*Poecilips*). Syntypes 48, sex?; River Daido, Oku-chichibu, Saitama pref., Japan; Nobuchi Collection, Ibaraki.
Distribution: Asia (Japan).
Hosts: *Fagus crenata*.
References: (**tx**) Nobuchi 1959a: 12.

***fallax* (Eggers)** 1927b: 399 (*Poecilips*). Lectotype ♀; Java; USNM, Washington, designated by Anderson & Anderson 1971: 13.
Distribution: Asia (Andaman Islands, Nicobar Islands in India/ Malaya/ Vietnam), Indonesia (Java), Micronesia (Marshall Islands), Philippine Islands.
Hosts: *Bruguiera gymorhiza* (seeds), *Carapa obovata, Ceriops candolleana, Rhizophora* spp., *Xylocarpus gangeticus*.
References: (**cn**) Browne 1968: 577; Lapis & Valentin 1982; Mathur, Singh, & Lal 1958: 21, 101. (**hb**) Browne 1938a, 1961c: 93, 1968: 577; Kalshoven 1958b: 178. (**ds**) Beeson 1961: 292; Browne 1938a, 1961c: 93, 1979: 86, 1981b: 598, 1968: 577; Mathur, Singh, & Lal 1958: 21, 101; Schedl 1936d: 2. (**tx**) Anderson, W. H. & Anderson 1971: 13; Eggers 1927b: 399–400; Nobuchi 1983: 301; Schedl 1938e: 10, 1939e: 329, 1942a: 170, 1942d: 3; Wood, S. L. 1960a: 47, 50.

***fijianus* (Schedl)** 1942c: 179 (*Poecilips*). Holotype ♀; Fiji; Schedl Collection in NHMW, Wien.
Distribution: Christmas Island, Fiji Islands, Philippine Islands.
References: (**ec**) Roberts 1976: 386. (**hb**) Roberts 1976: 386. (**ds**) Browne 1970: 541, 1974a: 64–65; Murayama 1957c: 630; Roberts 1976: 386; Schedl 1964i: 248, 1979f: 103. (**tx**) Murayama 1957c: 630; Schedl 1942c: 179, 1950f: 38, 1955b: 284, 1979c: 96.

***fulgens* (Schedl)** 1979g: 99 (*Poecilips*). Holotype ♀; New Guinea: Bulolo, Morobe Distr., Upper Manki L. A.; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1979g: 99.

***furvus* (Sampson)** 1914: 389 (*Dryocoetes*). Holotype ♀; Seychelles: Silhouette: near Mont Pot-a-eau, ca. 1500 ft.; BMNH, London.
Distribution: Africa (Seychelles Islands).
Notes: (1) Browne 1970: 567 (to *Poecilips*, = *Coccotrypes*).
References: (**hb**) Beaver 1987a: 15. (**ds**) Beaver 1987a: 15; Sampson 1914: 389; Schedl 1969d: 11. (**tx**) Browne 1970: 567; Sampson 1914: 389.

***gedeanus* (Eggers)** 1936e: 86 (*Thamnurgides*). Holotype ♀; Java: Mount Gede, 1200 m; Kalshoven Collection.
Distribution: Asia (Burma/ Malaya), Indonesia (Borneo, Java).
Hosts: *Artocarpus* spp., *Balanocarpus heimii* (fruit), *Campnosperma auriculata, Canarium* sp., *Dipterocarpus crinitus, Dryobalanops aromatica, Ficus* spp., *Garcinia merguensis, Shorea* spp.
Notes: (1) Schedl 1979c: 103 (Invalid lectotype designation). (3) Paratypes of *Xyleborus despectus* in NHMW, Wien, are of *gedeanus*; possible synonymy should be checked.
References: (**cn**) Browne 1968: 577; Mathur & Singh 1960b: 3, 1961a: 40; Mathur, Singh, & Lal 1958: 20, 104. (**ec**) Beaver 1979b: 298. (**hb**) Beaver 1979b: 298; Beaver & Browne 1978: 594; Browne 1961c: 94–96, 1968: 577; Kalshoven 1958b: 178. (**ds**) Beaver & Browne 1978: 594; Beeson 1961: 300; Browne 1961a: 304, 1961c: 94, 1968b: 577; Mathur & Singh 1960b: 3, 1961a: 40; Mathur, Singh, & Lal 1958: 20, 104. (**tx**) Beeson 1939: 86; Eggers 1936e: 86; Schedl 1958k: 153, 1979c: 103.

grossopunctatus Schedl 1942d: 36 (*Xyleborus*). Lectotype ♀; Borneo, Tengkawang; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 113. Synonymy: Schedl 1958k: 153.
References: (**tx**) Schedl 1942d: 36, 1954c: 154, 1958k: 153, 1979c: 113.

sulcipennis Schedl 1942a: 178 (*Ozopemon*). Lectotype ♀; Malaya, Selangor, Semangkok, F. R., 2000 fuss; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 246. Synonymy: Schedl 1958k: 153, Browne 1961c: 94.
References: (**ds**) Nunberg 1961b: 609. (**tx**) Browne 1961c: 94; Nunberg 1961b: 609; Schedl 1942a: 178; 1958k: 153, 1979c: 246.

***ghesquierei* Eggers** 1927a: 179. Syntypes ♀; Sanduru, Belgian Congo; MRCB, Tervuren, 1 in BMNH, London, 4 in Schedl Collection in NHMW, Wien.
Figures: Schedl 1960f: 57.
Distribution: Africa (Angola/ Cameroon/ Gabon/ Ghana/ Ivory Coast/ Sierra Leone/ Zaire).
Hosts: *Anonidium manni*.
References: (**bv**) Schedl 1960f: 12. (**cn**) Ghesquiere 1933a; Mayne & Donis 1951: 331–332; Schouteden 1927: 114; Souphieff & Scherbinovskaja 1937: 88. (**ec**) Mayne & Donis 1951: 331; Schedl 1958d: 188. (**hb**) Lepesme 1947: 637; Pollet 1977; Schedl 1960f: 56; Schouteden 1927: 116. (**ds**) Ferreira 1965: 1117; Ghesquiere 1933a: 33–35, 1933b: 783; Hargreaves 1937: 509; Kleine 1934a: 157, 616; Mayne & Donis 1960: 102–103, 1962: 303; Pollet 1977; Schedl 1938d: 451, 1957d: 13, 1958d: 188, 1959p: 17, 1960f: 12–114, 1961k: 709, 1964j: 41, 1965e: 352, 1967e: 212, 1979b: 415; Souphieff & Scherbinovskaja 1937: 88. (**tx**) Eggers 1927a: 179–180, 1932d: 292, 1933b: 8; Murayama 1957: 631; Schedl 1938e: 10, 1948c: 664, 1948i: 113–114, 1960f: 57, 1961k: 709, 1979c: 104.

imitans Eggers 1932d: 293 (*Poecilips*). Holotype ♀; type labeled Congo Belge: Lokolenge, published as Congostaat; Eggers Collection, in NHMW, Wien. Synonymy: Schedl 1961k: 709.
References: (**ds**) Murayama 1957c: 631. (**tx**) Eggers 1932d: 293–294, 1936d: 632; Mura-

yama 1957c: 631; Nunberg 1969a: 382; Schedl 1957d: 13, 1961k: 709, 1979c: 121.

***grandis* (Eggers)** 1927a: 188 (*Poecilips*). Holotype ♀; Belg. Congo: Sankuru; MRCB, Tervuren, 4 cotypes Eggers Collection, in NHMW, Wien.
Figures: Browne 1973b: 690.
Distribution: Africa (Ghana/ Ivory Coast/ Zaire).
Hosts: *Cynometra hankei, Parinari* sp., *Gilbertiodendron dewevrei*.
References: (**bv**) Schedl 1960f: 68. (**cn**) Ghesquiere 1933a: 33–36, 1933b: 784; Mayne & Donis 1951: 332. (**ec**) Mayne & Donis 1951: 332. (**ds**) Browne 1973b: 691; Ghesquiere 1933a: 33–36, 1933b: 784; Kleine 1934a: 164, 619; Murayama 1957c: 631; Schedl 1960f: 26, 68, 78, 81, 1961k: 724, 1967e: 214, 1979b: 415. (**tx**) Browne 1973b: 690–691; Eggers 1927a: 188; Murayama 1957c: 631; Schedl 1950f: 39, 1961k: 724, 1979c: 109.

***graniceps* (Eichhoff)** 1877a: 120 (*Dryocoetes*). Holotype ♀; Japan; IRSNB, Brussels?
Distribution: Asia (Japan).
Notes: (1) Browne 1970: 566 (to *Coccotrypes*).
References: (**ay**) Herfs 1949: 36. (**cn**) Anonymous 1980g; Hagedorn 1913a; Herfs 1949: 36; Kleine 1932a: 302; Souphieff & Scherbinovskaja 1937: 88. (**hb**) Hagedorn 1913a; Herfs 1949: 36; Kleine 1932a: 302. (**ds**) Anonymous 1980g; Blandford 1894c; Hagedorn 1910d: 68,1913a; Kleine 1914b: 258, 1932a: 302, 1934a: 157; Murayama 1953a, 1954b: 202, 1957c: 588, 610; Schedl 1966b: 34; Souphieff & Scherbinovskaja 1937: 88. (**tx**) Blandford 1894d: 98; Browne 1939: 107–115, 1970: 566; Eggers 1927a: 179; Eichhoff 1877a: 120, 1878b: 314; Hagedorn 1910a: 94; Murayama 1953a, 1954b: 202, 1957c: 588, 610; Nobuchi 1983: 301; Schedl 1934f: 1642–1643, 1938e: 10; Strohmeyer 1911b: 21.

graniceps Eichhoff 1878b: 314. Holotype ♀; Japonia Asiatica; IRSNB, Brussels (?), preoccupied by Eichhoff 1877. Synonymy: Browne 1970: 566.
Notes: (3) The two descriptions by Eichhoff are identical except for the first sentence in the second paragraph; it is obvious that only one name was intended.
References: (**hb**) Browne 1939: 107–115. (**ds**) Hagedorn 1910d: 67; Kleine 1913b: 136–137, 1914b: 290; Sampson 1914: 390. (**tx**) Eichhoff 1878b: 314; Hagedorn 1910a: 96; Sampson 1914: 390.

***impressus* Eggers** 1936d: 632. Holotype ♀; Singapore: USNM, Washington.
Distribution: Asia (Malaya/ Singapore), Indonesia (Borneo).
References: (**ds**) Browne 1961c: 90. (**tx**) Anderson, W. H. & Anderson 1971: 15; Eggers 1936d: 632; Schedl 1938e: 10, 1939e: 328, 1979c: 122.

***incognitus* (Schedl)** 1961f: 89 (*Poecilips*). Holotype ♀; Luzon, Tayabas Cabibihan; Schedl Collection in NHMW, Wien.
Distribution: Philippine Islands (Luzon).
Hosts: *Dipterocarpus vernicifluus*.
References: (**ds**) Schedl 1966b: 35. (**tx**) Nobuchi 1983: 301; Schedl 1961f: 89, 1979c: 123.

***jacobsoni* (Eggers)** 1923a: 149 (*Dendrurgus*). Lectotype ♀; Afr Njuruk Dempu auf Sumatra; Eggers Collection, in NHMW, Wien, designated by Schedl 1979c: 129.
Distribution: Asia (Malaya), Indonesia (Sumatra).
References: (**tx**) Browne 1961c: 96, 1970: 567; Eggers 1923a: 149, 1925: 157, 1927b: 390, 1936e: 85–86; Schedl 1953c: 289–290, 1965g: 23, 1979c: 129.

***japonicus* (Eggers)** 1926b: 145 (*Poecilips*). Holotype ♀; Takao-Berg b. Hachioji; Nobuchi Collection, Ibaraki.
Figures: Nobuchi 1966d:pl. 3.
Distribution: Asia (Japan).
References: (**ds**) Browne 1961c: 96; Murayama 1948: 2, 1949a: 13, 1951c: 4, 1954b: 167, 1957c: 588; Nobuchi 1966d: 21. (**tx**) Eggers 1926b: 145; Murayama 1954b: 167, 1957c: 588; Nobuchi 1959: 12, 1966d: 21, pl. 3; Schedl 1934f: 1634, 1952k: 160.

***klapperichi* (Schedl)** 1953e: 26 (*Poecilips*). Lectotype ♀; Fukien, Kuatun; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 133.
Distribution: Asia (Fujian in China).
References: (**tx**) Schedl 1953e: 26, 1979c: 133.

***kuscheli* Schedl** 1979f: 104. Holotype ♀; Fiji; Schedl Collection in NHMW, Wien.
Distribution: Fiji Islands.
References: (**tx**) Schedl 1979f: 104.

***laevicollis* (Schedl)** 1957d: 67 (*Poecilips*). Holotype ♀; Congo Belge: Yangambi; MRCB, Tervuren.
Distribution: Africa (Ghana/ Zaire).
Hosts: *Afrormosia elata, Allanblackia floribunda, Chrysophyllum africanum, C. lacourtianum, Entandrophragma cylindricum, Erythrophleum guineense, Gilbertiodendron dewevrei, Klainedoxa gabonensis, Mammea africana, Myrianthus arboreus, Parinari glabra, Pycnanthus angolensis, Symphonia globulifera, Tetrapleura tetraptera, Trichilia gilgiana, Uapaca guineensis*.
References: (**bv**) Schedl 1960f: 42. (**ec**) Schedl 1961k: 727. (**ds**) Browne 1973b: 686, 1980c: 485, 1980d: 493, 1986c: 661; Mayne & Donis 1962: 310; Nunberg 1961a: 329; Schedl 1960f: 27, 1961k: 727, 1962k: 1078. (**tx**) Browne 1973b: 686; Schedl 1957d: 67, 1961k: 727, 1962k: 1078, 1979c: 135.

***laticollis* (Browne)** 1980: 775 (*Poecilips*). Holotype ♀; Seychelles Islands: Mahe Centre: Morne Blanc, foret endemique, 667 m; MRCB, Tervuren.
Distribution: Africa (Seychelles Islands).
References: (**hb**) Beaver 1987a: 16. (**ds**) Beaver 1987a: 16. (**tx**) Browne 1980: 775.

***leveri* Browne** 1970: 564. Holotype ♀; Fiji: Navai; BMNH, London.
Distribution: Fiji Islands.
Hosts: *Podocarpus* sp. seeds.
References: (**ds**) Browne 1970: 564, 1974a: 63; Schedl 1979f: 103. (**tx**) Browne 1970: 564.

***litoralis* (Beeson)** 1939: 291 (*Thamnurgides*). Holotype ♀; Bengal: Sunderbans Division, Khulna; FRI, Dehra Dun.
Distribution: Asia (Andaman Islands, Bengal in India).
Hosts: *Heritiera fomes, H. minor, Rhizophora mucronata.*
References: (**cn**) Mathur, Singh, & Lal 1958: 49; Mathur et al. 1958: 104. (**ds**) Beeson 1939: 291, 305, 1961: 300; Mathur, Singh, & Lal 1958: 49; Mathur et al. 1958: 104; Schedl 1975a. (**tx**) Beeson 1939: 291.

***longicollis* (Eggers)** 1927b: 397 (*Thamnurgides*). Holotype ♀; Deutsch Neu Guinea; USNM, Washington.
Distribution: New Guinea.
References: (**ds**) Murayama 1957c: 630. (**tx**) Anderson, W. H. & Anderson 1971: 18; Eggers 1927b: 397–398; Murayama 1957c: 630.

***longior* (Eggers)** 1927c: 83 (*Poecilips*). Holotype ♀; Philippinen: Luzon, Provinz Mountain, Balbalon; USNM, Washington.
Distribution: Asia (Fujian, Xizang [Tibet], Yunnan in China/ Assam, Bengal, Nicobar Islands, Tamil Nadu, Uttar Pradesh in India/ Malaya/ Sri Lanka/ Thailand/ Vietnam), Indonesia (Borneo, Java), Philippine Islands.
Hosts: *Acacia pennata, Amoora spectabilis, Artocarpus* spp., *Butea frondora, Campnosperma auriculata, Canarium* sp., *Castinopsis* sp., *Dipterocarpus zeylanicus, Ficus roxburghii, Macaranga denticulata, Myristica dactiloides, Pterospermum heyneanum, Shorea gysbertsiana, S. leprosula, Spondias mangifera, Terminalia tomentosa, Tristania* sp.
Notes: (3) Schedl 1972p: 151 (*silvestris* Beeson, nomen nudum, *apicatus* Beeson, nomen nudum, are synonyms).
References: (**ec**) Beaver 1979b: 298. (**ds**) Beaver & Browne 1975: 294, 1978: 595; Browne 1961c: 97, 1962c: 201, 1965a: 188, 1980a: 372; Schedl 1959a: 489, 1966b: 35, 1971c: 362, 1971f: 148, 1973c: 377. (**tx**) Anderson, W. H. & Anderson 1971: 18; Eggers 1927c: 83, 1941b: 222; Nobuchi 1983: 301; Schedl 1942d: 3, 1950g: 895, 1958b: 100, 1959a: 489, 1972p: 151, 1979c: 141.

oblongus Eggers 1927c: 83 (*Poecilips*). Lectotype ♀; Philippinen: Luzon, Mount Polis; USNM, Washington, designated by Anderson & Anderson 1971: 22. Synonymy: Wood 1989: 171.
References: (**hb**) Kalshoven 1958b: 177. (**ds**) Murayama 1957c: 588, 626; Schedl 1966b: 36. (**tx**) Anderson, W. H. & Anderson 1971: 22; Eggers 1926b, 1927c: 83; Murayama 1957c: 588, 626; Nobuchi 1983: 301; Schedl 1942a: 178, 1942d: 3, 24, 1951i: 50, 1972p: 150, 1979c: 174; Wood, S. L. 1989: 171.

linearis Eggers 1941b: 222 (*Poecilips*). Syntypes ♀; Fukien (Kwangtseh); Alexander Konig Museum, Bonn. Synonymy: Schedl 1972p: 150.
References: (**ds**) Browne 1980c: 483; Schedl 1975a. (**tx**) Eggers 1941b: 222; Schedl 1951i: 41, 1972p: 150, 1979c: 139.

nitidipennis Schedl 1950c: 896 (*Poecilips*). Holotype ♀; Java, W. Tjampea, 600 m; Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 171.
References: (**hb**) Browne 1961c: 97. (**ds**) Browne 1961c: 97, 1970: 541, 1980a: 372, 1985a: 190; Ohno, Yoshioka, et al. 1988a: 92, 1989: 60; Schedl 1971c: 369. (**tx**) Schedl 1950g: 896, 1979c: 169; Wood, S. L. 1989: 171.

apicatus Schedl 1971c: 372 (*Poecilips*). Holotype ♀; India: Bengal, Samsingh Kalimpong, 1800 m; Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 171.
Notes: (3) Beeson 1941: 292 (*apicatus*, nomen nudum, is this species).
References: (**cn**) Roonwal 1954: 33. (**ds**) Beeson 1961: 292; Roonwal 1954: 33. (**tx**) Schedl 1971c: 372–373, 1979c: 23; Wood, S. L. 1989: 171.

***luzonicus* (Schedl)** 1943b: 41 (*Dryocoetes*). Holotype ♀; Mt. Makiling, Laguna, Luzon, Philippinen; Schedl Collection in NHMW, Wien.
Distribution: Philippine Islands (Luzon).
Notes: (1) Wood examined the holotype and referred it to *Coccotrypes* (Wood 1981 notes).
References: (**ds**) Murayama 1957c: 608; Schedl 1966b: 41. (**tx**) Murayama 1957c: 608; Nobuchi 1983: 301; Schedl 1943b: 41, 1979c: 143.

***magnus* Beeson** 1939: 283. Syntypes ♀; Burma: Myitkyina; FRI, Dehra Dun.
Distribution: Asia (Burma).
Hosts: *Arenga pinnata, A. saccharifera.*
Notes: (3) Syntypes of this taxon are virtually identical with *dactyliperda* except the size is significantly larger (Wood 1981 notes).
References: (**cn**) Mathur, Singh, & Lal 1958: 10, 95; Roonwal 1954: 83; Souphieff & Scherbinovskaja 1937: 88. (**ds**) Beeson 1961: 286; Kleine 1934a: 157; Mathur, Singh, & Lal 1958: 10, 95; Roonwal 1954: 83; Souphieff & Scherbinovskaja 1937: 88. (**tx**) Beeson 1939: 283, 302; Eggers 1936d: 626; Schedl 1938e: 10, 1948i: 118, 1979c: 145.

***malgasicus* (Schedl)** 1961e: 136 (*Poecilips*). Holotype ♀; Madagascar; IRSM, Madagascar.
Distribution: Madagascar.
Hosts: *Eugenia jambolana.*
References: (**ds**) Schedl 1977a: 100. (**tx**) Schedl 1961e: 136, 1977a: 99–100, 1979c: 147.

***marginatus* (Browne)** 1979: 595 (*Poecilips*). Holotype ♀; Malaysia: Penang, Muka Head; BMNH, London.
Distribution: Asia (Malaya).
Hosts: *Artocarpus elastica, A. scortechini, Campnosperma auriculata.*
References: (**tx**) Browne 1979: 595.

***medius* (Eggers)** 1927c: 84 (*Poecilips*). Syntypes ♀; Philippinen: Luzon, Provinz Gamarines sur, Mount Isarog; Eggers Collection, 1 syntype in NHMW, Wien.
Distribution: Asia (Malaya/ Thailand), Fiji, Philippine Islands, Samoa.
Hosts: *Artocarpus* spp., *Campnosperma auriculata, Elaeocarpus petiolatus, Ficus* spp., *Gonystylus confusus, Intsia palembanica, Macaranga giganea, Pinus* sp., *Podocarpus indicus, Theobroma cacao.*
References: (**ec**) Beaver 1979b: 298. (**hb**) Beaver 1979b: 298, 1987a: 16. (**ds**) Beaver 1976b: 537, 1987a: 16; Beaver & Browne 1978: 596; Browne 1949b, 1961c: 93, 1980d: 492; Schedl 1966b: 35. (**tx**) Browne 1949b; Eggers 1927c: 84; Nobuchi 1983: 301; Schedl 1938e: 10, 1942a: 170, 1953c: 289, 1979c: 150.

***minimus* (Schedl)** 1955b: 291 (*Poecilips*). Holotype ♀; Neu-Guinea, Mt. Hanseman, Astrolobe Bay; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**ds**) Murayama 1957c: 630; Schedl 1975i: 346. (**tx**) Murayama 1957c: 630; Schedl 1955b: 280, 291, 1979c: 154.

***minutissimus* (Schedl)** 1955b: 292 (*Poecilips*). Holotype ♀; Neu-Guinea, Erima Astrolobe Bay; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**ds**) Murayama 1957c: 630; Schedl 1962i: 72, 1975i: 346. (**tx**) Murayama 1957c: 630; Schedl 1955b: 280, 292, 1979c: 156.

***minutus* Schedl** 1975i: 347. New Britain, Rabaul, Keravat; NHMB, Budapest.
Distribution: New Britain Island.
References: (**tx**) Schedl 1975i: 347.

***mjoebergi* (Schedl)** 1971c: 373 (*Poecilips*). Holotype ♀; O. Borneo, Mt. Tibang, 1400 m; NHR, Stockholm.
Distribution: Indonesia (Borneo).
References: (**tx**) Schedl 1971c: 373–374.

***monoceros* (Beeson)** 1939: 291 (*Thamnurgides*). Syntypes, ♀; Bengal, Lakhimpur division, Dihing reserve; FRI, Dehra Dun.
Distribution: Asia (Bengal in India).
Hosts: *Dipterocarpus pilosus, Mesua ferrea.*
References: (**cn**) Mathur, Singh, & Lal 1958: 40, 104. (**ds**) Beeson 1961: 300; Mathur, Singh, & Lal 1958: 40, 104. (**tx**) Beeson 1939: 291–292, 305.

***morokensis* (Eggers)** 1923a: 151 (*Dendrurgus*). Holotype ♀; Moroka, Sudost-Neu Guinea; MCG, Genova.
Distribution: New Guinea.
References: (**ds**) Murayama 1957c: 630. (**tx**) Eggers 1923a: 151; Murayama 1957c: 630.

***myristicae* (Roepke)** 1919b: 23 (*Thamnurgides*). Syntypes ♀; Java; not located.
Figures: Weidner 1963: 537.
Distribution: Asia (Karnataka in India/ Malaya/ Sri Lanka/ Thailand/ Vietnam), Australia, Fiji, Hawaii, Indonesia (Celebes, Java, Sumatra), New Guinea, Philippine Islands, Samoan Islands.
Hosts: *Litsea polyantha, Myristica argentea, M. fragrans, M. macrothyrsa.*
Notes: (3) Schedl 1954a: 147 (*insulindicus* Eggers, nomen nudum, synonymy), 1961f: 90 (described male).
References: (**cn**) Kalshoven 1932: 246, 1935b: 47, 1951: 855; Mathur, Singh, & Lal 1958: 63, 104; Weidner 1963: 536. (**hb**) Beaver & Browne 1978: 596; Beeson 1929: 228; Browne 1961c: 90; Kalshoven 1951: 855, 1958b: 179; Roepke 1919b: 23. (**ds**) Beaver & Browne 1978: 596; Beeson 1929: 228, 1938b, 1939, 1961: 300; Browne 1961c: 90, 1970: 541; Dale 1959: 13; Kalshoven 1932: 246, 1935a: 14, 1935b: 47; Kleine 1934a: 157; Mathur, Singh, & Lal 1958: 63, 104; Murayama 1936b: 115; Schedl 1959a: 489, 1966b: 35, 1971a: 281, 1975j: 293. (**tx**) Anderson, W. H. & Anderson 1971: 33; Beeson 1929: 228, 1938b: 220, 1939; Eggers 1927c: 81, 1936d: 630; Nobuchi 1983: 301; Roepke 1919b: 23–29; Schedl 1938e: 9–10, 1942c: 180, 1942d: 3, 1951k: 135, 1953b: 123, 1954a: 138–139, 147, 1958b: 100, 1959a: 489, 1961f: 90, 1961j: 351; Weidner 1963: 537.

sundaensis Eggers 1923a: 145 (*Dendrurgus*). Lectotype ♀; Tambang Salida (Ost Sumatra); USNM, Washington, designated by Anderson & Anderson 1971: 33. Synonymy: Schedl 1938e: 10.
References: (**ds**) Beeson 1938b: 290; Kalshoven 1938: 179, Schedl 1937f: 15. (**tx**) Anderson, W. H. & Anderson 1971: 33; Beeson 1929: 228; Eggers 1923a: 145, 148, 1927c: 80, 1936d: 630; Schedl 1938e: 10, 1942d: 3, 1948i: 113, 1959a: 491, 1962k: 715.

curtus Eggers 1927c: 80 (*Thamnurgides*). Lectotype ♀; Philippinen: Mindanao, Agusan River; USNM, Washington, designated by Anderson & Anderson 1971: 11. Synonymy: Schedl 1966b: 36, Beaver & Browne 1978: 596.
Notes: (1) Schedl 1938e: 10 (to *Coccotrypes*).
References: (**tx**) Anderson, W. H. & Anderson 1971: 10; Beaver & Browne 1978: 596; Eggers 1927c: 80; Schedl 1938e: 10, 1950d: 26, 1966b: 36.

calapanus Eggers 1927c: 81 (*Thamnurgides*). Holotype ♀; Philippinen: Mindoro, Calapan;

Eggers Collection, in NHMW, Wien. Synonymy: Schedl 1966b: 36, Browne 1979c: 596.
References: (**tx**) Beaver & Browne 1978: 596; Eggers 1927c: 81; Schedl 1966b: 36, 1979c: 49–50.

masoni Beeson 1939: 292 (*Thamnurgides*). Syntypes ♀; Coorg: Bhagamandala, Mundrote; FRI, Dehra Dun. Synonymy: Wood 1989: 171.
References: (**cn**) Mathur, Singh, & Lal 1958: 57, 104. (**ds**) Beeson 1961: 300; Mathur, Singh, & Lal 1958: 57, 104. (**tx**) Beeson 1939: 292; Wood, S. L. 1989: 171.

***naidaijinensis* (Murayama)** 1957c: 605 (*Dryocoetes*). Holotype ♂; Mt. Naidaijin, Kumamoto pref., Japan; USNM, Washington.
Distribution: Asia (Japan).
Hosts: *Prunus jamasakura*, *P.* sp., *Zelkowa serrata*.
References: (**ds**) Murayama 1957c: 588, 604. (**tx**) Murayama 1957c: 588, 604–605; Nobuchi 1985c: 22.

***niger* Eggers** 1927a: 180. Lectotype ♀; Ostafrika (Daressalam); Eggers Collection, in NHMW, Wien, designated by Schedl 1979c: 166.
Distribution: Africa (Tanzania), Madagascar.
References: (**ds**) Murayama 1957: 613; Schedl 1977b: 90. (**tx**) Eggers 1927a: 180–181, 1929b: 112, 1940b: 103; Nunberg 1969a: 382; Schedl 1961k: 710–711, 1977b: 90, 1979c: 166.

***nigripes* Eggers** 1924: 105. Holotype ♀; Kasai (Ipamu) im Congostaat; MRCB, Tervuren.
Distribution: Africa (Zaire).
Hosts: *Elaeis guineensis*, *Sclerosperma mannii*.
References: (**bv**) Schedl 1960f: 12. (**cn**) Ghesquiere 1933a: 33, 35; Kemner 1924: 1–33; Mayne & Donis 1951: 331; Souphieff & Scherbinovskaja 1937: 89. (**ec**) Mayne & Donis 1951: 331. (**ds**) Ghesquiere 1933a: 33, 35, 1933b: 776, 783, 786; Lepesme et al. 1948: 636–637; Murayama 1957: 613; Schedl 1960f: 12, 1961k: 711; Schouteden 1927: 114–116; Souphieff & Scherbinovskaja 1937: 89. (**tx**) Eggers 1924: 105, 1927a: 181, 198; Schedl 1961k: 711, 1979c: 167.

***nigronitens* (Schedl)** 1975a: 455 (*Poecilips*). Holotype ♀; India, Andaman Islands, Strait Island; Eggers Collection, in NHMW, Wien.
Distribution: Asia (Andaman Islands in India).
References: (**tx**) Schedl 1975a: 455, 1979c: 168.

***nitidus* (Eggers)** 1923a: 147 (*Dendrurgus*). Holotype ♀; Sumatra; Eggers Collection, in NHMW, Wien.
Distribution: Asia (Malaya), Indonesia (Borneo, Java, Sumatra), Fiji, New Guinea.
Hosts: *Dipterocarpus kerrii*, *Livistona conchinchinensis*.
References: (**ds**) Browne 1961c: 99, 1983b: 77; Schedl 1971c: 369, 1975a. (**tx**) Beeson 1939: 239; Eggers 1923a: 147–148, 1936e: 86–87; Schedl 1940b: 434, 1942a: 170, 1962q: 493.

insularis Eggers 1939d: 223 (*Thamnurgides*). Holotype ♀; Fiji Inseln (Lami); Eggers Collection, in NHMW, Wien. Synonymy: Beaver 1991: 88.
References: (**ds**) Browne 1974a: 65; Murayama 1957c: 630. (**tx**) Anderson, W. H. & Anderson 1971: 15; Beaver 1991: 88; Eggers 1939d: 223; Murayama 1957c: 630; Schedl 1950f: 39, 1960b: 162, 1979c: 125.

aterrimus Schedl 1953c: 298 (*Poecilips*). Lectotype ♀; Malaya, Selangor, Pt. Sinham; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 30. Synonymy: Schedl 1962q: 493, Wood 1989: 171.
References: (**hb**) Browne 1961c: 98; Kalshoven 1958b: 175. (**ds**) Browne 1961a: 304, 1961c: 98; Nunberg 1961b: 609. (**tx**) Schedl 1953c: 298, 1962q: 493, 1979c: 30; Wood, S. L. 1989: 171.

***norimasanus* (Murayama)** 1954b: 192 (*Dryocoetes*). Holotype, sex?; Norimasa, Gifu pref., Japan; USNM, Washington.
Distribution: Asia (Honshu in Japan.
Hosts: *Abies firma*.
References: (**ds**) Murayama 1954b: 173, 192, 1957c: 588, 600. (**tx**) Murayama 1954b: 173, 192, 1957c: 588, 600; Nobuchi 1985c: 22.

***nubilus* (Blandford)** 1894d: 95 (*Dryocoetes*). Syntypes 10 ♀; Kiga, Suyama, Japan; BMNH, London.
Figures: Nobuchi 1966d:pl. 3.
Distribution: Asia (Burma/ Sichuan, Xizang [Tibet] in China/ Bengal, Madhya Pradesh, Tamil Nadu, Uttar Pradesh in India/ Japan/ Korea/ Taiwan), Indonesia (Java), Mauritius.
Hosts: *Abies* sp., *Acacia pennata*, *Anogeissus acuminata*, *Bucklandia populnea*, *Castanopsis hystrix*, *Dalbergia sissoo*, *Eugenia jambolana*, *Grewia tiliaefolia*, *G. vestita*, *Juglans regia*, *Lannea grandis*, *Landera pulcherrime*, *Macaranga denticulata*, *Mallotus philippinensis*, *Odina wodier*, *Pinus roxburghii*, *Shorea robusta*, *Symingtonia populnea*, *Terminalia tomentosa*, *Turpinia nepalensis*.
References: (**cn**) Shiraki 1952. (**ds**) Cho 1957, 1963; Choo 1983: 78; Choo & Woo 1985: 165; Hagedorn 1910d: 67; Kleine 1914b: 258; Ko 1969: 281; Murayama 1929b: 2, 1930b: 17, 1931a: 40, 1937b: 375, 1949a: 12, 1949c: 101, 1951c: 4, 1953a: 15, 1953c: 154, 1954b: 173, 1955: 99, 104, 1957c: 588, 626; Nobuchi 1966d: 21, 1967: 20. (**tx**) Beeson 1939: 300; Blandford 1894d: 95; Choo 1983: 78; Hagedorn 1910a: 96; Murayama 1930b: 17, 21, 31, 1931a: 40, 1937b: 375, 1953a: 15, 1954b: 173, 1955: 99, 104, 1957c: 588, 626; Niisima 1909: 152; Nobuchi 1966d: 21, pl. 3; Schedl 1934f: 1642, 1952k: 160.

parvus Beeson 1939: 297 (*Thamnurgides*). Holotype ♀; United Provinces: Dehra Dun Division, Lachiwala, 2000 feet; FRI, Dehra Dun,

preoccupied by Sampson. Synonymy: Wood 1989: 171.

References: (**cn**) Mathur & Singh 1960b: 29, 1961a: 45, 1961b: 41; Roonwal 1954: 25. (**ds**) Beeson 1961: 300; Mathur & Singh 1960b: 29, 1961a: 45, 1961b: 41; Roonwal 1954: 25; Schedl 1972a: 144. (**tx**) Beeson 1939: 297; Wood, S. L. 1989: 171.

himalayensis Beeson 1939: 299 (*Thamnurgides*). Holotype ♀; Bengal: Darjeeling division, Rangirum, India; FRI, Dehra Dun. Synonymy: Wood 1989: 171.

References: (**cn**) Mathur & Singh 1960b: 80, 1961a: 82, 1961b: 62. (**ds**) Beeson 1961: 300; Bhasin, Roonwal, & Singh 1958; Mathur & Singh 1960b: 80, 1961a: 82, 1961b: 62. (**tx**) Beeson 1939: 299–300, 304; Wood, S. L. 1989: 171.

corticus Beeson 1939: 298 (*Thamnurgides*). Holotype ♀; United Provinces: Dehra Dun division, Jhahjra; FRI, Dehra Dun. Synonymy: Wood 1989: 171.

References: (**cn**) Mathur & Singh 1961a: 45, 1961b: 41. (**ds**) Beeson 1939: 298, 1961: 300; Mathur & Singh 1961a: 45, 1961b: 41. (**tx**) Beeson 1939: 298; Schedl 1972q: 257; Wood, S. L. 1989: 171.

brevipilosus Beeson 1939: 298 (*Thamnurgides*). Holotype ♀; Bengal: Darjeeling division, Rangirum; FRI, Dehra Dun. Synonymy: Wood 1989: 171.

References: (**cn**) Mathur & Singh 1960b: 80, 1961a: 82. (**ds**) Beeson 1961: 299–300; Mathur & Singh 1960b: 80, 1961a: 82; Murayama 1957c: 611; Schedl 1963f: 55, 1973d: 163, 1976a: 51. (**tx**) Beeson 1939: 298–299, 302; Murayama 1957c: 611; Schedl 1951k: 148–149, 1963f: 56, 1979c: 46; Wood, S. L. 1989: 171.

mauritianus Browne 1970: 569 (*Poecilips*). Holotype ♀; Mauritius: Curepipe; BMNH, London. Synonymy: Schedl 1972q: 257, Wood 1989: 171.

References: (**tx**) Browne 1970: 569; Schedl 1972q: 257; Wood, S. L. 1989: 171.

***obtusicollis* (Schedl)** 1975a: 455 (*Poecilips*). Holotype ♀; Malaya: Selangor; Schedl Collection in NHMW, Wien.

Distribution: Asia (Malaya).

References: (**ds**) Schedl 1975a: 455, 1979c: 175.

***omissus* Schedl** 1979g: 101. Holotype ♀; Papua New Guinea, Bulolo, Morobe District, Upper Manki L. A.; Schedl Collection in NHMW, Wien.

Distribution: New Guinea.

References: (**tx**) Schedl 1979g: 101.

***palmarum* Eggers** 1933b: 8. Holotype ♀; Franz. Guayana (Haut-Carsevenne); MNHN, Paris.

Figures: Pedrosa-Macedo & Schonherr 1985: 18.

Distribution: South America (Brazil/ Cayenne/ Peru).

Hosts: Palm fruits.

References: (**cn**) Souphieff & Scherbinovskaja 1937: 89. (**ds**) Blackwelder 1947: 778; Lepesme et al. 1948: 639; Murayama 1957c: 611; Nunberg 1972b: 191; Pedrosa-Macedo & Schonherr 1985: 18; Schedl 1960a: 77, 1966f: 85, 1970e, 1972g: 43, 1976a: 51; Souphieff & Scherbinovskaja 1937: 89. (**tx**) Eggers 1933b: 2, 8; Murayama 1957c: 611; Pedrosa-Macedo & Schonherr 1985: 18; Schedl 1948i: 116, 1957a: 193, 1960b: 163, 1979c: 182.

***papuanus* (Eggers)** 1923a: 148 (*Dendrurgus*). Lectotype ♀; Andai auf Neu Guinea; Eggers Collection, in NHMW, Wien, designated by Schedl 1979c: 183.

Distribution: Asia (Assam, Bengal, Punjab, Uttar Pradesh in India/ Malaya/ Vietnam), Indonesia (Borneo, Sumatra), New Guinea, Philippine Islands.

Hosts: *Dipterocarpus pilosus, Eugeissona insignis, Eugenia formosa, Mallotus* sp., *Melicope* sp., *Mesua ferrea, Myristica* sp., *Nephilium lichi, Quercus spicata, Terminalia myriocarpa*.

Notes: (3) Schedl 1966b: 36 (*sumatranus* Eggers, nomen nudum, synonymy).

References: (**cn**) Browne 1968: 578. (**hb**) Beaver & Browne 1978: 596; Browne 1968: 578. (**ds**) Beaver & Browne 1978: 596; Browne 1961a: 304, 1961c: 99, 1966: 246, 1968b: 578, 1980a: 370, 1980c: 484, 1986c: 661; Murayama 1957c: 630; Ohno, Yoshioka, et al. 1988a: 92; Schedl 1961c: 70, 1966b: 36, 1968e: 262, 1975e: 449, 1975i: 346. (**tx**) Beeson 1939: 287; Eggers 1923a: 147–148; Murayama 1957c: 630; Nobuchi 1983: 301, Schedl 1942c: 179, 1958b: 100, 1958h: 498, 1960h: 105, 1966b: 36, 1979c: 183.

glandis Beeson 1939: 287 (*Thamnurgides*). Holotype ♀; Bengal: Kalimpong division, Samsing; FRI, Dehra Dun. Synonymy: Schedl 1960i: 105.

References: (**cn**) Mathur & Singh 1961b: 34; Mathur, Singh, & Lal 1958: 40, 104. (**ds**) Beeson 1961: 300; Mathur & Singh 1961b: 34; Mathur, Singh, & Lal 1958: 40, 104. (**tx**) Beeson 1939: 287, 304; Schedl 1960i: 105.

rubidus Beeson 1939: 290 (*Thamnurgides*). Holotype ♀; Bengal: Kalimpong division, Samsing 1,800 feet; FRI, Dehra Dun. Synonymy: Schedl 1974f: 334, Wood 1989: 171.

References: (**cn**) Mathur, Singh, & Lal 1958: 40, 45, 61, 104. (**ds**) Beaver & Browne 1978: 596; Beeson 1961: 300; Mathur, Singh, & Lal 1958: 40, 45, 61, 104. (**tx**) Beeson 1939: 290, 306; Schedl 1974f: 334; Wood, S. L. 1989: 171.

decipiens Browne 1972b: 21 (*Poecilips*). Holotype ♀; Malaya: Kepong Forest Research Institute insectary; BMNH, London. Synonymy: Schedl 1974f: 334.

References: (**tx**) Browne 1972b: 21; Schedl 1974f: 334.

***parvus* Sampson** 1914: 391. Syntypes 2 ♀; Seychelles Isl. Mahe: high forest of Morne Blanc and Pilot, Praslin: Cotes d'Or Estate, Coco-de-mer forest; BMNH, London.
Distribution: Africa (Seychelles Islands).
References: (**ds**) Beaver 1987a: 17; Schedl 1969d: 11. (**tx**) Sampson 1914: 391.

***perditor* Blandford** 1894d: 99. Syntypes 5 ♀; Nagasaki, Japan; BMNH, London.
Distribution: Asia ("China"/ Japan), Micronesia (Koror in Palau Islands).
References: (**cn**) Leefmans 1923: 1–94; Souphieff & Scherbinovskaja 1937: 89; Vayssiere 1923: 11. (**ds**) Blandford 1894c; Hagedorn 1910d: 68; Hargreaves 1927: 113–128, 1937: 509, 520; Kleine 1913b: 138, 1914b: 258, 1934a: 157; Lepesme et al. 1948: 638; Murayama 1954b: 202, 1957c: 588, 611; Souphieff & Scherbinovskaja 1937: 89; Vayssiere 1923: 111. (**tx**) Blandford 1894d: 99; Eggers 1929b: 112; Hagedorn 1910a: 94; Murayama 1954b: 202, 1957c: 588, 611; Schedl 1934f: 1643.

***petioli* (Browne)** *in* Beaver & Browne 1978: 596 (*Poecilips*). Holotype ♀; Malaysia: Penang, Muka Head; BMNH, London.
Figures: Beaver & Browne 1978: 576.
Distribution: Asia (Malaya).
Hosts: *Artocarpus scortechini* (leafstalks), *Ficus bracteata, F. xylophylla, F.* spp.
References: (**ec**) Beaver 1979b: 298. (**hb**) Beaver 1979b: 298; Beaver & Browne 1978: 596. (**tx**) Beaver & Browne 1978: 576.

***politus* (Browne)** 1970: 568 (*Poecilips*). Holotype ♀; Sarawak: Mount Penrissen, 4350 ft.; BMNH, London.
Distribution: Indonesia (Sarawak in Borneo).
References: (**ds**) Schedl 1971c: 368. (**tx**) Browne 1970: 568.

***priesneri* Schedl** 1950d: 25. Lectotype ♀; Gold Coast; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 198.
Distribution: Africa (Ghana).
Hosts: *Myristica fragrans*.
References: (**bv**) Schedl 1960f: 23. (**ds**) Schedl 1960f: 23. (**tx**) Schedl 1950d: 16, 25, 1954e: 47, 1960f: 23, 63, 1961k: 711–712, 1979c: 198.

***pterydophytae* (Schedl)** 1968e: 266 (*Poecilips*). Holotype ♀; New Guinea, Bulolo, Rifle Range; CSIRO, Canberra.
Figures: Gray 1970: 581.
Distribution: New Guinea.
Hosts: *Pteridium aquilinum*.
References: (**bv**) Gray, B. 1974c. (**ec**) Gray, B. 1970: 578–585. (**hb**) Gray, B. 1970: 578–585, 1974c. (**ds**) Gray, B. 1970: 578–585. (**tx**) Gray, B. 1970: 578–585; Schedl 1968e: 266, 1979c: 202.

***pubescens* Schedl** 1948i: 119. Holotype ♀; Cuba, Sierra Bonilla; Schedl Collection in NHMW, Wien.
Distribution: Antilles Islands (Cuba).
Notes: (3) A possible synonym of *carpophagus*.
References: (**ds**) Murayama 1957c: 611. (**tx**) Murayama 1957c: 611; Schedl 1948i: 119, 1979c: 202.

***punctatus* (Eggers)** 1927c: 82 (*Thamnurgides*). Holotype ♀; Philippinen: Mindoro, Subaan; Eggers Collection, in NHMW, Wien.
Distribution: Philippine Islands (Mindoro).
References: (**ds**) Nunberg 1961b: 609; Schedl 1966b: 37. (**tx**) Eggers 1927b: 399, 1927c: 82, 85; Schedl 1966b: 34, 1979c: 205.

***queenslandi* (Schedl)** 1942c: 180 (*Poecilips*). Lectotype ♀; Australien, Queensland, Kuranda; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 209.
Distribution: Australia (Queensland), New Guinea.
References: (**ds**) Murayama 1957c: 630; Schedl 1964c: 305, 1975i: 346. (**tx**) Murayama 1957c: 630; Schedl 1942c: 180, 1979c: 209.

***recticollis* (Schedl)** 1970d: 235 (*Poecilips*). Holotype ♀; Madagascar, Perinet; MNHN, Paris.
Distribution: Madagascar.
Hosts: *Pinus khasya*.
References: (**tx**) Schedl 1970d: 235–236, 1977b: 100, 1979c: 210.

***regularis* (Schedl)** 1955b: 292 (*Poecilips*). Holotype ♀; Neu-Guinea, Sattelberg; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**ds**) Murayama 1957c: 630. (**tx**) Murayama 1957c: 630; Schedl 1955b: 280, 292.

***rhizophorae* (Hopkins)** 1915b: 48 (*Spermatoplex*). Holotype ♀; Miami, Florida; USNM, Washington.
Figures: Woodruff 1970: 1–2 (adult).
Distribution: Asia (Burma), Galapagos Islands (Albermarle), Indonesia (Borneo, Java, Sumatra), North America (Veracruz in Mexico/ Florida in USA).
Hosts: *Rhizophora mangle, R. mucronata,* rare in *Acacia* sp., *Dipterocarpus* sp., *Lansium domesticum, Nephelium lappaceum, L.* sp.
References: (**cn**) Anonymous 1970h; Doane et al. 1936; Miller, J. W. 1979: 8; Woodruff 1970. (**ec**) Onuf, Teal, & Valiela 1977; Woodruff 1970. (**hb**) Atkinson & Equihua 1985b: 236; Chamberlin 1939: 319; Doane et al. 1936; Kalshoven 1958b: 175; Rabinowitz 1977; Wood, S. L. 1982b: 734; Woodruff 1970. (**ds**) Anonymous 1970h; Atkinson & Equihua 1985b: 236; Blatchley & Leng 1916: 610; Browne 1961c: 97; Chamberlin 1939: 319; Kleine 1934a: 158; Schedl 1959a: 489; Wood, S. L. 1977a: 69, 1982b: 734; Woodruff 1970. (**tx**) Beeson 1939: 297; Blatchley & Leng 1916: 610; Chamberlin 1939: 319; Eggers 1923a: 149–151, 1925: 157, 1927b: 390; Hopkins 1915b: 48; Schedl 1952k: 160, 1953c: 289, 1958b: 100, 1959a: 489, 1961k: 718, 1979c: 211; Wood, S. L. 1982b: 734; Woodruff 1970.
rhizophorae Eggers 1923: 149 (*Dendrurgus*).

Lectotype ♀; Insel Saleyer und Moeara Antjol (Sumatra); Eggers Collection, in NHMW, Wien, designated by Schedl 1979c: 211, preoccupied by Hopkins 1915. Synonymy: Schedl 1952k: 160.

References: (**cn**) Mathur, Singh, & Lal 1958: 5. (**ds**) Browne 1961c: 98; Mathur, Singh, & Lal 1958: 5; Schedl 1964g: 241, 1971c: 364, 1971f: 148, 1975e: 449. (**tx**) Eggers 1923: 149; Schedl 1938e: 10, 1952k: 160, 1979c: 211.

nephelii Eggers 1936e: 84 (*Thamnurgides*). Holotype ♀; Java (Buitenzorg); BMNH, London. Synonymy: Kalshoven 1958b: 176.

Notes: (3) Schedl 1979c: 125 (*Thamnurgides punctipennis* Eggers, nomen nudum, synonymy).

References: (**cn**) Mathur et al. 1958: 104; Roonwal 1954: 27. (**hb**) Browne 1961c: 98; Kalshoven 1958b: 176. (**ds**) Beeson 1961: 300; Kalshoven 1935a: 14, 1958: 176; Kleine 1934a: 164; Mathur et al. 1958: 104; Roonwal 1954: 27. (**tx**) Eggers 1936e: 84–85; Kalshoven 1958b: 176; Schedl 1938e: 10, 1939e: 329, 1953c: 289, 1958h: 498, 1964g: 241, 1979c: 125.

shanorum Beeson 1939: 296 (*Thamnurgides*). Holotype ♀; Burma: Northern Shan States, Maymyo; FRI, Dehra Dun. Synonymy: Wood 1989: 171.

References: (**ds**) Beeson 1961: 300. (**tx**) Beeson 1939: 296–297, 306; Wood, S. L. 1989: 171.

***robustulus* Wood** 1989: 178. Holotype ♀; Ceylon, Matale, 400 m; MHNG, Geneve, automatic.

Distribution: Asia (Malaya/ Sri Lanka), New Guinea.

References: (**ds**) Schedl 1973c: 377, 1975i: 346, 1975j: 293. (**tx**) Wood, S. L. 1989: 178.

robustus Schedl 1972j: 227 (*Poecilips*). Holotype ♀; Ceylon (Matale, 400 m; MHNG, Geneve, preoccupied by Eichhoff 1878.

References: (**tx**) Schedl 1972j: 227, 1979c: 213; Wood, S. L. 1989: 178.

***robustus* Eichhoff** 1878b: 313. Syntypes ♀; Cuba; Hamburg Museum, lost.

Distribution: Antilles Islands (Cuba/ Puerto Rico), North America (Florida).

Hosts: *Eutrepe globosa* seeds.

References: (**hb**) Chamberlin 1939: 319; Wood, S. L. 1982b: 736. (**ds**) Atkinson et al. 1991: 159; Blackwelder 1947: 778; Chamberlin 1939: 319; Kleine 1914b: 378; Leng & Mutchler 1917: 220; Schedl 1975a; Wood, S. L. 1982b: 736. (**tx**) Bright 1985c: 173; Chamberlin 1939: 319; Eichhoff 1878a: 391, 1878b: 313; Hagedorn 1910d: 45; Hopkins 1915b: 45; McNamara 1984: 758; Schedl 1948i: 119, 1972j: 227; Wood, S. L. 1975b: 392, 1982b: 736.

cylindricus Schedl 1948i: 116. Holotype ♀; Crucos, Cuba; Schedl Collection in NHMW, Wien. Synonymy: Wood 1975b: 393.

References: (**ds**) Murayama 1957c: 611. (**tx**) Murayama 1957c: 611; Schedl 1948i: 116, 1979c: 73; Wood, S. L. 1975b: 392.

***rotundicollis* (Eggers)** 1927a: 186 (*Poecilips*). Holotype ♀; Belg. Congo: Sankuru; MRCB, Tervuren.

Distribution: Africa (Angola/ Cameroon/ Equatorial Guinea/ Ivory Coast/ Zaire), Madagascar.

Hosts: *Chrysophyllum africanum, Homalium* sp., *Klainedoxa gabonensis, Oxystigma oxyphyllum, Pachyclasma* sp., *Pentadesma butyracea, Ricinodendron heudelotii, Staudia gabonensis.*

References: (**cn**) Ghesquiere 1933a; Mayne & Donis 1951: 332. (**ec**) Mayne & Donis 1951: 332. (**ds**) Ghesquiere 1933a; Kleine 1934a: 164; Murayama 1957c: 631; Schedl 1939e: 329, 1959a: 490, 1960e: 172, 1971g: 191. (**tx**) Eggers 1927a: 186; Murayama 1957c: 631; Schedl 1938e: 10, 1955f: 258, 1957d: 13, 1979c: 213.

congonus Eggers 1927a: 187 (*Poecilips*). Holotype ♀; Belg.-Congo, Sankuru; MRCB, Tervuren, preoccupied by Eggers 1924. Synonymy: Schedl 1957d: 13, 1961: 719.

References: (**bv**) Schedl 1960f: 12. (**cn**) Rees 1963b. (**ec**) Rees 1963b; Schedl 1961k: 719. (**hb**) Loyttyniemi, Beaver, & Loyttyniemi 1984; Schedl 1960f: 49. (**ds**) Beaver & Loyttyniemi 1985a: 67; Browne 1973b: 687, 1975b: 394; Ferreira 1965: 1116; Mayne & Donis 1962: 309; Schedl 1959p: 17, 1960h: 12, 1961k: 691, 1962k: 1077, 1964e: 68, 1964j: 41, 1965e: 352, 1967e: 212, 1972: 281, 1977d: 278. (**tx**) Browne 1973b: 687; Eggers 1927a: 187; Nunberg 1965b: 22; Schedl 1957d: 13, 1961k: 719, 1979c: 62.

rugulosus Eggers 1932d: 294 (*Poecilips*). Holotype ♀; Congostaat (Sankuru); Eggers Collection, in NHMW, Wien. Synonymy: Schedl 1961k: 719.

References: (**ds**) Murayama 1957c: 631. (**tx**) Eggers 1932d: 294; Murayama 1957c: 631; Schedl 1957d: 13–14, 1961k: 719, 1979c: 217.

latior Eggers 1940b: 104 (*Poecilips*). Syntypes ♀; Congostaat, Yangambi; MRCB, Tervuren, 4 Eggers cotypes in NHMW, Wien. Synonymy: Schedl 1957d: 13.

References: (**ds**) Nunberg 1952: 19, 1965b: 19; Murayama 1957c: 631. (**tx**) Eggers 1940b: 104–105; Murayama 1957c: 631; Nunberg 1952: 19; Schedl 1953g: 242, 1957d: 13, 1979c: 137.

subtuberculatus Eggers 1940b: 105 (*Poecilips*). Holotype ♀; Congostaat: Eala; MRCB, Tervuren. Synonymy: Schedl 1957d: 14.

References: (**ds**) Mayne & Donis 1960: 104–105, 1962: 310; Murayama 1957c: 631. (**tx**) Eggers 1940b: 105, 107; Murayama 1957c: 631; Schedl 1951e: 38, 1954d: 870, 1957d: 14, 1961k: 720, 1979c: 245.

intermedius Eggers 1940b: 107 (*Poecilips*). Holo-

type ♀; Congostaat; MRCB, Tervuren. Synonymy: Browne 1973b: 687.

References: (**bv**) Schedl 1960f: 42. (**cn**) Mayne & Donis 1951: 332. (**ec**) Mayne & Donis 1951: 332; Schedl 1961k: 725. (**hb**) Cachan 1957: 15, 42–43; Pollet 1977; Schedl 1961k: 725. (**ds**) Mayne & Donis 1962: 309; Murayama 1957c: 631; Pollet 1977; Schedl 1960f: 42, 1961k: 725, 1979b: 415. (**tx**) Browne 1973b: 687; Eggers 1940b: 107; Murayama 1957c: 631; Schedl 1950c: 204, 1957d: 67, 1961k: 725, 1979c: 127.

***rugicollis* (Eggers)** 1925: 157 (*Thamnurgides*). Syntypes ♀; Tenasserim; 2 in Prague Museum, 1 deposited in Eggers Collection, in NHMW, Wien.

Distribution: Asia (Burma/ Fujian in China/ Malaya/ Sri Lanka/ Vietnam).

References: (**ds**) Browne 1961c: 97; Schedl 1959a: 490, 1960e: 172, 1971a: 276. (**tx**) Beeson 1939: 295–296; Eggers 1925: 153–158; Schedl 1939e: 329, 1959a: 490, 1979c: 216.

***rutschuruensis* Eggers** 1940b: 103. Holotype ♀; Congostaat, Rutshuru; MRCB, Tervuren.

Distribution: Africa (Ghana/ Somalia/ Zaire), North America (introduced: California in USA).

Hosts: *Anona museusi, Phoenix reclinata, Triplochiton scleroxylon*.

Notes: (3) California series in Wood Collection.

References: (**bv**) Schedl 1960f: 58. (**hb**) Lepesme 1947: 637. (**ds**) Schedl 1960f: 23, 58, 108, 1961k: 712; Thompson, G. H. 1963: 35. (**tx**) Eggers 1940b: 103; Murayama 1957: 613; Schedl 1954e: 50, 1961k: 712, 1979c: 217.

***salakensis* (Schedl)** 1939f: 38 (*Poecilips*). Lectotype ♀; Mount Salak, Java; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 218.

Distribution: Asia ("China"/ Andaman Islands, Assam, Bengal in India/ Sri Lanka/ Vietnam), Indonesia (Java), Philippine Islands.

Hosts: *Amoora wallichii, Artocarpus chaplaska, Gmelina arborea, Heritiera fomes, Myristica dactyloides, Terminalia bialata*.

References: (**ds**) Kalshoven 1958: 177; Schedl 1959a: 490, 1965a: 339, 1971a: 281, 1972j: 224, 1973c: 377, 1975e: 449. (**tx**) Schedl 1939f: 38, 1959a: 490, 1979c: 218.

punctatus Eggers 1927f: 85 (*Poecilips*). Syntypes ♀; Philippinen: Mindoro, Subaan; Eggers Collection, in NHMW, Wien, preoccupied by Eggers 1927.

Notes: (1) Schedl 1979c: 205 (citation of holotype invalid).

References: (**tx**) Eggers 1927b: 85; Schedl 1966b: 34, 1979c: 205.

opacifrons Beeson 1939: 294 (*Thamnurgides*). Holotype ♀; Bengal: Buxa division; FRI, Dehra Dun. Synonymy: Wood 1989: 171.

References: (**cn**) Mathur & Singh 1960b: 17, 1961b: 26; Roonwal 1954: 33, 66. (**ds**) Beeson 1939: 294, 1961: 300; Mathur & Singh 1960b: 17, 1961b: 26; Roonwal 1954: 33, 66. (**tx**) Schedl 1942a: 178, 1942d: 24; Wood, S. L. 1989: 171.

acuminatus Schedl 1966b: 34 (*Poecilips*). Syntypes ♀; Philippinen: Mindoro, Subaan; Eggers Collection, in NHMW, Wien, automatic. Synonymy: Wood 1989: 171.

References: (**ds**) Schedl 1966b: 34. (**tx**) Nobuchi 1983: 301; Schedl 1966b: 34; Wood, S. L. 1989: 171.

***sannio* (Schaufuss)** 1897: 110 (*Poecilips*). Syntypes ♀; Gabun; Hamburg Museum, lost, 1 syntype in USNM, Washington.

Figures: Schedl 1960f: 50.

Distribution: Africa (Angola/ Cameroon/ Equatorial Guinea/ Gabon/ Ghana/ Ivory Coast/ Sierra Leone/ Zaire).

Hosts: Schedl 1960f: 28–29 (40 host species reported).

Notes: (3) Schedl 1961k: 730 (*Poecilips dubius* Eggers, nomen nudum, synonymy in Schedl 1963h: 267). Schedl 1963h: 267 (*sublaevis* Eggers, nomen nudum, synonymy).

References: (**bv**) Schedl 1960f: 42. (**cn**) Ghesquiere 1933a: 34–36, 1933b: 776–777, 784; Mayne & Donis 1951: 332; Pujol 1957: 245. (**ec**) Mayne & Donis 1951: 332–333; Schedl 1961k: 728. (**hb**) Browne 1963a: 237; Jones, Roberts, & Baker 1959: 23; Lepesme 1947: 643; Roberts 1969: 126; Schedl 1961k: 728; Thompson, G. H. 1963: 60; Wichmann 1954: 517. (**ds**) Browne 1963a: 237, 1966: 247; Ferreira 1965: 1118; Ghesquiere 1933a: 34–36; Hagedorn 1910d: 77; Kleine 1913b: 145, 1914b: 312, 1934a: 164; Mayne & Donis 1962: 310; Murayama 1957c: 631; Nunberg 1952: 19, 1965b: 19; Schedl 1959p: 17, 1960f: 42, 1961j: 349, 1961k: 728, 1963f: 55, 1963h: 267, 1964e: 68, 1964j: 41, 1965e: 352, 1965g: 20, 25, 1966b: 37, 1967e: 214; Swezey 1941: 120; Thompson, G. H. 1963: 60. (**tx**) Beeson 1938: 290, 1939: 285, 298; Eggers 1927a: 185–186, 1927c: 83, 1940b: 106–107; Hagedorn 1910a: 112; Hopkins 1914: 127, 135; Murayama 1957c: 631; Nunberg 1952: 19; Schaufuss 1897: 110; Schedl 1938c: 9, 1938e: 10–11, 1939e: 345, 1941f: 112, 1942d: 3, 1954d: 870, 1954e: 50, 1955b: 292, 1955f: 258, 1957d: 14, 1959p: 18, 1960f: 50, 1961j: 349, 1961k: 728, 1963h: 267, 1964k: 217, 1965g: 20; Wood, S. L. 1966b: 28, 1973c: 174.

bambesanus Eggers 1940b: 107 (*Poecilips*). Holotype ♀; Congostaat (Bambesa); MRCB, Tervuren. Synonymy: Schedl 1957d: 13.

References: (**ds**) Murayama 1957c: 631. (**tx**) Eggers 1940b: 107; Murayama 1957c: 631; Schedl 1957d: 13, 1961k: 730, 1963h: 267, 1979c: 33.

***sculptilis* (Schedl)** 1965c: 60 (*Poecilips*). Holotype ♀; Madagascar-Est, dct. Sambawa; Marojejy, Ambalosoratra 1700 m; Ankazobe, foret Ambohitantely, Perinet; Sambirano, Nosy-Be, foret de Lokobe; IRSM, Madagascar.

Distribution: Madagascar.
References: (**tx**) Schedl 1965c: 60, 1977b: 100, 1979c: 223.

***similis* (Eggers)** 1923a: 148 (*Dendrurgus*). Lectotype ♀; Deutsch Neu Guinea, Kaiserin Augustafluss; Eggers Collection, in NHMW, Wien, designated by Schedl 1979c: 229.
Distribution: New Guinea.
References: (**ds**) Murayama 1957c: 630. (**tx**) Beeson 1939: 290; Eggers 1923a: 145, 148; Murayama 1957c: 630; Schedl 1954a: 138, 1955b: 290, 1979c: 229.

***solomonicus* (Browne)** 1968c: 112 (*Poecilips*). Holotype ♀; Rennell Island, Niupani; UZMC, Copenhagen.
Distribution: Solomon Islands (Rennell Island).
References: (**tx**) Browne 1968c: 112.

***sparsepilosus* (Eggers)** 1940b: 106 (*Poecilips*). Holotype ♀; Congostaat (Bambesa); MRCB, Tervuren.
Distribution: Africa (Congo/ Zaire), Madagascar.
Hosts: *Annonidium mannii*.
Notes: (3) Schedl 1967e: 228 (described male).
References: (**bv**) Schedl 1960f: 23. (**cn**) Mayne & Donis 1951: 333. (**ec**) Mayne & Donis 1951: 333. (**ds**) Murayama 1957c: 631; Schedl 1960f: 23, 59, 1961k: 713, 1967e: 213, 1977a: 90. (**tx**) Eggers 1940b: 106; Murayama 1957c: 631; Schedl 1950c: 204, 1955f: 258, 1961k: 713, 1967e: 226–228, 1977b: 90, 1979c: 232.

***sparserugosus* (Schedl)** 1972h: 62 (*Poecilips*). Holotype ♀; New Guinea, Sattelberg, Huon Gulf; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1972h: 62, 1979c: 233.

***spinipennis* (Schedl)** 1955b: 293 (*Poecilips*). Holotype ♀; Neu-Guinea, Mt. Hanseman, Astrolobe Bay; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**ds**) Murayama 1957c: 630. (**tx**) Murayama 1957c: 630; Schedl 1955b: 280, 293.

***squamifer* (Schedl)** 1975f: 355 (*Poecilips*). Holotype ♀; New Guinea, Mt. Pabinama, Normandy Isl., 820 m; AMNH, New York.
Distribution: New Guinea.
References: (**tx**) Schedl 1975f: 355.

***striatus* Eggers** 1920: 33. Holotype ♀; Bomole (Deutsch-Ostafrika); Hamburg Museum, lost.
Distribution: Africa (Tanzania).
References: (**ds**) Beaver 1987b: 9; Browne 1966: 247, 1986c: 661; Schedl 1966b: 39. (**tx**) Eggers 1920: 33–34; Murayama 1957: 613; Nobuchi 1983: 301; Schedl 1961k: 713.

***strigicollis* Schedl** 1972j: 228. Holotype ♀; Ceylon: Kandy, 600 m foret pres du Chalet Guesthouse; MHNG, Geneve.
Distribution: Asia (Tamil Nadu in India/ Sri Lanka).
References: (**ds**) Schedl 1975e: 450. (**tx**) McNamara 1977: 195; Schedl 1972j: 228, 1979c: 238.

***suaui* (Schedl)** 1973f: 70 (*Poecilips*). Holotype ♀; Dawa Dawa, M. Bay Distr.; AMNH, New York.
Distribution: New Guinea.
References: (**tx**) Schedl 1973f: 70, 1979c: 239.

***subacuminatus* (Eggers)** 1927b: 399 (*Poecilips*). Holotype ♀; Deutsch Neu Guinea; USNM, Washington.
Distribution: Asia (Malaya), New Guinea.
Hosts: *Shorea macroptera*.
References: (**ds**) Murayama 1957c: 630; Schedl 1971c: 364. (**tx**) Anderson, W. H. & Anderson 1971: 32; Eggers 1927b: 399; Murayama 1957c: 630.

***subcribrosus* (Blandford)** 1896b: 224 (*Xyleborus*). Holotype ♀; Singapore; BMNH, London.
Distribution: Asia (Malaya), Indonesia (Borneo, Mentawei, Sumatra), Philippine Islands.
Hosts: *Balanocarpus heimii, Gonystylus bancanus, Hopea mengarawan, Parashorea lucida, Shorea acuminata, S. hypochra, S. lepidopta, S. leprosula, S. uliginosa,* Dipterocarpaceae bark.
Notes: (3) Schedl 1942d: 49 (described male).
References: (**hb**) Beaver & Browne 1978: 597; Browne 1959b: 295, 1961c: 96; Kalshoven 1959c: 138. (**ds**) Beaver & Browne 1978: 597; Browne 1961c: 96; Choo & Woo 1983; Ohno et al. 1987: 87; Hagedorn 1910d: 111; Kalshoven 1959c: 138; Ohno, Yoneyama, & Nakazawa 1982b: 8; Ohno et al. 1987: 87; Schedl 1966b: 39, 1966g: 30, 1971f: 148. (**tx**) Blandford 1896b: 224; Browne 1959b: 295; Hagedorn 1910a: 157; Schedl 1942d: 49.

infans Hagedorn 1910b: 7 (*Xyleborus*). Syntypes ♀; Mentawei; MNB, Berlin. Synonymy: Browne 1959b: 292.
References: (**cn**) Mathur & Singh 1961a: 40. (**hb**) Browne 1959b: 292. (**ds**) Beeson 1961: 305; Hagedorn 1910d: 106; Kalshoven 1959: 138; Kleine 1913b: 161, 1914b: 286; Mathur & Singh 1961a: 40; Nunberg 1960: 610; Schedl 1936d: 3, 1936j: 20, 1959c: 167. (**tx**) Browne 1959b: 292; Eggers 1927b: 405–407, 1930d: 196; Hagedorn 1910a: 154, 1910b: 7; Schedl 1939e: 332, 1942a: 171, 196; 1942d: 49, 1950g: 895.

***subcyclindricus* (Schedl)** 1942d: 24 (*Poecilips*). Lectotype ♀; Java, Bandjar; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 241.
Distribution: Indonesia (Java).
References: (**tx**) Schedl 1942d: 24, 1979c: 241.

***subdepressus* Schedl** 1948i: 115. Holotype ♀; Amboina; Schedl Collection in NHMW, Wien, preoccupied by Eggers 1940.
Distribution: Indonesia (Amboina in Moluccas Islands).
References: (**tx**) Schedl 1938e: 10, 1948i: 115, 1950d: 26, 1979c: 241.

***subovalis* Eggers** 1932d: 291. Holotype ♀; Congostaat (Lokolenge); MRCB, Tervuren.
Distribution: Africa (Ivory Coast/ Zaire), Madagascar.
Hosts: *Anonidium mannii, Artobotrys* sp., *Cleistopholis glauca, Xylopia vallotii*.
References: (**bv**) Schedl 1960f: 24. (**cn**) Ghesquiere 1933a; Souphieff & Scherbinovskaja 1937: 89. (**hb**) Pollet 1977. (**ds**) Ghesquiere 1933a: 33–34, 1933b: 783; Kleine 1934a: 157, 616; Mayne & Donis 1962: 303, 332; Pollet 1977; Schedl 1960f: 24, 1961k: 714, 1965e: 352, 1966c: 224, 1967e: 213, 1979b: 415; Souphieff & Scherbinovskaja 1937: 89. (**tx**) Eggers 1932d: 291–292; Murayama 1957: 613; Schedl 1952g: 5, 1961k: 714, 1979c: 243.

***subsulcatus* Schedl** 1962k: 1077. Holotype ♀; Kamerun; Schedl Collection in NHMW, Wien.
Distribution: Africa (Cameroon).
References: (**tx**) Schedl 1962k: 1077, 1979c: 244.

***subvulgaris* (Browne)** 1966: 246 (*Poecilips*). Holotype ♀; Bismarck Islands: Manus; UZMC, Copenhagen.
Distribution: Bismarck Islands.
References: (**tx**) Browne 1966: 246.

***surinamensis* Schedl** 1948i: 116. Lectotype ♀; Suriname (= Dutch Guiana); Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 247.
Distribution: South America (Bolivia/ Brazil/ Suriname).
Hosts: *Astrocarym* probably *murumuru* (Boegroe Makka nuts).
Notes: (1) This taxon may be a minor aberration of *carpophagus* Hornung; if so, it has no status in nomenclature.
References: (**ds**) Dinther 1960: 111; Nieuwenhuizen 1953: 346; Nunberg 1972b: 191; Schedl 1966f: 85, 1970e: 82, 1972g: 43, 1973a: 367, 1976a: 51. (**tx**) Schedl 1948i: 116, 1951b: 376, 1964k: 217, 1979c: 247; Wood, S. L. 1977c: 384.
brevipilosus Eggers 1951: 150. Holotype ♀; Brasil (Blumenau); Eggers Collection, in NHMW, Wien, preoccupied by Beeson 1939. Synonymy: Wood 1977c: 384.
References: (**ds**) Eggers 1951: 150; Schedl 1963f: 56, 1966f: 84, 1979c: 46; Wood, S. L. 1977c: 384.

***tahitensis* (Beeson)** 1935: 117 (*Thamnurgides*). Holotype ♀; Tahiti: Papenoo Valley, 150 m; not given, presumably BPBM, Honolulu.
Distribution: Philippine Islands, Tahiti.
References: (**ds**) Beeson 1938b: 291; Murayama 1957c: 630. (**tx**) Beeson 1935: 117–118, 1938b: 291; Murayama 1957c: 630.
striatus Eggers 1927c: 82 (*Thamnurgides*). Holotype ♀; Philippinen: Luzon, Provinz Laguna, Mount Maquiling; USNM, Washington, preoccupied by Eggers 1920. Synonymy: Beaver 1991: 88.
References: (**ds**) Wood, S. L. 1960a: 47. (**tx**) Anderson, W. H. & Anderson 1971: 32; Beaver 1991: 88; Beeson 1939: 287; Eggers 1927c: 82; Schedl 1961k: 713; Wood, S. L. 1960a: 47.
striatulus Wood 1989: 178. Holotype ♀; Philippinen: Luzon, Provinz Laguna, Mount Maquiling; USNM, Washington, automatic.
Synonymy: Beaver 1991: 88.
References: (**tx**) Wood, S. L. 1989: 178.

***tapatapaoanus* (Schedl)** 1951k: 149 (*Poecilips*). Lectotype ♀; Upolu, Tapatapao: Lanutoo Trail, 1,600 ft.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 250.
Distribution: Samoa.
Hosts: *Myristica* sp. fruits.
References: (**ds**) Murayama 1957c: 630. (**tx**) Murayama 1957c: 630; Schedl 1951k: 135, 149, 1979c: 250.

***taprobanus* (Blandford)** 1896b: 203 (*Dryocoetes*). Holotype ♀; Ceylon (Thwaites); BMNH, London.
Distribution: Asia (Sri Lanka).
References: (**ds**) Hagedorn 1910d: 67; Kleine 1913b: 136, 1914b: 273; Murayama 1957c: 608; Schedl 1959a: 491. (**tx**) Blandford 1896b: 203; Hagedorn 1910a: 96; Murayama 1957c: 608; Schedl 1959a: 491.

***theae* Eggers** 1929b: 112. Holotype ♀; Ceylon (Peradeniya); BMNH, London.
Distribution: Asia (Burma/ Sri Lanka).
Hosts: *Camellia sinensis, C. theifera* (seed).
References: (**cn**) Mathur, Singh, & Lal 1958: 19, 95; Souphieff & Scherbinovskaja 1937: 89. (**ds**) Beeson 1939: 302, 1961: 286; Bhasin, Roonwal, & Singh 1958; Kleine 1934a: 157; Mathur, Singh, & Lal 1958: 19, 95; Schedl 1959a: 485, 1971a: 276, 1972j: 225, 1975a, 1977d: 280; Souphieff & Scherbinovskaja 1937: 89. (**tx**) Beeson 1939: 302; Eggers 1929b: 112; Schedl 1938e: 10, 1948i: 118–119, 1959a: 485, 487, 1979c: 252.

***tunggali* (Schedl)** 1942a: 178 (*Poecilips*). Lectotype ♀; Malaya, Pahang, Rotan Tunggal F. R.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 258.
Distribution: Asia (Malaya/ Vietnam).
Hosts: *Artocarpus scortechinii, Garcinia merquearius, Pometia pinnata*.
Notes:
References: (**ds**) Browne 1961c: 93; Murayama 1957c: 230; Schedl 1973c: 377. (**tx**) Browne 1972b: 21; Murayama 1957c: 230; Schedl 1942a: 178, 1979c: 258.

***uniseriatus* Eggers** 1927b: 398. Holotype ♀; Sumatra; Eggers Collection, in NHMW, Wien.
Distribution: Indonesia (Sarawak in Borneo, Sumatra).
Notes: (3) Schedl 1959r: 42 (*confertus* Schedl treated as a synonym).
References: (**ds**) Murayama 1957c: 630; Schedl 1964c: 304. (**tx**) Eggers 1927b: 398–399, 1940a:

129; Murayama 1957e: 630; Schedl 1933e: 105, 1938e: 10, 1942d: 24, 1959r: 42, 1972q: 256, 1979c: 261.

***variabilis* (Beeson)** 1939: 286 (*Thamnurgides*). Holotype ♀; Coorg: Bhagamandala, Karike, 3,500 feet; FRI, Dehra Dun.

Distribution: Asia (Burma/ Karnataka in India/ Malaya/ Sri Lanka/ Vietnam), Fiji, Indonesia (Borneo, Java, Sumatra), Micronesia (Caroline Islands).

Hosts:*Agathis vitiensis, Borassus flabellifer, Colophyllum vitiense, Cullenia excelsa, Dillenia retusa, Elaeocarpus oblongus, Ficus glomerata, Machilus macrantha, Myristica castaneifolia, M. cinnamomea, Styrax benzoin, Swietinia* sp., *Swintonia floribunda, Tectona grandis, Vateria indica.*

Notes: (3) Breeds in bark and fruit.

References: (**cn**) Mathur & Singh 1961a: 78, 1961b: 14; Mathur, Singh, & Lal 1958: 15, 104; Yunus & Hua 1980: 229. (**hb**) Beaver 1987a: 16; Beaver & Browne 1978: 598; Browne 1961c: 99. (**ds**) Beaver 1987a: 16; Beaver & Browne 1978: 598; Beeson 1961: 301; Bhasin, Roonwal, & Singh 1958; Browne 1949b, 1960a: 304, 1961c: 99, 1980b: 381, 1983b: 77, 1986b: 333, 1986c: 661; Mathur & Singh 1961a: 78, 1961b: 14; Mathur, Singh, & Lal 1958: 15, 104; Murayama 1957c: 630; Ohno et al. 1987: 87; Schedl 1964c: 304, 1971a: 276, 1973c: 378, 1975e: 449; Wood, S. L. 1960a: 47; Yunus & Hua 1980: 229. (**tx**) Beeson 1939: 286–287, 306; Browne 1949b: 897, 1970: 566; Murayama 1957c: 630; Schedl 1953c: 289, 1959a: 490, 1979c: 264; Wood, S. L. 1960a: 47–48.

***vateriae* (Beeson)** 1939: 293 (*Thamnurgides*). Holotype ♀; Madras: Wynaad division, Chandanathode, 3,800 feet; FRI, Dehra Dun.

Distribution: Asia (Karnataka, Kerala in India).

Hosts: *Cullenia excelsa, Vateria indica.*

Notes: (3) Breeds in fruit.

References: (**cn**) Mathur, Singh, & Lal 1958: 36, 104. (**ds**) Beeson 1939: 293–294, 307, 1961: 301; Mathur, Singh, & Lal 1958: 36, 104; Murayama 1957c: 630. (**tx**) Beeson 1939: 293; Murayama 1957c: 630.

***vulgaris* (Eggers)** 1923a: 151 (*Dendrurgus*). Syntypes ♀; Engano, Mentawei, Sumatra, Borneo, Neu Guinea; MCG, Genova, and Eggers Collection (2 syntypes), in NHMW, Wien.

Distribution: Asia (Burma/ Andaman Islands, Assam, Bengal, Nicobar Islands, Uttar Pradesh in India/ Malaya/ Sri Lanka), Bismarck Islands, Fiji, Indonesia (Borneo, Java, Mentawei, Sumatra), New Guinea, North America (introduced: Florida), Philippine Islands, Samoan Islands.

Hosts: *Aesculus punduana, Amoora rohituka, Artocarpus fraxinifolius, Canarium euphyllum, Ficus religiosa, Myristica dactyloides, Phoebe hainesiana, Swintonia floribunda, Terminalia myriocarpa.*

Notes: (3) Schedl 1959a: 488, 1966: 39 (*Poecilips montanus* Eggers, nomen nudum, *P. notatus* Eggers, nomen nudum, synonymy). Breeds in bark.

References: (**bv**) Gray, B. 1974c. (**cn**) Mathur & Singh 1961a: 81, 1961b: 34; Roonwal 1954: 33; Wylie & Shanahan 1975. (**hb**) Beaver 1976b: 537; Beeson 1929: 228; Gray, B. 1974c; Kalshoven 1958b: 177; Wylie & Shanahan 1975. (**ds**) Atkinson et al. 1991: 159; Beaver 1976b: 537; Beaver & Maddison 1990: 372; Beeson 1929: 228, 1938b: 291, 1961: 301; Bhasin, Roonwal, & Singh 1958; Browne 1961c: 93, 1966: 246, 1974a: 65, 1980c: 484, 1984b: 287; Mathur & Singh 1961a: 81, 1961b: 34; Murayama 1957c: 630–631; Ohno et al. 1988a: 92, 1989: 60; Roonwal 1954: 33; Schedl 1966b: 39, 1969a: 207, 1969c: 51, 1969e: 156, 1971a: 276, 1971c: 364, 1971f: 148, 1972b: 267, 1975i: 346, 1975j: 293. (**tx**) Beeson 1929: 229, 1938: 291, 1939: 229, 307; Eggers 1923a: 151, 1925: 153, 1927c: 82; Murayama 1957c: 630–631; Nobuchi 1983: 301; Schedl 1942d: 3–4, 1951k: 135, 1954a: 139, 1959a: 488, 1979c: 268; Wood, S. L. 1960a: 47.

brevior Eggers 1927c: 84 (*Poecilips*). Lectotype ♀; Philippinen: Luzon, Provinz Mountain, Balbalan; USNM, Washington, designated by Anderson & Anderson 1971: 8. Synonymy: Schedl 1966b: 39.

References: (**ds**) Schedl 1959a: 485. (**tx**) Anderson, W. H. & Anderson 1971: 8; Eggers 1927c: 84; Schedl 1939e: 329, 1942d: 4, 1959a: 485, 488, 1966b: 39, 1979c: 46.

Tribe Crypturgini LeConte

Crypturgi
References: LeConte 1876: 374, 387; LeConte & Horn 1883: 521.

Crypturgidae
References: Eichhoff 1878b: 72; Hagedorn 1908: 371.

Crypturginae
References: Hagedorn 1910a: 24, 71, 1910d: 34; Hopkins 1915c: 225; Nusslin 1911: 428; Tredl 1907: 11.

Crypturgini
References: Bedel 1888b: 395, 412; Leng 1920: 337; Lucas 1920: 19; Nusslin 1911: 428; Reitter 1913: 27; Tredl 1907: 11; Wood, S. L. 1978a: 113, 1982b: 67, 1986a: 75–76; Yin, Huang, & Li 1984: 94.

Crypturgina
References: Balachowsky 1949a: 158; Nunberg 1954: 16.

Genus *Dolurgus* Eichhoff

DOLURGUS EICHHOFF 1868c: 147. Type-species: *Hylastes pumilus* Mannerheim, monobasic.
References: (**ay**) Nobuchi 1969a: 59. (**hb**) Chapman 1957: 3–4; Wood, S. L. 1986a: 76. (**ds**) Wood, S. L. 1986a: 76. (**tx**) Arnett 1960: 1043, 1968: 1043; Bruck 1936a: 40; Chamberlin 1939: 120–121, 1958: 55; Chapuis 1869: 24, 1873: 232; Eichhoff 1868c: 147, 1878b: 83; LeConte 1876: 387; LeConte & Horn 1883: 524; Swaine 1909: 100–101, 1918a: 39; Wood, S. L. 1982b: 743–744, 1986a: 76.

***pumilus* (Mannerheim)** 1843: 297 (*Hylastes*). Holotype, sex?; Sitka Island [Alaska]; MZU, Helsinki.
Figures: Bright 1976d: 202, 210 (adult).
Distribution: North America (Alaska/ British Columbia in Canada/ California, Oregon, Washington in USA).
Hosts: *Abies nobilis, Picea engelmannii, P. sitchensis, Pinus contorta, P. monticola, P. muricata, P. radiata, P. tuberculata.*
Notes: (1) Eichhoff 1868c: 147 (to *Dolurgus*).
References: (**ay**) Chapman 1957. (**bv**) Chapman 1963a: 3–4, 1963b: 673–676; Ohmart & Voight 1982: 340. (**cn**) Currie 1905: 73; Doane et al. 1936; Essig 1926: 513, 1958: 513; Hopkins 1904a: 18; Keen 1929a: 57, 1952c: 166; Lindgren 1980a: 62; Ruppel 1967: 36; Schuder 1969: 76; Swaine 1918a: 55. (**ec**) Furniss, R. L. & Carolin 1977: 378; Ohmart & Voight 1982: 340. (**hb**) Bright 1976d: 116; Bright & Stark 1973: 70; Chamberlin 1939: 120–121, 1958: 55; Doane et al. 1936; Essig 1926: 513, 1958: 513; Furniss, R. L. & Carolin 1977: 378; Hopkins 1904a: 18; Keen 1929: 57, 1952c: 166; Kinghorn & Chapman 1959: 81–92; Lindgren 1980a: 62; Pierce, W. D. 1907: 294; Swaine 1918a: 55; Wood, S. L. 1982b: 743. (**ds**) Bright 1976d: 116; Bright & Stark 1973: 70; Chamberlin 1917: 324, 1925, 1939: 120–121, 1958: 55; Chapman 1963: 676; Chapuis 1869: 24, 1873: 232; Essig 1926: 513, 1958: 517; Evans, D. 1983: 32; Furniss, R. L. & Carolin 1977: 378; Hagedorn 1910d: 37; Hamilton 1894: 35; Henshaw 1885: 149; Hopping 1922; Keen 1929a: 57, 1929a: 14, 1952c: 166; Kleine 1912a: 218, 1913b: 115, 1914b: 403, 1934a: 140; Leng 1920: 338; Melsheimer 1853: 88; Murayama 1957a: 36; Ohmart & Voight 1982: 340; Patterson & Hatch 1945: 149; Ruppel 1967: 36; Schedl 1969a: 203; Schuder 1969: 76; Swaine 1909: 101; Wood, S. L. 1972a: 415, 1982b: 743. (**tx**) Bright 1976d: 116, 202, 210; Bruck 1936a: 109; Chamberlin 1939: 120–121, 1958: 55; Chapuis 1869: 24, 1873: 232; Eichhoff 1868c: 147, 1878b: 83; Evans, D. 1983: 32; Hagedorn 1910a: 76; Hopkins 1914: 121; Keen 1929a: 14; LeConte 1857: 22, 1868: 152, 1876: 387, 437; Lucas 1920: 247; Mannerheim 1843: 297 (reprint p. 125), 1952: 356; Swaine 1909: 101, 1918a: 55; Wood, S. L. 1969c: 116, 1972a: 415, 1982b: 743. (**ms**) Essig 1931: 699; Lucas 1920: 247.

Genus *Coleobothrus* Enderlein

COLEOBOTHRUS ENDERLEIN 1929: 144. Type-species: *Coleobothrus jandiacus* Enderlein, original designation.
Keys: Menier 1973: 208.
References: (**hb**) Wood, S. L. 1986a: 76. (**ds**) Wood, S. L. 1986a: 76. (**tx**) Enderlein 1929: 144; Menier 1973: 205–208; Schedl 1959g: 54, 1961k: 644; Wood, S. L. 1986a: 76.

***alluaudi* (Peyerimhoff)** 1923a: 52 (*Aphanarthrum*). Syntypes, sex?; Valle du Sous, Morocco; not located.
Distribution: Africa (Fuerteventura in Canary Islands/ Morocco),
Hosts: *Euphorbia beaumierana, E. echinus, E. handiensis.*
Notes: (1) Menier 1973: 205 (to *Coleobothrus*).
References: (**hb**) Peyerimhoff 1926: 386. (**ds**) Kleine 1934a: 139; Kocher 1953: 133; Peyerimhoff 1923a: 52, 60, 1925: 13, 1926: 386; Schedl 1959g: 60, 1964f, 1972n: 350. (**tx**) Menier 1973: 205; Peyerimhoff 1923a: 52, 60; Schedl 1934f: 1638, 1959g: 60, 1979c: 16.

jandiacus Enderlein 1929: 144. Syntypes ♂♀; Fuerteventura, Jandia-Gebirge, Gran Valle; Stettin Museum, lost, 1 in Madrid Museum.
Synonymy: Israelson 1980: 202.
References: (**cn**) Souphieff & Scherbinovskaja 1937: 28. (**ds**) Kleine 1934a: 139; Schedl 1959g: 60; Schedl, Lindberg, & Lindberg 1959: 21; Souphieff & Scherbinovskaja 1937: 28. (**tx**) Enderlein 1929: 144; Israelson 1980: 202; Menier 1973: 205, 207; Schedl 1934f: 1638,

1959g: 60; Schedl, Lindberg, & Lindberg 1959: 21.

***germeauxi* Menier** 1973: 207. Holotype ♂; Massif du Day, Parc national, Territoire francais des Afars et des Issas; MNHN, Paris.
Figures: Menier 1973:figs. 2–3.
Distribution: Africa (Eritrea in Ethiopia).
Hosts: *Euphorbia* sp.
References: (**tx**) Menier 1973: 207.

***luridus* (Wollaston)** 1860b: 163 (*Aphanarthrum*). Lectotype, sex?; Sta Cruz in Teneriffe, San Sebastian in Gomera, Canary Islands; BMNH, London, designated by Israelson 1972: 250.
Distribution: Africa (Gomera, Gran Canaria, Tenerife in Canary Islands).
Hosts: *Euphorbia canariensis*.
References: (**ay**) Israelson 1972: 250. (**cn**) Souphieff & Scherbinovskaja 1937: 27. (**ds**) Enderlein 1929; Kleine 1913b: 113, 1914a: 21, 1934a: 139; Lacordaire 1866: 376; Peyerimhoff 1923a: 47; Schedl 1959g: 58, 1964f, 1971d: 426; Schedl, Lindberg, & Lindberg 1959: 22; Souphieff & Scherbinovskaja 1937: 27. (**tx**) Enderlein 1929: 145–146; Ferrari 1868: 251, 254; Israelson 1972: 250; Lacordaire 1866: 376; Menier 1973: 205; Peyerimhoff 1923a: 47; Schedl 1934f: 1638, 1959g: 58, 1979c: 142; Schedl, Lindberg, & Lindberg 1959: 22; Wollaston 1860b: 162–163, 1861b: 32, 1862b: 166, 1864: 262, 1865: 243.

luridus annulicollis Enderlein 1929: 146. Syntypes, sex?; Teneriffe, Santa Cruz; not located.
References: (**tx**) Enderlein 1929: 146; Schedl 1934f: 1638, 1959g: 22.

luridus flavicollis Enderlein 1929: 146. Syntypes, sex?; Teneriffe, Anagagebirge, bei San Andres, Canary Islands; not located.
References: (**tx**) Enderlein 1929: 146; Schedl 1934f: 1638, 1959g: 22.

Genus *Aphanarthrum* Wollaston

APHANARTHRUM WOLLASTON 1854: 292. Type-species: *Aphanarthrum euphorbiae* Wollaston, monobasic.
Keys: Schedl 1959g: 56.
References: (**hb**) Schedl 1958d: 184; Wood, S. L. 1986a: 76. (**ds**) Hagedorn 1910d: 34; Paulian & Villiers 1941: 103; Schedl 1934f: 1638; Wood, S. L. 1986a: 76. (**tx**) Blandford 1894b: 263, 1897a: 174, 1904: 249; Eichhoff 1878b: 39–40, 84–85; Enderlein 1929: 142–144; Ferrari 1867a: 4, 7–8, 1868: 254; Hagedorn 1908: 371, 1909: 138, 1910a: 71–72, 75; Hopkins 1914: 117, 1915c: 210, 226; Israelson 1972: 249–257; Kirsch 1866: 213; LeConte 1868: 151–152; Menier 1973: 205; Peyerimhoff 1923: 57; Ratzeburg 1868: 173–174; Reitter 1894: 59, 1913a: 61; Schedl 1946: 2, 1959g: 54, 1961k: 644; Uyttenboogaart 1932: 56; Wollaston 1854: 292, 1860: 162–163, 1862: 165, 1864: 257, 1865: 239, 1871: 263; Wood, S. L. 1986a: 76.

***aeonii* Lindberg** 1953: 18. Holotype, sex?; Valle de Masca, Canary Islands; MZU, Helsinki.
Figures: Israelson 1972:fig. 3 (male genitalia).
Distribution: Africa (Gomera, Hierro, Palma, Tenerife in Canary Islands).
Notes: (1) Lindberg 1959: 20, Israelson 1972: 251 (a good species).
References: (**ay**) Israelson 1972. (**tx**) Lindberg 1953: 18, 1959: 20; Schedl 1959g: 20.

***affine* Wollaston** 1860b: 166. Lectotype ♂; Lanzarota, Fuerteventura et Canaria; BMNH, London.
Figures: Israelson 1972:fig. 19 (male genitalia).
Distribution: Africa (Fuerteventura, Gomera, Gran Canaria, Lanzarote, Tenerife in Canary Islands/ Morocco).
Hosts: *Euphorbia balsamifera, E. regis-jubae, E. dendroides*.
References: (**ay**) Israelson 1972. (**cn**) Souphieff & Scherbinovskaja 1937: 27. (**hb**) Peyerimhoff 1926: 386. (**ds**) Gemminger & Harold 1872: 2680; Hagedorn 1910d: 34; Kleine 1913b: 113, 1914a: 20, 1934a: 139; Lacordaire 1866: 376; Peyerimhoff 1923a: 48, 61, 1925: 13, 1926: 386; Schedl 1959g: 72, 1964f; Schedl, Lindberg, & Lindberg 1959: 18; Souphieff & Scherbinovskaja 1937: 27; Uyttenboogaart 1937: 116. (**tx**) Eichhoff 1878b: 92; Hagedorn 1910a: 72; Lacordaire 1866: 376; Peyerimhoff 1923a: 48, 61; Schedl 1934f: 1638, 1959g: 72; Schedl, Lindberg, & Lindberg 1959: 18, 58; Wollaston 1860b: 166, 1861b: 36, 1862b: 170, 1864: 259, 1865: 242.

***armatum* Wollaston** 1861b: 33. Lectotype ♀; Vicinity of Haria, Lanzarote, Canary Islands; BMNH, London, designated by Israelson 1972: 256.
Figures: Israelson 1972:fig. 22 (male genitalia, species identification tentative).
Distribution: Africa (Lanzarote in Canary Islands).
Hosts: *Euphorbia* sp.
References: (**cn**) Souphieff & Scherbinovskaja 1937: 100. (**ds**) Gemminger & Harold 1872: 2681; Hagedorn 1910d: 34; Kleine 1913b: 113, 1914a: 21, 1934a: 139; Peyerimhoff 1923a: 48, 61; Schedl 1959g: 66; Schedl, Lindberg, & Lindberg 1959: 18; Souphieff & Scherbinovskaja 1937: 100. (**tx**) Eichhoff 1878b: 97; Hagedorn 1910a: 73; Israelson 1972: 256; Peyerimhoff 1923a: 48, 61; Schedl 1934f: 1638, 1959g: 57, 66; Schedl, Lindberg, & Lindberg 1959: 18; Wollaston 1861b: 33, 1862b: 167, 1865: 240.

***bicinctum* Wollaston** 1860b: 165. Lectotype ♂; Lanzarote, Canary Islands; BMNH, London, designated by Israelson 1972: 255.
Figures: Israelson 1972:figs. 9–11 (male genitalia).
Distribution: Africa (Gran Canaria, Lanzarote, Tenerife in Canary Islands).
Hosts: *Euphorbia balsamifera, E. canariensis, E. obtusifoliae, E. regis-jubae*.
Notes: (3) Israelson 1972: 255 (established subspecies and designated lectotypes for the subspecies;

he did not treat the host or geographical distributions that make it possible to recognize the existence of subspecies).

References: (**ay**) Israelson 1972. (**cn**) Souphieff & Scherbinovskaja 1937: 27–28. (**hb**) Peyerimhoff 1926: 386. (**ds**) Gemminger & Harold 1872: 2681; Hagedorn 1910d: 34; Kleine 1913b: 113, 1914a: 20, 1934a: 139; Kocher 1953: 133; Lacordaire 1866: 376; Peyerimhoff 1923a: 48, 61, 1925: 13, 1926: 386; Schedl 1959g: 70, 1964f, 1971d: 425; Schedl, Lindberg, & Lindberg 1959: 19; Souphieff & Scherbinovskaja 1937: 27–28; Uyttenboogaart 1937: 116. (**tx**) Eichhoff 1878b: 100; Ferrari 1868: 254; Hagedorn 1910a: 73; Lacordaire 1866: 376; Peyerimhoff 1923a: 48, 61; Schedl 1934f: 1638, 1959g: 70; Schedl, Lindberg, & Lindberg 1959: 19; Wollaston 1860b: 165, 1861b: 35, 1862b: 149, 1864: 260, 1865: 241, 243.

bicinctum vestitum Wollaston 1865: 43. Lectotype ♂; Teneriffe, Canary Islands; BMNH, London, designated by Israelson 1972: 255.

Notes: (1) Israelson 1972: 255 (subspecies established).

References: (**ay**) Israelson 1972: 255. (**tx**) Israelson 1972: 255; Schedl 1934f: 1638, 1959g: 70; Wollaston 1865: 43.

bicinctum obsitum Wollaston 1865: 43. Lectotype ♂; Grand Canary, Canary Islands; BMNH, London, designated by Israelson 1972: 255.

Notes: (1) Israelson 1972: 255 (subspecies established).

References: (**ay**) Israelson 1972: 255. (**ds**) Kleine 1914a: 21. (**tx**) Israelson 1972: 255; Schedl 1934f: 1638, 1959g: 70; Wollaston 1865: 43.

***bicolor* Wollaston** 1860b: 165. Lectotype, sex?; Teneriffe, Canary Islands; BMNH, London, designated by Israelson 1972: 250.

Figures: Israelson 1972:fig. 1 (male genitalia).

Distribution: Africa (Gomera, Hierro, Lanzarote, Palma, Tenerife in Canary Islands/ Madeira Island).

Hosts: *Euphorbia regis-jubae, E. piscatoria*.

References: (**ay**) Israelson 1972. (**cn**) Souphieff & Scherbinovskaja 1937: 27. (**ds**) Fauvel 1897; Gemminger & Harold 1872: 2681; Hagedorn 1910a: 34; Jansson 1940: 63; Kleine 1913b: 113, 1914a: 20, 22, 1934a: 139; Lacordaire 1866: 376; Lundblad 1958: 489; Peyerimhoff 1923a: 48, 60; Schedl 1959g: 51, 1963e: 155, 1964f; Schedl, Lindberg, & Lindberg 1959: 19; Schmitz 1898: 157; Souphieff & Scherbinovskaja 1937: 27; Uyttenboogaart 1937: 116. (**tx**) Eichhoff 1878b: 89; Ferrari 1868: 254; Hagedorn 1910a: 73; Lacordaire 1866: 376; Peyerimhoff 1923a: 48, 60; Schedl 1934f: 1638, 1959g: 61, 1979c: 38; Schedl, Lindberg, & Lindberg 1959: 19; Wollaston 1860a: 362, 1860b: 165, 1861b: 35, 1862b: 169, 1864: 259, 1865: 243.

***canariense* Wollaston** 1860b: 164. Lectotype ♂; Hierro, Canary Islands; BMNH, London, designated by Israelson 1972: 256.

Figures: Israelson 1972:fig. 18 (male genitalia).

Distribution: Africa (Gomera, Hierro, Gran Canaria, Palma, Tenerife in Canary Islands/ Madeira Island).

Hosts: *Euphorbia canariensis*.

References: (**ay**) Israelson 1972. (**cn**) Souphieff & Scherbinovskaja 1937: 28. (**ds**) Gemminger & Harold 1872: 2681; Hagedorn 1910a: 34; Kleine 1913b: 113, 1914a: 20, 22; Lacordaire 1866: 376; Peyerimhoff 1923a: 48, 61; Schedl 1959g: 68, 1971d: 426; Schedl, Lindberg, & Lindberg 1959: 20; Souphieff & Scherbinovskaja 1937: 28; Uyttenboogaart 1937: 116. (**tx**) Eichhoff 1878b: 99; Ferrari 1868: 251–254; Hagedorn 1910a: 73; Lacordaire 1866: 376; Peyerimhoff 1923a: 48, 61; Schedl 1934f: 1638, 1959g: 57, 68; Schedl, Lindberg, & Lindberg 1959: 20; Wollaston 1860b: 164, 1861b: 34, 1862b: 168, 1864: 261, 1865: 240.

canariense longipes Israelson 1972: 256. Holotype ♂; El Time, La Palma, Canary Islands; Israelson Collection.

Notes: Israelson 1972: 256 (subspecies established, but distributions are not discussed).

References: (**ay**) Israelson 1972: 256. (**ds**) Schedl 1964f.(**tx**) Israelson 1972: 256.

***canescens* Wollaston** 1865: 241. Lectotype ♂; Gomera, Canary Islands; BMNH, London, designated by Israelson 1972: 255.

Figures: Israelson 1972:figs. 14–16, 23 (male genitalia).

Distribution: Africa (Gomera, Gran Canaria, Tenerife in Canary Islands).

Hosts: *Euphorbia balsamifera, E. regis-jubae*.

Notes: Israelson 1972: 255–256 (subspecies established without a discussion of either host or geographical distributions).

References: (**ay**) Israelson 1972: 255. (**ds**) Gemminger & Harold 1872: 2681; Hagedorn 1910a: 34; Kleine 1913b: 113, 1914a: 20, 1934a: 139; Peyerimhoff 1923a: 48, 61; Schedl 1959g: 63, 1971d: 426; Schedl, Lindberg, & Lindberg 1959: 20; Uyttenboogaart 1937: 117. (**tx**) Eichhoff 1878b: 95; Hagedorn 1910a: 73; Peyerimhoff 1923a: 48, 61; Schedl 1934f: 1638, 1959g: 63; Schedl, Lindberg, & Lindberg 1959: 20; Wollaston 1865: 240–241.

canescens simplex Wollaston 1865: 42. Lectotype ♂; Grand Canary, Canary Islands; BMNH, London, designated by Israelson 1972: 256.

Notes: (1) Israelson 1972: 256 (subspecies established).

Distribution: Africa (Gran Canaria in Canary Islands).

References: (**ay**) Israelson 1972: 256. (**ds**) Kleine 1914a: 20. (**tx**) Israelson 1972: 256; Schedl 1934f: 1638, 1959g: 63; Wollaston 1965: 42.

canescens polyspiniger Israelson 1972: 256. Holo-

type ♂; Los Cristianos, Teneriffe, Canary Islands; Israelson Collection.
Notes: (1) Israelson 1972: 256 (subspecies established).
Distribution: Africa (Tenerife in Canary Islands).
References: (**ay**) Israelson 1972: 256. (**tx**) Israelson 1972: 256.

***duongi* Villiers** 1946: 140. Holotype, sex?; Koulouba (Bamako), French West Africa; Institute francais d'Afrique noire de Dakar.
Distribution: Africa (Mali).
Hosts: *Euphorbia sudanica*.
References: (**ds**) Schedl 1959g: 77, 1961k: 645. (**tx**) Schedl 1959g: 77, 1961k: 645; Villiers 1947: 140.

***euphorbiae* Wollaston** 1854: 293. Lectotype ♂; Lagoa basin, Madeira; BMNH, London, designated by Israelson 1972: 256.
Figures: Israelson 1972:fig. 20 (lectotype male genitalia)
Distribution: Africa (Madeira Island).
Hosts: *Euphorbia mellifera*.
References: (**ay**) Israelson 1972: 256. (**cn**) Souphieff & Scherbinovskaja 1937: 28. (**ds**) Fauvel 1897; Gemminger & Harold 1872: 2681; Hagedorn 1910a: 34; Jansson 1940: 63; Kleine 1913b: 113, 1914a: 22, 1934a: 139; Lacordaire 1866: 375; Lundblad 1958: 489; Peyerimhoff 1923a: 48, 61; Schedl 1959g: 69, 1963e: 155; Schmitz 1898: 157; Souphieff & Scherbinovskaja 1937: 28; Wollaston 1854: 293, 1857: 97. (**tx**) Eichhoff 1878b: 87; Ferrari 1868: 251; Hagedorn 1910a: 73; Hopkins 1914: 117; Israelson 1972: 256; Lacordaire 1866: 375; Lucas 1920: 108; Peyerimhoff 1923a: 48, 61; Schedl 1934f: 1638, 1959g: 69, 1979c: 92; Wollaston 1854: 293, 1857: 97, 1860a: 362, 1861b: 31, 1862b: 165, 1864: 260, 1865: 242.

***glabrum* Wollaston** 1860: 167. Lectotype, sex?; Hierro, Canary Islands; BMNH, London, designated by Israelson 1972: 251.
Figures: Israelson 1972:figs. 5–6 (male genitalia).
Distribution: Africa (Gomera, Hierro, Palma, Tenerife in Canary Islands).
Hosts: *Euphorbia* sp.
Notes: (1) Israelson 1972: 251 (subspecies established).
References: (**ay**) Israelson 1972: 251. (**cn**) Souphieff & Scherbinovskaja 1937: 27. (**hb**) Uyttenboogaart 1937: 17. (**ds**) Gemminger & Harold 1872: 2681; Hagedorn 1910a: 34; Kleine 1913b: 113, 1914a: 20, 1934a: 139; Lacordaire 1866: 376; Peyerimhoff 1923a: 48, 60; Schedl 1959g: 62; Schedl, Lindberg, & Lindberg 1959: 21; Souphieff & Scherbinovskaja 1937: 27. (**tx**) Eichhoff 1878b: 89; Hagedorn 1910a: 73; Lacordaire 1866: 376; Peyerimhoff 1923a: 48, 60; Schedl 1934f: 1638, 1959g: 56, 62; Schedl, Lindberg, & Lindberg 1959: 21; Wollaston 1860b: 167, 1861b: 37, 1862b: 171, 1864: 258, 1865: 242.

glabrum nudum Israelson 1972: 251. Holotype ♂; Santa Cruz, La Palma, Canary Islands; Israelson Collection.
Notes: (1) Israelson 1972: 251 (subspecies established).
Distribution: Africa (Palma in Canary Islands).
References: (**ay**) Israelson 1972: 251.

***hesperidum* Wollaston** 1867: 117. Lectotype ♂; Cape Verde Islands, S. Vicent; BMNH, London, designated by Israelson 1972: 250.
Distribution: Africa (Cape Verde Islands).
Hosts: *Euphorbia emortius, E. tuckeyana*.
References: (**ay**) Israelson 1972: 250. (**cn**) Souphieff & Scherbinovskaja 1937: 28. (**ds**) Gemminger & Harold 1872: 2681; Hagedorn 1910d: 34; Kleine 1913b: 113, 1914a: 23, 1934a: 139; Peyerimhoff 1923a: 61; Schedl 1959g: 73; Souphieff & Scherbinovskaja 1937: 28. (**tx**) Eichhoff 1878b: 94; Hagedorn 1910a: 73; Israelson 1972: 250; Peyerimhoff 1923a: 61; Schedl 1959g: 73, 1979c: 116; Wollaston 1867: 117.

***indicum* Wood** 1988b: 190. Holotype ♂; Chikalda, Melghat, C.P., India; FRI, Dehra Dun.
Distribution: Asia (Madhya Pradesh, Maharashtra in India).
Hosts: *Euphorbia neriifolia, Opuntia* sp.
References: (**tx**) Wood, S. L. 1988b: 190.

***jubae* Wollaston** 1860b: 164. Lectotype, sex?; Haria, Lanzarote, Canary Islands; BMNH, London, designated by Israelson 1972: 255.
Figures: Israelson 1972:figs. 12–13 (male genitalia).
Distribution: Africa (Gomera, Gran Canaria, Hierro, Lanzarote, Tenerife in Canary Islands).
Hosts: *Euphorbia regis-jubae*.
Notes: (1) Israelson 1972: 255 (subspecies established, but did not discuss host or geographical distributions).
References: (**ay**) Israelson 1972: 255. (**cn**) Souphieff & Scherbinovskaja 1937: 28. (**ds**) Gemminger & Harold 1872: 2681; Hagedorn 1910d: 34; Kleine 1913b: 113, 1914a: 20; 1934a: 139; Lacordaire 1866: 375; Peyerimhoff 1923a: 47, 61; Schedl 1959g: 64, 1964f; Schedl, Lindberg, & Lindberg 1959: 21; Souphieff & Scherbinovskaja 1937: 28. (**tx**) Eichhoff 1868d: 421, 1878b: 85; Ferrari 1868: 251, 254; Hagedorn 1910a: 73; Lacordaire 1866: 375; Peyerimhoff 1923a: 47, 61; Schedl 1934f: 1638, 1959g: 64, 1979c: 130; Schedl, Lindberg, & Lindberg 1959: 21; Wollaston 1860b: 164, 1861b: 33, 1862b: 167, 1864: 257, 1865: 239.

jubae tuberculatum Wollaston 1865: 40. Lectotype, sex?; Hierro, Canary Islands; BMNH, London, designated by Israelson 1972: 255.
Notes: (1) Israelson 1972: 255 (subspecies established).
Distribution: Africa (Hierro in Canary Islands).
References: (**ay**) Israelson 1972: 255. (**cn**) Souphieff & Scherbinovskaja 1937: 27. (**ds**) Hagedorn 1910d: 34; Kleine 1913b: 113, 1914a: 20;

Peyerimhoff 1923a: 47, 61; Schedl 1959g: 65; Schedl, Lindberg, & Lindberg 1959: 23; Souphieff & Scherbinovskaja 1937: 27. (**tx**) Eichhoff 1878b: 88; Hagedorn 1910a: 73; Israelson 1972: 255; Peyerimhoff 1923a: 47, 61; Schedl 1934f: 1638, 1959g: 65; Schedl, Lindberg, & Lindberg 1959: 23; Wollaston 1865: 40, 239–240.

***mairei* Peyerimhoff** 1923a: 53. Syntypes, sex?; Valle du Sous, Morocco; not located.
Distribution: Africa (Fuerteventura in Canary Islands/ Morocco/ Sudan).
Hosts: *Euphorbia beaumierana, E. echinus, E handiensis*.
Notes: (3) Schedl 1959: 31 (treated this species in *Cisurgus*).
References: (**hb**) Peyerimhoff 1926: 387. (**ds**) Kleine 1934a: 139; Peyerimhoff 1923a: 53, 60, 1925: 12, 1926: 387; Schedl 1959e: 31, 1959g: 75, 1964f, 1968b: 144, 1972n: 350. (**tx**) Peyerimhoff 1923a: 53, 60, 1934f: 1638, 1959e: 31, 1959g: 75; Pfeffer 1983: 295.

goniomma Enderlein 1929: 142. Syntypes, sex?; Fuerteventura, Jandia-Gebirge, Gran Valle; not located. Synonymy: Israelson 1980: 202.
References: (**cn**) Souphieff & Scherbinovskaja 1937: 28. (**ds**) Kleine 1934a: 139; Schedl 1959g: 74–75; Schedl, Lindberg, & Lindberg 1959: 21; Souphieff & Scherbinovskaja 1937: 28. (**tx**) Enderlein 1929: 142–143; Pfeffer 1983: 295; Schedl 1934f: 1638, 1959g: 74–75, 1962p: 204; Schedl, Lindberg, & Lindberg 1959: 21.

***monodi* Paulian & Villiers** 1941: 102. Holotype, sex?; Dakar, Senegal; MNHN, Paris.
Distribution: Africa (Senegal).
Hosts: *Euphorbia balsamifera*.
References: (**ds**) Schedl 1959g: 76, 1961k: 646. (**tx**) Paulian & Villiers 1941: 102; Schedl 1959g: 76, 1960b: 163, 1961k: 646, 1979c: 158; Villiers 1946: 140.

***neglectum* Schedl** 1964a: 99. Syntypes, sex?; Boca del Rio, Palma; MZU, Helsinki, and Schedl Collection in NHMW, Wien.
Distribution: Africa (Palma in Canary Islands).
References: (**tx**) Schedl 1964a: 99, 1979c: 164.

***orientalis* Schedl** 1971e: 12. Holotype, sex?; Sudan, Erkowit, Rotmeer Gebiet, 1400 m; Bayerischen Staates Museum, Munchen.
Distribution: Africa (Sudan).
References: (**tx**) Schedl 1971e: 12, 1979c: 180.

***piscatorium* Wollaston** 1860b: 166. Lectotype ♂; Teneriffe, Palma, and Hierro, Canary Islands; BMNH, London, designated by Israelson 1972: 250.
Figures: Israelson 1972:fig. 5 (male genitalia).
Distribution: Africa (Gomera, Gran Canaria, Hierro, Tenerife in Canary Islands/ Madeira Island).
Hosts: *Euphorbia piscatoria, E.* sp.
References: (**ay**) Israelson 1972: 250. (**cn**) Souphieff & Scherbinovskaja 1937: 27. (**ds**) Fauvel 1897; Gemminger & Harold 1872: 2681; Hagedorn 1910a: 34; Jansson 1940: 63; Kleine 1913b: 113, 1914a: 20, 1934a: 139; Lacordaire 1866: 376; Lundblad 1958: 489; Peyerimhoff 1923a: 48, 61; Schedl 1959g: 73, 1963e: 155, 1964f; Schedl, Lindberg, & Lindberg 1959: 22; Schmitz 1898: 157; Souphieff & Scherbinovskaja 1937: 27; Uytenboogaart 1937: 117. (**tx**) Eichhoff 1878b: 98; Hagedorn 1910a: 73; Lacordaire 1866: 376; Peyerimhoff 1923a: 48, 61; Schedl 1934f: 1638, 1959g: 73, 1964a: 99, 1979c: 195; Schedl, Lindberg, & Lindberg 1959: 22; Wollaston 1860a: 361, 1860b: 166, 1861b: 37, 1862b: 171, 1864: 260, 1865: 242.

***pygmaeum* Wollaston** 1865: 42. Lectotype ♂; Gomera, Canary Islands; BMNH, London, designated by Israelson 1972: 256.
Figures: Israelson 1972:fig. 21 (male genitalia).
Distribution: Africa (Gomera, Palma, Tenerife in Canary Islands).
Hosts: *Euphorbia canariensis*.
References: (**ay**) Israelson 1972: 256. (**cn**) Souphieff & Scherbinovskaja 1937: 28. (**ds**) Gemminger & Harold 1872: 2681; Hagedorn 1910d: 34; Kleine 1913b: 113, 1914a: 20, 1934a: 139; Peyerimhoff 1923a: 48, 61; Schedl 1959g: 67, 1971d: 426; Schedl, Lindberg, & Lindberg 1959: 23; Souphieff & Scherbinovskaja 1937: 28. (**tx**) Eichhoff 1878b: 96; Hagedorn 1910a: 73; Israelson 1972: 254; Peyerimhoff 1923a: 48, 61; Schedl 1934f: 1638, 1959g: 67; Schedl, Lindberg, & Lindberg 1959: 23; Wollaston 1865: 42, 240, 242.

pygmaeum laticollis Wollaston 1865: 42. Syntypes, sex?; Palma, Canary Islands; BMNH, London. Synonymy: Israelson 1972: 256.
References: (**tx**) Schedl 1934f: 1638; Wollaston 1865: 42.

***reticulatum* Wood** 1988b: 191. Holotype ♂; Hunsur, Mysore, India; FRI, Dehra Dun.
Distribution: Asia (Karnataka, Uttar Pradesh in India).
Hosts: *Euphorbia royaleana, E.* sp.
References: (**tx**) Wood, S. L. 1988b: 191

***royaleanum* Wood** 1988b: 191. Holotype ♂; Chikalda, Malghat, C.P., India; FRI, Dehra Dun.
Distribution: Asia (Karnataka, Madhya Pradesh, Uttar Pradesh in India).
Hosts: *Euphorbia royaleana, E.* sp.
References: (**tx**) Beeson 1941; Schedl 1959g: 56; Wood, S. L. 1988b: 191.

***saturatum* Peyerimhoff** 1925: 12. Syntypes, sex?; Oued el-Akhdar, pres Demnat; not located.
Distribution: Africa (Morocco).
Hosts: *Euphorbia resiniferae*.
References: (**ds**) Peyerimhoff 1925: 12; Schedl 1959e: 32, 1959g: 75. (**tx**) Peyerimhoff 1925: 12; Schedl 1934f: 1638, 1959e: 32, 1959g: 75, 1960b: 163, 1962p: 204.

***subglabrum* Israelson** 1972: 251. Holotype ♂; Canary Islands, La Palma, Bco. de la Cueva Grande; Israelson Collection.
Figures: Israelson 1972:fig. 8 (male genitalia).
Distribution: Africa (Palma in Canary Islands).
Hosts: *Euphorbia* sp.
References: (**ay**) Israelson 1972: 251. (**tx**) Israelson 1972: 251, 254.

***wollastoni* Israelson** 1972: 251. Holotype ♂; Canary Islands, Gomera, San Sebastian; Israelson Collection.
Figures: Israelson 1972:fig. 4 (holotype male genitalia).
Distribution: Africa (Gomera in Canary Islands).
Hosts: *Euphorbia* sp.
References: (**ay**) Israelson 1972: 251. (**tx**) Israelson 1972: 251–252.

Genus *Deropria* Enderlein

DEROPRIA ENDERLEIN 1929: 143. Type-species: *Aphanarthrum elongatum* Eggers, original designation.
References: (**ds**) Wood, S. L. 1986a: 76. (**tx**) Enderlein 1929: 143; Schedl 1959g: 54; Wood, S. L. 1986a: 76.

***elongatum* (Eggers)** 1927: 39 (*Aphanarthrum*). Holotype, sex?; Gran Canaria, Canary Islands; Uyttenboogaart Collection.
Distribution: Africa (Gran Canaria in Canary Islands).
References: (**cn**) Enderlein 1929: 143. (**ds**) Schedl 1959g: 76; Schedl, Lindberg, & Lindberg 1959: 21; Uyttenboogaart 1937: 117. (**tx**) Eggers 1927: 39–40; Enderlein 1929: 143; Schedl 1934f: 1638, 1959g: 57, 76; Schedl, Lindberg, & Lindberg 1959: 21; Wood, S. L. 1986a: 76.

Genus *Crypturgus* Erichson

CRYPTURGUS ERICHSON 1836: 60. Type-species: *Bostrichus pusillus* Gyllenhal, subsequent designation by Thomson 1859: 147.
Keys: Bright 1976d: 114, Swaine 1918a: 54, Wood 1982b: 740 for North America, Reitter 1913a: 61, Schedl 1946a: 4 for Europe.
References: (**ay**) Nobuchi 1969a: 59.(**cn**) Aitken 1945: 273–364; Judeich & Nitsche 1895: 448–451. (**ec**) Balazy & Michalski 1960: 133–144. (**hb**) Wood, S. L. 1986a: 75–76. (**ds**) Hagedorn 1910d: 35–37; Scheerpeltz & Winkler 1930: 256; Wood, S. L. 1986a: 76. (**tx**) Apfelbeck 1916: 429–439; Balachowsky 1949a: 158; Barbey 1901: 68; Beal & Massey 1945: 72; Bedel 1888b: 389, 395; Bright 1976d: 114; Bruck 1936a: 40, 108; Chamberlin 1939: 117–120, 1958: 54; Dodge 1938: 14, 16, 23; Eichhoff 1864b: 33, 44, 46, 1878b: 72, 1881a: 64, 165; Erichson 1836: 60; Hagedorn 1910a: 73–74; Karaman 1972: 97; Kostin 1973: 251; Krivolutskaya 1958: 132; LeConte 1876: 387; LeConte & Horn 1883: 523–524; Niisima 1909: 138; Nunberg 1955: 75–80; Pfeffer 1942: 207–222, 1989a: 52; Reitter 1913: 61–64; Saalas 1914: 81–82; Schedl 1946a: 1–15; Schimitschek 1937: 50–52; Spessivtsev 1922: 459, 1931: 87; Swaine 1918a: 39, 54; Trappen 1935: 142; Wood, S. L. 1986a: 76; Zimmermann 1868: 142–143.

***alutaceus* Schwarz** 1894: 17. Lectotype ♂; Tampa, Florida [USA]; USNM, Washington, designated by Wood 1982b: 742.
Figures: Goyer et al. 1980: 21 (adult), MacGown & Nebeker 1977: 63–66 (adult).
Distribution: Antilles Islands (Cuba), North America (Florida, Indiana, Louisiana, Maryland, Mississippi, New Jersey, North Carolina, South Carolina, Virginia, West Virginia in USA).
Hosts: *Picea mariana, Pinus echinata, P. plustrus, P. taeda.*
References: (**ay**) MacGown & Nebeker 1977. (**bv**) Atkinson, Foltz, & Connor 1988; Dixon & Payne 1979b; Turnbow & Franklin 1980. (**cn**) Blackman 1950; Doane et al. 1936; Hopkins 1899c: 448; Smith, J. B. 1901b: 92. (**ec**) Dixon & Payne 1979c; Felt 1906: 753. (**hb**) Atkinson, Foltz, & Connor 1988; Baker, W. L. 1972: 239; Beal & Massey 1945: 72; Blackman 1950; Chamberlin 1939: 120; Deyrup & Atkinson 1987a: 65, 1987b: 67; Doane et al. 1936; Felt 1906: 753; Hopkins 1899c: 448; Pierce, W. D. 1907: 294; Schwarz 1893: 288, 1894a: 17. (**ds**) Atkinson et al. 1991: 160; Beal & Massey 1945: 72; Blackman 1950; Blatchley & Leng 1916: 651; Bright 1985c: 173; Chamberlin 1939: 120; Deyrup & Atkinson 1987a: 65; Drooz 1985: 362; Hagedorn 1910d: 35; Henshaw 1895: 44; Howden & Vogt 1951; Kirk 1970; Kleine 1913b: 114, 1914b: 383, 1934a: 139; Leng 1920: 337; Smith, J. B. 1910: 404; Swaine 1909: 94; Turnbow & Franklin 1980; Ulke 1902: 56; Wood, S. L. 1982b: 742. (**tx**) Beal & Massey 1945: 72; Blatchley & Leng 1916: 651; Bright 1985c: 173; Chamberlin 1939: 120; Goyer et al. 1980: 21; Hagedorn 1910a: 74; MacGown & Nebeker 1977: 63–66; Schwarz 1893: 288, 1894: 17; Swaine 1909: 94; Wood, S. L. 1982b: 742.

***beesoni* Eggers** 1936d: 627. Lectotype ♂; Kaschmir; USNM, Washington, designated by Anderson & Anderson 1971: 6.
Distribution: Asia (Kashmir in India).
Hosts: *Abies webbiana, Cedrus deodara.*
References: (**ds**) Beeson 1961: 286; Bhasin, Roonwal, & Singh 1958. (**tx**) Anderson, W. H. & Anderson 1971: 6; Eggers 1936d: 627; Schedl 1979c: 36.

***borealis* Swaine** 1917: 7. Lectotype ♀; Winnipeg, Manitoba [Canada]; CNCI, Ottawa, designated by Bright 1967b: 673.
Figures: Bright 1976d: 197, 202, 210, Kusch 1967: 10.
Distribution: North America (Alaska/ Alberta, British Columbia, New Brunswick, Northwest

Territories, Nova Scotia, Ontario, Quebec, Saskatchewan in Canada/ Mexico in Mexico/ Arizona, Colorado, Idaho, Indiana, Maine, Michigan, Missouri, Montana, New Mexico, New York, Oregon, Pennsylvania, South Dakota, Utah in USA).

Hosts: *Abies balsamea, A. concolor, A. grandis, A. lasiocarpa, Picea engelmannii, P. glauca, P. rubens, P. sitchensis, Pinus contorta, P. echinata, P. ponderosa.*

References: (**ay**) Thomas, J. B. 1967. (**cn**) Beckwith 1972; Chamberlin 1924; Doane et al. 1936; Keen 1952c: 166; Lindquist, O. H. & Syme 1981: 34; Ruppel 1967: 29; Schuder 1969: 75; Syme & Nystrom 1988: 35. (**ec**) Ashraf & Berryman 1969: 14; Bedard 1933a; DeLeon 1934a; Furniss, R. L. & Carolin 1977: 378; Tomalak, Welch, & Garroway 1989b; Werner & Holsten 1984. (**hb**) Baker, W. L. 1972: 239; Bright 1976d: 115; Bright & Stark 1973: 70; Chamberlin 1939: 119, 1958: 54; Doane et al. 1936; Furniss, R. L. & Carolin 1977: 378; Keen 1952c: 166; Swaine 1918a: 55. (**ds**) Bain 1974: 16; Beaulne 1956; Beckwith 1972a; Bright 1976d: 70; Bright & Stark 1973: 70; Chamberlin 1917: 323, 1925, 1939: 119, 1958: 54; Deyrup & Atkinson 1987b: 67; Dodge 1938; Drooz 1985: 362; Furniss, R. L. & Carolin 1977: 378; Gast et al. 1989: 385; Hopping 1922; Keen 1929a: 14, 1952c: 166; Kleine 1934a: 140; Kusch 1967; Leng 1920: 337; Leonard 1928: 515; Lindquist, O. H. & Syme 1981: 34; Patterson & Hatch 1945: 145; Ruppel 1967: 29; Schedl 1963c: 157, 1964f, 1978e: 37; Schuder 1969: 75; Still, Tidsbury, & Melvin 1974; Thatcher, T. O. 1935: 261; Syme & Nystrom 1988: 35; Werner & Holsten 1984; Wood, S. L. 1948: 14, 1951a: 127, 1957c: 396, 1972a: 415, 1982b: 742. (**tx**) Beckwith 1972a, 1972b; Bright 1967b: 673, 1976d: 115, 197, 202, 210; Bruck 1936a: 108; Chamberlin 1939: 119, 1958: 54; Dodge 1938: 23; Hoebeke 1978; Keen 1929a: 14; Kusch 1967: 10; Lindquist, O. H. & Syme 1981: 34; Pardy 1983; de Ruette 1970: 100; Schedl 1979c: 43; Swaine 1917: 7, 1918a: 54–55; Syme & Nystrom 1988: 35; Thomas, J. B. 1967; Titus, Meikle, & Harrison 1985: 52; Wood, S. L. 1951a: 12, 1957c: 396, 1972a: 415, 1982b: 742.

corrugatus Swaine 1917: 8. Lectotype ♀; North Mountain, Pennsylvania [USA]; CNCI, Ottawa, designated by Bright 1967b: 673. Synonymy: Wood 1957c: 396.

References: (**cn**) Blackman 1950; Swaine 1918a: 54. (**hb**) Blackman 1950; Chamberlin 1939: 119; Swaine 1918a: 54. (**ds**) Anonymous 1926c: 515; Blackman 1950; Chamberlin 1939: 119; Knull 1934: 211; Leng 1920: 338. (**tx**) Bright 1967b: 673; Chamberlin 1939: 119; Hoebeke 1978; de Ruette 1970: 100; Swaine 1917: 8, 1918a: 54–55; Wood, S. L. 1957c: 396.

***cinereus* (Herbst)** 1793: 118 (*Bostrichus*). Syntypes, sex?; Europe; not located.

Figures: Grune 1979: 88, Joly 1976:fig. 140, Pfeffer 1989a:pl. 6, Tsai & Li 1959: 87.

Distribution: Asia (Turkey/ Sakhalin Island, Siberia in E USSR/ Vietnam), Europe (Austria/ Belgium/ Bulgaria/ Corsica/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Hungary/ Italy/ Luxemburg/ Norway/ Poland/ Romania/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia).

Hosts: *Abies* spp., *Picea* spp., *Pinus* spp.

Notes: (3) Schedl 1979c: 125 (*japonicus* Eggers, nomen nudum, synonymy).

References: (**ay**) Escherich 1923b: 464, 481, 556; Feytaud 1950a; Francke-Grosmann 1959; Imhoff 1856: 228; Nunberg 1955: 75; Nusslin 1911a: 89, 277, 338, 377. (**bv**) Nuorteva 1956c: 23, 93; Schnaider 1955: 233. (**cn**) Barbey 1925: 246; Borodajewsky 1915: 1222–1247; Chararas 1961b: 70; Chorbadzhievo 1929; Eckstein 1926: 578; Escherich 1923b: 464, 481, 556; Esterberg 1959; Feytaud 1946, 1950a; Fleischer 1877a; Gabler 1955; Gradojevic 1933: 789–790; Grandi 1951; Hanson, H. S. 1937; Henschel 1895a: 162; Herlein 1878; Joly 1976; Judeich & Nitsche 1895: 527; Kharltonov 1924: 199–204; Koch 1913: 126; Kontkanen 1932: 61; Kurenzov 1935c: 188; Marcu 1926c: 63; Nestertschuk 1930: 176; Nosek 1952b: 100; Nusslin 1913: 259; Pfeffer 1933: 43, 1949b: 150; Pierce, W. D. 1917: 74; Prozorov 1929; Reisch 1960; Rhumbler 1922: 301, 1927: 314; Saalas 1949: 342, 371; Sargos 1947: 8; Schimitschek 1937c: 52, 1955c: 82; Schneider-Orelli & Kuhn 1948: 518; Schuster 1918: 102; Schwerdtfeger 1944a: 177, 1957a: 184; Slander 1958: 150–158; Wachtl 1901: 381, 1926: 578; Wichmann 1927b: 353; Yakubyuk 1928: 102–103, 1959: 40. (**ec**) Apfelbeck 1816b; Balazy & Michalski 1960, 1962b; Barbey 1927; Fleischer 1877a, 1877b; Francke-Grosmann 1931, 1959; Galoux 1947b, 1947c; Grosmann 1931a; Hirschmann & Wisniewski 1983; Kangas 1946b: 23; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1980b, 1983; Kleine 1908c: 185; Kostenko 1929; Kostin 1964: 107; Kurenzov 1934a: 57; Lundberg 1984; Meyer 1918: 178; Michalski & Ratajczak 1989; Nikitsky 1978; Nosek 1952b: 100; Nuorteva 1971; Nusslin 1927: 300; Okolow 1963; Palmen 1946: 194; Pfeffer 1928b: 2, 1932a: 15, 1933: 43, 1949b: 150; Poinar 1975: 151; Ratzeburg 1869a: 79; Roubal 1934a: 86; Ruhm 1956b: 3; Saalas 1949: 342, 371, 1951: 13–14; Schuster 1918: 102; Schwerdtfeger 1944a: 177, 1957a: 184; Sklenkis 1974; Wettstein 1951: 65; Wisniewski 1979b; Zinovjev 1957: 331, 1958: 385. (**hb**) Altum 1881c: 322; Apfelbeck 1916b, 1917; Bach 1864; Barbey 1901: 22, 68, 1906b, 1925: 246; Beffa 1949, 1961; Budkov 1897; Cabral 1959; Cecconi 1924; Chararas 1961b: 70, 1962c: 419; Charvat 1950; Chorbadzhievo 1929; Dombrowsky 1887; Drugesco 1980; Eckstein

1926: 578; Eichhoff 1881a: 44, 166, 1882a: 241; Eidmann 1962: 161; Ekici 1971; Escherich 1923b: 464, 481, 556; Feytaud 1946, 1950a; Fleischer 1877a; Fuchs 1904a; Gabler 1955; Gornostaev 1916: 310, 1917: 308–315; Grandi 1951; Gyorfi 1957; Hagedorn 1903a; Hanson, H. S. 1937: 185–236; Henschel 1876: 240, 1895a: 162; Holmgren 1867: 128; Jakobjuk 1927: 225, 1928: 102; Johnson & Pettinger 1961b: 2; Joly 1976; Judeich & Nitsche 1895: 527; Karpinski 1933b: 28, 1935: 1–86, 1952: 88; Karpinski & Strawinski 1948: 155; Kleine 1908c: 98, 1911: 158; Knotek 1894a: 557, 1897: 160, 1898b: 333; Kostin 1960: 132; Krivolutskaya 1956: 831, 1960: 77; Kurenzov 1948b: 108; Lekander 1959a: 84; Lengerken 1939: 62, 1954: 82; Lesne 1923: 480–481; Masutti 1964; Michalski 1959a: 291; Nordlinger 1856: 26; Nunberg 1929: 102; Nuorteva 1956c: 23, 93; Nusslin 1898: 280, 1913: 259, 1927: 300; Pfeffer 1941b: 2; Qui & Huo 1958: 267; Ratzeburg 1837: 162, 1839: 197; Rhumbler 1922: 301, 1927: 314; Rimski-Korsakov et al. 1949: 288; Rupertsberger 1880: 229; Saalas 1913a: 68, 82, 1949: 342, 371, 1951: 13–14; Schedl 1981b: 66; Schnaider 1954: 171; Schwerdtfeger 1944a: 177, 1957a: 184, 1981: 190; Spessivtsev 1913a: 63, 1923: 204; Stark 1926a: 334, 1952: 247; Tragardh 1914: 94, 1939b: 197; Wachtl 1876a: 458, 1901: 381; Weber, H. 1926: 578; Wichmann 1927b: 353; Yakubyul 1959: 40; Zinovjev 1957: 331, 1958: 385. (**ds**) Acatay 1961: 3; Acloque 1896; Andersch 1851; Arnoldi et al. 1955: 684; Balazy & Michalski 1960; Barthe 1896; Bau 1888; Beffa 1949; Benick 1921; Bielz 1887; Blanchere & Robert 1889; Borchert 1951; Brakman 1966b: 205; Brancsik 1871; Budkov 1897; Buresh & Lazarov 1956; Butovitsch & Heqvist 1947; Cabral 1959; Champion 1894; Chapuis & Candeze 1853; Charvat 1950; Chorbadzhievo 1924d, 1929; Dejean 1821, 1825, 1837; Derenne 1952; Donnisthorpe 1931: 173; Eder 1934; Endrodi 1958b; Ericson & Sandin 1893; Escherich 1923b: 464, 481, 556, 1932b; Esterberg 1928, 1959; Fleischer 1877b; Fuchs 1904a, 1905a; Gaidiene 1976; Gaubil 1849: 126; Gemminger & Harold 1872: 2679; Gerhardt 1896; Gillerfors 1966; Gornostaev 1917; Gozis 1875: 80; Gradojevic 1933; Gredler 1866: 373; Grill 1895: 310; Grouzelle 1905; Grune 1979: 89; Gyllenhal 1827: 624; Hagedorn 1903a, 1910d: 35; Hallett 1923b: 13–14; Hansen, V. 1939, 1956; Heinemann 1908a; Hellen 1947; Henschel 1895a: 162; Heyden, Reitter, & Weise 1883: 181, 1891: 670, 1906: 710; Holdhaus & Deubel 1910: 160; Holmgren 1867: 128; Horion 1951; Jazentkovsky 1912: 288; Joly 1976; Judeich & Nitsche 1895: 527; Kaltenbach 1874: 686; Kamp 1979; Kangas 1945; Karpinski 1925: 216, 1931: 26, 1933b: 28, 1948b: 230, 1952: 88, 1954: 141; Karpinski & Strawinski 1948: 155; Keler 1922b: 211, 1925b: 272; Kersten 1933: 74; Kestercanek 1881a: 12; Klefbeck & Sjoberg 1960: 230; Kleine 1908: 98–101, 1911: 158, 1912a: 263, 267, 1913a: 34, 1913b: 114, 1934a: 140; Knotek 1892a: 37, 1894a: 557, 1898b: 333; Koch 1961: 118; Kontkanen 1932: 61; Kostenko 1929; Kozikowsky 1921: 180; Kraatz 1869: 59; Krivolutskaya 1956: 831, 1960: 77, 1983; Kulczynski 1873: 109; Kurenzov 1934a: 57, 1935c: 188, 1936a: 111, 1936b: 357; Kurir 1947c: 6; Lacordaire 1866: 374; Langhoffer 1915c: 157; Larroche & Torossian 1971; Leclercq 1971; Lentz 1857: 138; Lindberg & Saris 1952: 59; Lindemann 1884b: 264; Lomnicki 1886a: 242, 1913b: 148; Lovendal 1890c: 210; Lucht 1987: 277; Lundblad 1950c: 115; Marcu 1926c: 63; Mequignon 1936; Michalski 1957: 164; Moragues 1889: 32; Munster 1928: 289; Negru 1966b: 400; Nunberg 1928b: 88, 104, 1954: 45; Nuorteva 1971: 71; Nusslin 1898: 280; Orest 1926c: 63; Palm 1948a: 90, 1985; Palmen 1946: 194; Pfeffer 1924b: 471, 1928b: 2, 1931b: 74, 1935: 159, 1947c: 15, 1950b: 74, 1984: 277, 1989a: 53; Pierce, W. D. 1917: 74; Poppius 1900: 108; Prossen 1913: 83; Pruffer 1948: 23; Ratzeburg 1837: 162, 1839: 197; Redtenbacher 1858: 831, 1874: 374; Reitter 1869b: 154, 1894a: 65, 1916: 287; Rimski-Korsakov et al. 1949: 288; Rossenhauer 1856: 301; Roubal 1941: 262; Saalas 1913a: 68, 82, 1916: 110–116, 1919, 1931: 69; Sahlberg 1900: 105; Sainte-Claire & Mequignon 1938: 445; Schaufuss 1915: 1230; Schaum 1859: 95, 1862: 101; Schedl 1959h: 99, 1961b: 184, 1964f, 1967c: 70, 1971d: 429, 1975a: 452, 1980a: 13, 1981b: 66; Scheerpeltz & Winkler 1930: 256; Schilsky 1909: 188; Schiodte 1873: 101; Schneider & Leder 1977: 54; Schwerdtfeger 1981: 190; Seidlitz 1872: 393, 1891a: 561, 1891b: 607; Stark 1925: 78–81, 1926a: 334, 1926b: 103, 1926d: 164–167, 1926j: 125, 1931a: 25, 1931d: 546, 1952: 247; Stein 1868: 114; Stein & Weise 1877: 164; Stierlin 1898: 438; Stierlin & Gautard 1871: 292; Strand 1946: 599; Sturm 1826: 102, 1843: 230; Thomson 1865: 361, 1868: 220; Tragardh 1914: 94, 1939b: 197; Tredl 1907: 12; Wachtl 1876a: 458; Wahnschaffe 1863: 230; Wichmann 1927a: 66; Yanovskii 1974, 1977a, 1986: 64, 1989; Yanovskii & Tegshzhargal 1985: 408; Zinovjev 1955: 187. (**tx**) Acloque 1896; Bach 1854, 1864; Balachowsky 1949a: 160; Barbey 1901: 22, 68, 1906b; Beffa 1949, 1961; Bertolini 1872; Brancsik 1871; Cabral 1959; Castelnau 1840; Chapuis & Candeze 1853; Charvat 1950; Chorbadzhievo 1924d; Csiki 1909; Dejean 1821, 1825; Doebner 1860; Dombrowsky 1887; Duffy 1953; Eggers 1911a, 1923: 134–135, 1929e: 43, 1933f: 5, 1940g: 36; Eichhoff 1864b: 33, 1868b: 404, 1878b: 75, 1881a: 44, 166, 1883a: 108, 131; Endrodi 1957b; Erichson 1836b: 61; Escherich 1923b: 464, 481, 556; Fauvel 1889; Ferrant 1911; Ferrari 1867a: 6, 79, 1867b: 106, 113; Fleischer 1921, 1927; Formanek 1907: 31; Gabler 1955; Gebien 1907: 197; Grune 1979: 88–89; Gyllenhal 1813: 370, 1827: 624; Hagedorn 1910a: 74; Hansen, V. 1956; Henschel 1876a: 240,

1895a: 162; Herbst 1793: 116, 118; Joly 1976:fig. 140; Judeich & Nitsche 1895: 527; Kalina 1970: 123; Karpinski & Strawinski 1948: 155; Knotek 1892a: 37; Koch 1913: 126, 1928: 102, 1932: 105; Krivolutskaya 1956: 831, 1958: 133; Kuhnt 1913: 1054; Kurenzov 1941a: 138, 1948b: 108; Lacordaire 1866: 374; Letzner 1891: 375; Lovendal 1889b: 50, 1890c: 210, 1898: 122; Lucas 1920: 212; Lucht 1987: 277; Negru 1966b: 400; Niisima 1909: 139; Nordlinger 1848: 241, 1856: 26; Nunberg 1954: 45, 1956: 75; Nusslin 1911a: 277, 338, 377, 89; Pfeffer 1932b: 17, 1933, 1941b: 2, 1942c: 208, 1947e: 15, 1955c: 155, 1989a:pl. 6; Portevin 1935: 323; Quaschik 1953: 35; Ratzeburg 1837: 162, 1839: 197; Redtenbacher 1849a: 792, 1849b: 26, 1858: 831, 1874: 374; Reitter 1894a: 65, 1913a: 62, 1916: 287; Rhumbler 1922: 301, 1927: 314; Rupertsberger 1880: 229; Saalas 1913a: 68, 82, 1919: 1–415, 1949: 342, 371; Sahlberg 1836: 154, 1839: 140; Schedl 1934f: 1637, 1946a: 8, 1952f: 87, 1959h: 99,1980a: 13, 1981b: 66; Schimitschek 1937c: 52, 1955c: 82; Seidlitz 1872: 393, 1891a: 561, 1891b: 607; Sokanovskii 1954: 16, 1958: 38; Spessivtsev 1913a: 63, 1922a: 468, 1923: 468, 490, 1925a: 170, 1925b: 15, 1931: 45; Stark 1952: 247; Stierlin 1898: 438; Stresemann et al. 1989: 353; Thomson 1865: 361, 1868: 220; Tsai & Li 1959: 87. (**ms**) Escherich 1932b; Heinemann 1908a; Lekander 1959a: 84; Lucas 1920: 212; Michalski 1959a: 291.

tenerrimus Sahlberg 1836: 140 (*Hylesinus*). Syntypes, sex?; Finland; not located. Synonymy: Schedl 1946a: 9.

References: (**hb**) Wachtl 1876a: 458. (**ds**) Bedel 1888b: 395, 413; Calwer 1884, 1893; Hagedorn 1910d: 35; Schaum 1862: 101; Schilsky 1909: 188; Stein 1868: 113; Stein & Weise 1877: 164; Wachtl 1876a: 458. (**tx**) Bedel 1888b: 395, 413; Ferrari 1867a: 6; Gemminger & Harold 1872: 2675; Letzner 1891: 375; Sahlberg 1836: 140; Schedl 1946a: 8–9.

atticus Eggers 1911: 120. Syntypes, sex?; Attica; Landesmus (Sarajevo) and Eggers Collections, 1 Eggers syntype in NHMW, Wien. Synonymy: Schedl 1946a: 9.

Notes: (1) Schedl 1979c: 31 (citation of holotype invalid).

References: (**ds**) Kleine 1913b: 114; Normand 1949: 104; Pfeffer 1947d: 128; Schaufuss 1915: 1230. (**tx**) Balachowsky 1949a: 160; Eggers 1911: 120; Pfeffer 1942b: 208–209, 1955a: 152; Reitter 1913a: 63–64; Schedl 1934f: 1637, 1946a: 9, 1979c: 31.

corsicus Eggers 1923: 135. Lectotype ♀; Asco, Foret Carozzica, Corsica; USNM, Washington, designated by Anderson & Anderson 1971: 10. Synonymy: Schedl 1946a: 9.

References: (**ds**) Pfeffer 1947d: 127; Sainte-Claire & Mequignon 1938: 445. (**tx**) Anderson, W. H. & Anderson 1971: 10; Balachowsky 1949a: 160; Eggers 1923: 135; Pfeffer 1942b: 208–289; Schedl 1934f: 1637, 1946a: 9, 1979c: 66.

subcribrosus Eggers 1933f: 5. Holotype, sex?; Bruck a.d. Mur (Steiermark); USNM, Washington. Synonymy: Schedl 1946a: 9.

References: (**ay**) Nunberg 1955: 75. (**bv**) Nuorteva 1956c: 28. (**cn**) Pfeffer 1948a: 800, 1950c: 2. (**ec**) Kangas 1946b: 23; Lundberg 1984; Nuorteva 1971: 70; Pfeffer 1950c: 2, 1955b: 84. (**hb**) Karpinski 1952: 88; Kurenzov 1948a: 51, 1950d: 204; Nuorteva 1956c: 28; Pfeffer 1941c: 5; Schnaider 1954: 174; Stark 1952: 246. (**ds**) Arnoldi et al. 1955: 686; Bejer-Petersen & Jorum 1977: 21; Bistrom & Vaisanen 1988: 42; Brakman 1966b: 205; Hansen, V. 1939, 1956, 1964: 460; Hellen 1947; Horion 1935; Kangas 1945; Karmizaki 1952: 85; Karpinski 1952: 88, 1954: 141–142; Klefbeck & Sjoberg 1960: 230; Krivolutskaya 1983; Linnman 1965: 27; Lundberg 1979: 31, 1980: 149; Nuorteva 1971: 67; Palm 1946: 122; Pfeffer 1930a: 16, 1931b: 74, 1947c: 3; Reitter 1916: 350; Roubal 1935b: 72, 1941: 262; Stark 1952: 246; Strand 1946: 599; Wegelius 1960: 106; Yanovskii & Tegshzhargal 1984: 415; Zinovjev 1955: 187. (**tx**) Anderson, W. H. & Anderson 1971: 32; Balachowsky 1949a: 160; Eggers 1933f: 5; Hansen, V. 1956, 1964: 460; Michalski 1969b: 567; Nunberg 1956: 75; Pfeffer 1932b: 24, 1941c: 5, 1942b: 208, 1947e: 3, 1955a: 156; Reitter 1916: 350; Schedl 1946a: 9, 1979c: 243; Sokanovskii 1954: 16; Stark 1952: 246.

apfelbecki Eggers 1940g: 36. Lectotype, sex?; Bosnien (Borke bei Sarajevo); USNM, Washington, designated by Anderson & Anderson 1971: 4. Synonymy: Schedl 1946a: 9.

References: (**cn**) Schimitschek 1944: 168, 1952c: 59. (**ec**) Galoux 1947b; Schimitschek 1941a: 305. (**hb**) Schimitschek 1944: 168. (**tx**) Anderson, W. H. & Anderson 1971: 4; Balachowsky 1949a: 160; Eggers 1940g: 36–40; Pfeffer 1942b: 208, 212, 1955a: 153; Schedl 1946a: 9, 1979c: 22.

***concolor* (Wollaston)** 1864: 263 (*Aphanarthrum*). Lectotype, sex?; Canary Islands: Palma; BMNH, London, designated by Israelson 1972: 257.

Figures: Israelson 1972:fig. 25 (male genitalia).

Distribution: Africa (Ferro, Hierro, Palma, Tenerife in Canary Islands).

Hosts: *Pinus canariensis*.

References: (**ay**) Israelson 1972: 257. (**cn**) Souphieff & Scherbinovskaja 1937: 47. (**ds**) Gemminger & Harold 1872: 2679; Hagedorn 1910d: 36; Kleine 1913b: 114, 1914a: 21; Peyerimhoff 1933b: 371; Schedl 1971d: 425; Schedl, Lindberg, & Lindberg 1959: 17; Souphieff & Scherbinovskaja 1937: 47. (**tx**) Eggers 1923: 135; Eichhoff 1878b: 75; Ferrari 1867a: 6, 1868: 254; Hagedorn 1910a:

74; Israelson 1972: 254, 257; Pfeffer 1942b: 207, 213; Schedl 1934f: 1637, 1946a: 12, 1979c: 61; Schedl, Lindberg, & Lindberg 1959: 17; Wollaston 1864: 263, 1865: 244, 1871: 264.

***hispidulus* Thomson** 1870: 338. Syntypes, sex?; Norra Skane, Sweden; not located.
Figures: Grune 1979: 86, Pfeffer 1989a:pl. 6, Tsai & Li 1959: 88.
Distribution: Asia (Sakhalin Island, Siberia in E USSR), Europe (Austria/ Bulgaria/ Czechoslovakia/ Denmark/ Finland/ Germany/ Hungary/ Norway/ Poland/ Sweden/ W USSR).
Hosts: *Picea* spp., *Pinus* spp., rare in *Abies* spp., *Larix europea*.
References: (**bv**) Grune 1979: 87; Nuorteva 1956c: 28; Rozhkov 1970: 140. (**cn**) Chorbadzhievo 1929; Esterberg 1959; Kurenzov 1935c: 192; Nestertschuk 1930: 176; Nosek 1951: 106; Pfeffer 1949b: 150, 1950c: 1; Saalas 1949: 342, 371. (**ec**) Apfelbeck 1816b; Balazy & Michalski 1960, 1964b; Kangas 1946b: 22; Kielczewski 1976; Kielszewski, Moser, & Wisniewski 1983; Kielszewski & Wisniewski 1978, 1983; Kurenzov 1934a: 54, 57; Lundberg 1984; Michalski & Ratajczak 1989; Mokrzecki 1923: 32; Nosek 1951: 106; Nuorteva 1956a: 18, 1971; Okolow 1963; Pfeffer 1932a: 11, 1949b: 150, 1950c: 1; Poinar 1975: 151; Saalas 1917a: 18, 1928: 649, 1949: 342, 371, 1951: 18; Sklenkis 1974. (**hb**) Apfelbeck 1916b, 1917; Chorbadzhievo 1929; Karpinski 1933b: 28, 1935: 1–86; Karpinski & Strawinski 1948: 155; Krivolutskaya 1956: 831, 1960: 78, 1973: 134; Kurenzov 1935a: 30, 1948b: 108, 1950d: 234; Lengerken 1939: 62, 1954: 82; Nunberg 1929: 102; Nuorteva 1956c: 28; Pfeffer 1941c: 5; Postner 1974: 422; Rozhkov 1970: 140; Saalas 1913a: 68, 82, 1949: 342, 371, 1951: 18; Schedl 1981b: 66; Spessivtsev 1923: 204; Stark 1952: 252; Tschorbadjiev 1929: 165. (**ds**) Ammann & Knabl 1923; Balazy & Michalski 1960; Bangsholt 1975: 95; Bejer-Petersen & Jorum 1977: 20; Bistrom & Vaisanen 1988: 42; Brakman 1966b: 205; Buresh & Lazarov 1956; Butovitsch & Heqvist 1947; Chorbadzhievo 1929; Eder 1934; Endrodi 1958b; Ericson & Sandin 1893; Escherich 1932b; Esterberg 1959; Grill 1895: 310; Grune 1979: 87; Hagedorn 1910d: 36; Hansen, V. 1929: 140–141, 1939, 1956, 1964: 460; Hellen 1947; Heyden, Reitter, & Weise 1891: 670, 1906: 710; Heyrovsky 1929: 37–38; Holzel 1951; Horion 1935, 1951; Janetschek 1957: 262; Kangas 1945; Karpinski 1931: 19, 26, 1933b: 28, 1948b: 229; Karpinski & Strawinski 1948: 155; Keler 1922b: 210; Klefbeck & Sjoberg 1960: 230; Kleine 1913b: 114, 1934a: 140; Krivolutskaya 1956: 831, 1960: 78, 1965a: 232, 1973: 134, 1983; Kurenzov 1934a: 54, 57, 1935a: 30, 1935c: 192, 1936b: 351, 1938a: 63; Lindberg & Saris 1952: 59; Lucht 1987: 277; Lundblad 1950c: 115; Mahler 1987: 232; Nunberg 1927a: 213, 1928b: 85, 88, 104, 1954: 45; Nuorteva 1971: 67; Palm 1946: 122; Pfeffer 1923b: 106, 1930b: 120, 1931b: 75, 1932; 1936b: 90, 1947e: 3, 1950b: 74, 1989a: 53; Postner 1974: 422; Reitter 1894a: 64, 1913: 61; 1916: 287, 350; Roubal 1941: 262; Rozhkov 1970: 140; Saalas 1913a: 68, 82, 1914: 304–306, 1916: 110–116, 1917a: 18, 1919, 1931: 68; Sahlberg 1900: 105; Sainte-Claire 1914: 471; Schaufuss 1915: 1230; Schedl 1980a: 13, 1981b: 66; Stark 1931a: 25, 1952: 252; Strand 1946: 599; Tschorbadjiev 1929: 165; Wanka 1917: 282; Wegelius 1960: 106; Wichmann 1927a: 65–66; Wiren 1945: 43; Yanovskii & Dmitrienko 1983; Yanovskii & Tegshzhargal 1985: 415; Zinovjev 1955: 187. (**tx**) Eggers 1914, 1932e: 81; Endrodi 1957a: 307, 1957b; Fleischer 1927; Grune 1979: 86; Hagedorn 1919d: 74; Hansen, V. 1956; Karpinski & Strawinski 1948; Krivolutskaya 1956: 831, 1958: 133; Kurenzov 1941a: 26, 36, 139–140, 1948b: 108, 1956: 826–839; Letzner 1891: 374; Lucht 1987: 277; Nunberg 1954: 45; Pfeffer 1932b: 17, 1941c: 5, 1942b: 208–209, 213, 1947e: 3, 1989a: pl. 6; Postner 1974: 422; Reitter 1894a: 64, 1913a: 61, 1916: 287, 350; Saalas 1913a: 68, 82, 1949: 371, 432; Schedl 1934f: 1637, 1946a: 8, 1980a: 13; Sokanovskii 1929: 670–672; Spessivtsev 1922a: 468, 491, 1923: 200–214, 1925a: 170, 1925b: 15, 1931: 46; Stark 1952: 252; Thomson 1870: 338; Tsai & Li 1959: 88. (**ms**) Escherich 1932b; Schimitschek 1930b: 407.

***mediterraneus* Eichhoff** *in* Puton 1869: 41). Syntypes, sex?; St. Tropez, Hyeres; 1 lost with Hamburg Museum, others not located.
Figures: Grune 1979: 88, Questienne 1979: 114.
Distribution: Africa (Algeria/ Morocco/ Tunisia), Asia (Israel/ Turkey), Europe (Corsica/ Cyprus/ France/ Greece/ Italy/ Portugal/ Spain).
Hosts: *Pinus pinaster, P. brutia, P. halepensis, P. nigra, P. pinea*.
Notes: (3) Eichhoff validated the name in Puton 1869: 41, then republished it in Eichhoff 1872d: 139.
References: (**bv**) Grune 1979: 117; Mendel, Madar, & Golan 1985. (**cn**) Barbey 1922a; Espanol 1964a; Grandi 1951; Joly 1976; Questienne 1979: 117. (**ec**) Barbey 1924b; Halperin & Holzschuh 1984: 24. (**hb**) Barbey 1906b: 217–220; Chararas 1962c: 423; Dombrowsky 1887; Eichhoff 1869: 41 (in Puton), 1881a: 44, 168; Grandi 1951; Halperin & Holzschuh 1984: 24; Henschel 1895a: 162; Joly 1976; Mendel, Madar, & Golan 1985; Postner 1974: 423; Puton 1869: 41–42; Questienne 1979: 117; Wachtl 1876a: 458; Zocchi 1959: 105. (**ds**) Barbey 1922a, 1924b; Binaghi 1967; Calwer 1884, 1893; Fauvel 1885; Gemminger & Harold 1872: 2679; Georghiou 1977: 73; Gozis 1875: 80; Grune 1979: 89; Halperin 1966: 69; Halperin & Holzschuh 1984: 24; Henschel 1895a: 162; Joly 1976; Moragues 1889: 32; Pfeffer 1947d: 126; Pinheiro 1965: 359–364; Postner 1974: 423; Schedl 1961b:

184, 1964f, 1967c: 70, 1969g: 291, 1971d: 427, 1972n: 350, 1978e: 36, 1979i: 291; Schilsky 1909: 188; Stein & Weise 1877: 164; Wachtl 1876a: 458; Zocchi 1959: 105. (**tx**) Balachowsky 1949a: 161; Barbey 1906b; Dombrowsky 1887; Eggers 1923: 134; Eichhoff 1869: 41 (in Puton), 1872d: 139, 1878b: 81, 1881a: 44, 168, 1883a: 108, 131; Fauvel 1885; Grune 1979: 88, 89; Henschel 1895a: 162; Joly 1976; Pfeffer 1942b: 208, 212, 1955a: 152; Postner 1974: 423; Questienne 1979: 114; Rey 1892b: 30; Schedl 1934f: 1637, 1946a: 10, 1960: 163.

dubius Eichhoff 1875a: 139. Holotype, sex?; Pyrenaei; Hamburg Museum, lost. Synonymy: Schedl 1960b: 163.

References: (**hb**) Dombrowsky 1887; Eichhoff 1881a: 44, 168; Henschel 1895a: 162; Wachtl 1876a: 458. (**ds**) Barthe 1896; Calwer 1884, 1893; Gemminger & Harold 1872: 2679; Gozis 1875: 80; Henschel 1895a: 162; Heyden, Reitter, & Weise 1883: 181, 1891: 670, 1906: 710; Schedl 1964f; Schilsky 1909: 188; Stein & Weise 1877: 164; Wachtl 1876a: 458. (**tx**) Dombrowsky 1887; Eichhoff 1875a: 139, 1878b: 82, 1881a: 44, 168, 1883a: 108, 131; Fauvel 1887; Henschel 1895a: 162; Pfeffer 1942: 218; Reitter 1913a: 62–63; Schedl 1934f: 1637, 1946a: 11, 1960b: 163.

***numidicus* Ferrari** 1867a: 6. Syntypes ♂; Algeria; NHMW, Wien?

Figures: Grune 1979: 88.

Distribution: Africa (Algeria/ Tunisia), Asia (Turkey), Europe (Bulgaria/ Corsica/ France/ Greece/ Hungary/ Italy/ Spain/ W USSR/ Yugoslavia).

Hosts: *Abies pinsapo, A. numidica, Cedrus libanotica, Pinus halepensis, P. pinaster, P. pithyusa, P. leucodermis.*

References: (**bv**) Grune 1979: 89. (**cn**) Bezares 1929: 38–42; Grandi 1951; Kailidis & Georgevits 1972; Koch 1913: 127; Schimitschek 1941: 171, 1952c: 69; Strohmeyer 1930: 7; Wachtl 1901: 381. (**ec**) Halperin & Holzschuh 1984: 25; Kleine 1908c: 185; Novak, P. 1952: 414; Schimitschek 1941a: 320. (**hb**) Cecconi 1924; Dombrowsky 1887; Grandi 1951; Halperin & Holzschuh 1984: 25; Knotek 1898b: 333, 1899b: 14, 1901: 573; Masutti 1964; Peyerimhoff 1919: 253–254; Postner 1974: 423; Puton 1869: 41; Schimitschek 1944: 171; Stark 1952: 249; Strohmeyer 1930: 7; Wachtl 1876a: 458, 1901: 381. (**ds**) Barthe 1896; Cecconi 1897; Eggers 1912f; Escalera 1919; Friederichs 1919; Ganglbauer 1904; Grune 1979: 89; Hagedorn 1910d: 36; Halperin & Holzschuh 1984: 25; Heyden, Reitter, & Weise 1883: 181, 1891: 670; Kailidis & Georgevits 1972; Kleine 1913a: 34, 1913b: 114, 1914a: 16, 1934a: 140; Knotek 1898b: 333, 1899b: 14, 1901: 573; Langhoffer 1915c: 157; Mequignon 1936: 54; Normand 1937: 268; Novak, P. 1952: 414, 1964; Paganetti-Hummler 1901: 150; Peyerimhoff 1919: 253–254, 1933b: 367; Pfeffer 1942b: 208, 212, 1947d: 128, 1984: 277; Pittioni 1943: 176; Postner 1974: 423; Ragusa 1924: 116; Reitter 1894a: 65; Sahlberg 1903b: 63; Sainte-Claire & Mequignon 1938: 445; Schedl 1938d: 450, 1964f, 1967c: 70, 1971d: 427; Schilsky 1909: 188; Stark 1927b: 88, 1952: 249; Stein 1868: 114; Stein & Weise 1877: 164; Tredl 1907: 12; Wachtl 1876a: 458. (**tx**) Balchowsky 1949a: 161; Ceballos 1945; Csiki 1909; Dombrowsky 1887; Eggers 1911a: 123, 1912f: 29, 1923: 133–139; Eichhoff 1868d: 419; Fauvel 1889; Ferrari 1867a: 6, 79, 1867b: 106; Gebien 1907: 197; Grune 1979: 88, 89; Hagedorn 1910a: 74; Koch 1913: 127; Peyerimhoff 1911: 314; Portevin 1935: 323; Postner 1974: 423; Reitter 1894a: 65, 1913a: 63; Rey 1892b: 30; Schedl 1934f: 1637, 1946a: 10, 13; Stark 1952: 249; Strohmeyer 1929: 182. (**ms**) Eichhoff 1868d: 419.

numidicus abbreviatus Eggers 1911: 123. Lectotype, sex?; Mostar blato (Herzegowinan); USNM, Washington, designated by Anderson & Anderson 1971: 3. Synonymy: Schedl 1946a: 13.

References: (**ds**) Pfeffer 1947d: 128. (**tx**) Anderson, W. H. & Anderson 1971: 3; Eggers 1911: 123; Pfeffer 1942b: 208; Reitter 1913a: 63; Schedl 1934f: 1637, 1946a: 13, 1979c: 173.

brevipennis Reitter 1913a: 63. Syntypes, sex?; Attica, Greece; NHMB, Budapest. Synonymy: Pfeffer 1942: 217.

References: (**ds**) Arnoldi et al. 1955: 684; Schaufuss 1915: 1230. (**tx**) Pfeffer 1942: 217; Reitter 1913a: 63; Schedl 1934f: 1637.

barbeyi Strohmeyer 1929b: 182. Holotype, sex?; Sierra de Ronda in Sudspanien; Strohmeyer Collection. Synonymy: Schedl 1946a: 15.

References: (**cn**) Strohmeyer 1930: 7. (**hb**) Strohmeyer 1930: 7. (**ds**) Kleine 1934a: 139; Peyerimhoff 1933b: 362; Pfeffer 1942: 220. (**tx**) Balachowsky 1949a: 161; Schedl 1934f: 1637, 1946a: 15; Strohmeyer 1929b: 182, 1930: 1–7.

***pusillus* (Gyllenhal)** 1813: 371 (*Bostrichus*). Syntypes, sex?; presumably Sweden; presumably at UZI, Uppsala.

Figures: Balachowsky 1949a: 162 (adult), Grune 1979: 86, Kalina 1970: 122, Nobuchi 1966d:pl. 2, Postner 1974: 421.

Distribution: Africa (Algeria/ Egypt/ Libya/ Morocco/ Tunisia), Asia (Xizang [Tibet] in China/ Himachal Pradesh, Kashmir, Punjab, Uttar Pradesh in India/ Japan/ Korea/ Kuril Islands/ Nepal/ Pakistan/ Taiwan/ Turkey/ Sakhalin Island, Siberia in E USSR), Europe (Austria/ Belgium/ Corsica/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Hungary/ Italy/ Lithuania/ Luxemburg/ Netherlands/ Norway/ Poland/ Portugal/ Romania/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia), introduced into North America (New Brunswick, Nova Scotia, Ontario, Quebec in Canada/ Connecticut,

Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island in USA).

Hosts: *Abies* spp., *Pinus* spp., *Picea* spp., *Cedrus deodara, C. libani*.

References: (**ay**) Chararas 1956c; Escherich 1923b: 481, 602; Feytaud 1950a; Imhoff 1856: 228; Klimesch 1914: 215; Lekander 1959b: 60; Nunberg 1928a: 140, 1955: 76; Scherb 1971. (**bv**) Chararas & Deschamps 1962; Grune 1979: 87; Naumann-Etienne 1978a; Nuorteva 1956c: 93; Rozhkov 1970: 140. (**cn**) Baisch 1954: 322; Barbey 1906a, 1922a; Borcea 1924; Bromley 1928: 89–110; Brown, R. M. & Winter 1981; Chamberlin 1924; Chararas 1960a: 29, 1961b: 70, 1961c: 94; Chorbadzhievo 1929; Eckstein 1926: 578; Escherich 1923b: 481, 602; Esterberg 1959; Feytaud 1946, 1950a; Fleischer 1877a; Gabler 1955; Grandi 1951; Gusev 1928: 144; Herlein 1878; Hess 1898: 350; Hess & Beck 1914: 266, 1927: 321; Hopkins 1899c: 365, 448; Inouye 1955; Inouye & Yamaguchi 1955a: 235; Johnson 1897: 78–79; Joly 1976; Judeich & Nitsche 1895: 527; Kailidis 1964a; Kailidis & Georgivits 1972; Kalandra 1944; Kamp 1950; Kholodkovskii 1912: 305; Koch 1913: 127; Koppen 1882: 236, 251; Kovacevic 1952: 69, 1957: 67; Lindquist, O. H. & Syme 1981: 34; Marcu 1926c: 62; Muller 1912: 184; Nestertschuk 1930: 176; Nosek 1951: 106, 1952b: 100; Nusslin 1913: 227; Pfeffer 1950c: 1; Pierce, W. D. 1917: 69; Rhumbler 1922: 301, 1927: 314; Russo 1946a: 24, 42, 1946b: 312; Saalas 1919: 1–415, 1949: 342, 371; Sargos 1947: 8; Schenk 1926: 37–69; Schimitschek 1937c: 52, 1938b: 114, 1955c: 82; Schneeberg 1925: 495; Schwerdtfeger 1944a: 181, 1957a: 187; Shiraki 1952; Smith, J. B. 1900: 365; Stebbing 1914: 499; Strohmeyer 1950: 21; Syme & Nystrom 1988: 35; Thalenhorst 1950: 90; Thomson 1939: 200; Wachtl 1901: 381; Weber, H. 1926: 578; Wolff & Krausse 1922: 88. (**ec**) Apfelbeck 1916b; Baisch 1954: 322; Balazy 1965a; Balazy & Michalski 1960, 1964b; Barbey 1906a; Beeson 1922c; Beran 1936; Blackman & Stage 1918: 55; Chararas 1959c, 1960a: 29, 1964b; Felt 1906: 752; Fleischer 1877a, 1877b; Fuchs 1930, 1938; Galoux 1947b, 1947c; Grunwald 1986; Inouye & Yamaguchi 1955a: 235; Inouye et al. 1955: 60–61; Kangas 1946b: 22; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1980a, 1983; Kleine 1908c: 185, 1909a: 46, 76, 1944: 70; Kostin 1964: 107; Krogerus 1927: 123; Kurenzov 1934a: 57; Langor 1985; Lundberg 1984; Masutti 1959: 268, 298; Michalski & Ratajczak 1989; Naumann-Etienne 1978a; Nishiguchi 1960c; Nosek 1951: 106, 1952b: 100; Nuorteva 1956a: 18, 1971: 70; Nusslin 1927: 300; Okolow 1963; Palmen 1946: 194; Perris 1852: 497, 1853: 571, 1854a: 96, 1856a: 201, 1862: 212; Pfeffer 1923a: 331, 1932a: 11, 1950c: 1; Poinar 1975: 151; Ratzeburg 1869a: 79; Roubal 1934a: 86; Ruhm 1956b: 3; Russo 1946a: 24, 42; Saalas 1917a: 18, 1949: 342, 371, 1951: 13–14; Scheucher 1959: 151; Schimitschek 1930a: 339, 1931b: 487; Schwerdtfeger 1944a: 181, 1957a: 187; Sedlaczek 1908: 67, 1935a: 163; Seitner 1913a: 27; Stebbing 1914: 499; Woodring & Moser 1970. (**hb**) Altum 1881c: 286; Apfelbeck 1916b, 1917; Bach 1854: 137, 1864; Barbey 1901: 22, 68, 1913; Beeson 1922c: 495; Beran 1936; Blackman & Stage 1918; Borcea 1924; Bukowsky 1930; Cabral 1959; Cecconi 1906, 1924; Chamberlin 1939: 118; Chararas 1956c; Charvat 1950; Chittenden 1890, 1899a; Chorbadzhievo 1929; Deyrup & Atkinson 1987b: 67; Dombrowsky 1887; Eckstein 1897, 1926: 578; Eichhoff 1881a: 44, 165, 1882a: 241; Escherich 1923b: 481, 602; Essig 1942: 604; Everts 1903: 753; Felt 1906: 752; Feytaud 1946, 1950a; Fleischer 1877a; Fuchs 1904a, 1907; Gabler 1955; Gornostaev 1916: 310; Grandi 1951; Gyorfi 1957; Hagedorn 1903a; Hartig 1834: 110–112; Henschel 1876a: 34, 240, 1885b, 1895a: 162; Hess 1898: 350; Hess & Beck 1914: 266, 1927: 321; Holmgren 1867: 128; Hopkins 1899c: 365, 448; Inouye et al. 1955: 60–61; Jakobjuk 1927: 225; Judeich & Nitsche 1895: 527; Karpinski 1933b: 28; Karpinski & Strawinski 1948: 155; Karsch 1883: 143; Keller 1910: 26; Kholodkovskii 1912: 305; Knotek 1894a: 557, 1897: 160, 1898b: 333; Krivolutskaya 1956: 832; Kurenzov 1935a: 30, 1948b: 108, 1950d: 234; Landin 1953: 24, 99; Lekander 1959b: 60; Lengerken 1939: 61, 1954: 82; Lunardoni & Leonardi 1889: 456; Marcu 1941: 403; Masutti 1959: 268, 298; Niisima 1908b: 18; Nordlinger 1856: 26; Nunberg 1929: 102, 1947c: 106; Nuorteva 1956c: 93; Nusslin 1898: 280, 1913: 227, 1927: 300; Perris 1852: 497, 1856a: 201–202; Peyerimhoff 1919: 169; Pfeffer 1941c: 5; Postner 1974: 422; Puton 1869: 41; Ratzeburg 1837: 139, 162, 1839: 165, 196; Rhumbler 1922: 301, 1927: 314; Rupertsberger 1879: 231, 1880: 228; Russo 1946b: 297, 312; Saalas 1949: 342, 371, 1951: 13–14; Schimitschek 1930a: 339; Schwarz 1894a: 17; Schwerdtfeger 1944a: 181, 1957a: 187, 1981: 193; Sedlaczek 1935a: 163; Spessivtsev 1913a: 63, 1923: 204; Stark 1926a: 334, 1952: 250; Stebbing 1914: 327, 499; Swaine 1907: 191, 1912b: 141; Tragardh 1914: 93, 1939b: 197; Tschorbadjiev 1929: 165; Wachtl 1876a: 458, 1901: 381; Weber, H. 1926: 578; Wolff & Krausse 1922: 88. (**ds**) Ammann & Knabl 1913, 1923; Andersch 1851; Audras & Schaefer 1957; Balazy & Michalski 1960; Barbey 1922a; Barthe 1896; Bau 1888; Bedel 1888b: 395, 413; Beeson 1922c; Bejer-Petersen & Jorum 1977: 20; Bickhardt 1916; Bielz 1851, 1887; Blanchere & Robert 1889; Blandford 1894c; Blatchley & Leng 1916: 651; Borcea 1924: 221–260; Borchert 1951; Borodajewsky 1915: 1222–1247; Brakman 1966b: 205; Brancsik 1871, 1906; Bright 1976d: 114; Brown, R. M. & Winter 1981; Bucking 1932; Bukowsky 1930; Butovitsch &

Heqvist 1947; Cabral 1959; Calwer 1884, 1893; Carpentier & Delaby 1908; Cecconi 1906; Chamberlin 1939: 118; Chapuis & Candeze 1853; Charvat 1959; Chittenden 1890, 1899a; Cho 1957; Choo 1983; Choo, Woo, & Nobuchi 1988a: 134; Chorbadzhievo 1924d, 1929; Dejean 1821, 1825, 1837; Deyrup 1981b: 6; Deyrup & Atkinson 1987b: 67; Donisthorpe 1931: 173; Drooz 1985: 362; Eder 1934; Eggers 1904; Endrodi 1958b; Ericson & Sandin 1893; Escherich 1923b: 481, 602, 1932b; Esterberg 1928, 1959; Everts 1922: 640; Fauvel 1885; Favre 1890; Fleischer 1877b; Fleischer et al. 1923; Fricken 1889: 342; Fuchs 1904a, 1905a, 1907; Gaubil 1849: 126; Gemminger & Harold 1872: 2679; Gobang 1855: 745; Gobbi 1989: 61; Gornostaev 1917; Gozis 1875: 80; Gredler 1866: 373; Grill 1895: 310; Grouzelle 1905; Grune 1979: 87; Gyllenhal 1827: 624; Hagedorn 1903a, 1910d: 36; Hamilton 1893: 143, 1894b: 407; Hansen, V. 1939, 1956, 1964: 460; Heinemann 1908a; Heller 1947; Hennig 1954: 257; Henschel 1895a: 162; Henshaw 1887: 8, 1895: 44; Heyden 1876: 299, 1890: 132; Heyden, Reitter, & Weise 1883: 181, 1891: 670, 1906: 710; Holmgren 1867: 128; Holzel 1946: 81; Hopkins 1893a: 143, 1893b: 213; Horion 1951; Hormuzaki 1891: 174; Hubault 1923b; Jazentkovsky 1912: 288; Joly 1976; Judeich & Nitsche 1895: 527; Kailidis 1964a: 41–54; Kailidis & Georgevits 1972; Kaltenbach 1874: 685; Kangas 1945; Karpinski 1925: 216, 1926: 82, 1931: 26, 1933b: 28, 1935: 1–86, 1948b: 230; Karpinski & Strawinski 1948: 155; Keler 1922b: 211, 1925b: 271; Keller 1910: 26; Kersten 1933: 77; Kestercanek 1881a: 12; Kiefer et al. 1942: 528; Kharitonov 1924: 199–204; Klefbeck & Sjoberg 1960: 230; Kleine 1908: 98–101, 1911: 158, 1912a: 262, 267, 1913a: 34, 1913b: 114, 1914a: 16, 1914b: 256, 1934a: 140; Kloft & Hinks 1945: 218; Knotek 1892a: 36, 1894a: 557, 1898b: 333; Ko 1969: 276; Koltze 1901: 153; Kono 1938b: 64; Kono & Tamanuki 1939: 93; Koppen 1882: 236, 257; Kotula 1873b: 80; Kovacevic 1957: 67; Kozikowsky 1921: 180; Kraatz 1869: 59; Kraemer 1948: 133; Krivolutskaya 1956: 832, 1960: 78, 1965: 232, 1973: 134, 1983; Kurenzov 1934a: 57, 1935a: 30, 1936b: 350; Kurir 1947c: 14; Lacordaire 1866: 374; Langhoffer 1915c: 157; Leclercq 1971; Leiler & Prutz 1977; Leng 1918: 210; Lentz 1857: 138; Liegel 1886: 43; Lindemann 1884b: 264; Lindquist & Prutz 1977; Lindquist, O. H. & Syme 1981: 34; Lokaj 1868: 64; Lomnicki 1886a: 242, 1913b: 148; Lucht 1987: 277; Lunardoni & Leonardi 1889: 456; Lundberg 1977; Marcu 1926c: 62; Melsheimer 1806: 8; Mequignon 1936: 15; Michalski 1957: 164; Miller 1868: 27; Munster 1928: 289; Murayama 1929b: 2, 1929d: 2, 1930a: 1, 1930b: 12, 1936a: 127, 1937b: 374, 1948: 2, 1949a: 15, 1951c: 4, 1953a: 12, 1954a: 11, 1954b: 164; Negru 1966b: 400, 1968a: 455; Niisima 1908b: 18; Nobuchi 1966d: 18, 1967: 20; Nohira & Ogawa 1986; Nunberg 1928b: 88, 104, 1954: 46; Nuorteva 1971: 67; Nusslin 1898: 280; Oliveira 1887: 328; Orest 1926c: 62; Ortzen 1886: 279; Pacher 1865: 152; Palm 1946: 122, 1948a: 90, 1985; Palmen 1946: 194; Peyerimhoff 1919: 169, 1933b: 367; Pfeffer 1924b: 471, 1931b: 74, 1947e: 3, 1950b: 73, 1989a: 52; Pierce, W. D. 1917: 69; Pittioni 1943: 175; Pjatnitskii 1930a: 164; Platonoff 1943: 141; Pomerantzev 1907b: 492; Poppius 1900: 108; Postner 1974: 422 Rapp 1934: 726; Ratzeburg 1837: 139, 162, 1839: 165, 196; Redtenbacher 1858: 831, 1874: 373; Reitter 1869b: 154, 1894a: 64, 1916: 287; Roubal 1910: 203, 1936b: 193, 1941: 263; Rozhkov 1970: 140; Saalas 1917a: 18, 1931: 68; Sahlberg 1900: 105; Sainte-Claire & Mequignon 1938: 445; Schaschl 1854: 133; Schaufuss 1915: 1230; Schaum 1859: 95, 1862: 101; Schedl 1959(?): 100, 1961b: 184, 1964f, 1967c: 71, 1969c: 50, 1971d: 426, 1971f: 146, 1973b: 210, 1974a: 86, 1980a: 14, 1981b: 67; Scheerpeltz & Winkler 1930: 256; Schilsky 1909: 188; Schimitschek 1938b: 114; Schiodte 1873: 101; Schwerdtfeger 1981: 193; Seidlitz 1872: 393, 1891a: 561, 1891b: 607; Shiraki 1952; Siebke 1875: 283; Smith, J. B. 1900: 365, 1910: 404; Stark 1925: 78–81, 1926a: 334, 1926b: 103, 1926j: 125, 1931a: 25, 1931d: 546, 1952: 250; Stein 1868: 114; Stein & Weise 1877: 164; Stierlin 1898: 438; Stierlin & Gautard 1871: 292, 1906: 205; Strand 1946: 599; Strauch 1861: 122; Sturm 1826: 102, 1843: 230; Swaine 1909: 94; Syme & Nystrom 1988: 35; Thomson 1859: 147, 1865: 361, 1868: 220; Tragardh 1914: 93, 1939b: 197; Tredl 1907: 11; Tschorbadjiev 1929: 165; Villa & Villa 1833: 26; Wachtl 1876a: 458; West 1938: 184; Westhoff 1882: 238; Wichmann 1924: 15, 1927a: 65–66; Wood, S. L. 1977a: 69, 1982b: 741; Yanovskii & Tegshzhargal 1985: 415; Yin & Huang 1981: 561; Zetterstedt 1840: 194; Zoufal 1920: 21. (**tx**) Altman 1844; Bach 1854, 1864; Balachowsky 1949a: 158, 162; Barbey 1901: 22, 68; Bedel 1888b: 395, 412; Bertolini 1872; Blandford 1894d: 82, 1898c: 6; Blatchley & Leng 1916: 651; Brancsik 1871; Bright 1976d: 114; Cabral 1959; Calwer 1858; Carpentier & Delaby 1908; Chamberlin 1939: 118; Chapuis & Candeze 1853; Chararas 1956c; Charvat 1950; Choo 1983; Chorbadzhievo 1924d; Csiki 1909; Dejean 1821, 1825; Doebner 1860, 1862: 167; Dombrowsky 1887; Duffy 1953; Eggers 1914: 296–297, 1922c, 1923b: 134–135, 1929e: 43, 1932e: 8, 1933f: 5; Eichhoff 1864b: 33, 1868b: 404, 1878b: 73, 1881a: 44, 165, 1883a: 108, 131; Endrodi 1957b; Erichson 1836: 61; Escherich 1923b: 481, 602; Escherich & Escherich 1897; Essig 1942: 604; Everts 1903: 753, 1922: 640; Fauvel 1885, 1889; Ferrant 1911; Ferrari 1867a: 6, 1867b: 113, 1868: 251; Fleischer 1905, 1927; Formanek 1907: 31; Fricken 1889: 342; Gabler 1955; Gebien 1907: 197; Grune 1979: 86–87; Gyllenhal 1813: 371, 1827: 624; Hagedorn 1910a:

74; Hansen, V. 1956, 1964: 460; Henschel 1876a: 34, 240, 1878a, 1895a: 162; Hopkins 1914: 119, 1915c:pl. 9, fig. 7, pl. 11, fig. 7; Houlbert 1922a:pl. 1; Joly 1976; Judeich & Nitsche 1895: 527; Kalina 1970: 121–122; Karpinski & Strawinski 1948: 155; Knotek 1892a: 36; Koch 1913: 127, 1928: 102, 1932: 105; Krivolutskaya 1956: 832, 1958: 133; Kuhnt 1913: 1054; Kurenzov 1941a: 139, 1948b: 108; Lacordaire 1866: 374; Lekander 1959b: 60; Lindquist, O. H. & Syme 1981: 34; Lovendal 1889b: 50, 1898: 120; Lucht 1987: 2771; Lunardoni & Leonardi 1889: 456; Murayama 1930b: 12, 16, 30, 1936a: 127, 1937b: 574, 1953a: 12, 1954a: 11, 1954b: 164; Negru 1966b: 400; Niisima 1909: 139–140; Nobuchi 1966d: 18, pl. 2; Nordlinger 1848: 241, 1856: 26; Nunberg 1928a: 140, 1947: 99–108, 1954: 46; Olivier 1795b: 13; Pardy 1983; Peyerimhoff 1911: 314; Pfeffer 1932b: 16, 1941c: 5, 1942b: 208, 214, 1947e: 3, 1955a: 154; Portevin 1935: 323; Postner 1974: 422 Quaschik 1953: 35; Ratzeburg 1837: 139, 162, 1839: 165, 196; Redtenbacher 1849a: 359, 1849b: 26, 1858: 831, 1874: 373; Reitter 1885b: 389, 1894a: 64, 1913a: 61–62, 1916: 287; Rhumbler 1922: 301, 1927: 314; Rupertsberger 1879: 231, 1880: 228; Saalas 1914: 82, 304–306, 1916: 110–116, 1949: 342, 371; Sahlberg 1836: 154; Schedl 1934f: 1637, 1946a: 5, 8, 1952f: 87, 1959: 99, 1980a: 14, 1981b: 67; Scherb 1971; Schimitschek 1937c: 52, 1955c: 82; Scholz 1922: 139–140; Schwarz 1894: 17; Seidlitz 1872: 393, 1891a: 561, 1891b: 607; Spessivtsev 1913a: 43, 1922a: 469, 490–491, 1923: 200–214, 1925a: 170, 1925b: 15, 1931: 45; Stark 1952: 250; Stebbing 1914: 499; Stierlin 1898: 438; Swaine 1909: 94, 1918a: 84; Thomson 1859: 147, 1865: 361, 1868: 220, 1870: 338; Titus, Meikle, & Harrison 1985: 52; Wood, S. L. 1973c: 175, 1982b: 741; Yin & Huang 1981: 561; Zetterstedt 1840: 194. (**ms**) Eckstein 1900c; Escherich 1932b; Hartig 1834: 110; Heinemann 1908a; Landin 1953: 24, 99; Sedlaczek 1902a: 126; Seitner 1913a: 27; Swaine 1907: 191, 1912b: 141.

aphodiodes Villa 1833: 36 (*Bostrichus*). Syntypes, sex?; Europe; not located. Synonymy: Eichhoff 1878b: 73.

References: (**ds**) Gaubil 1849: 126; Villa & Villa 1833: 26. (**tx**) Comolli 1837; Villa 1833: 36.

cedris Eichhoff 1868b: 403. Syntypes, sex?; Corsica; Hamburg Museum, lost. Synonymy: Peyerimhoff 1919: 213.

References: (**ec**) Peyerimhoff 1934: 52; Pfeffer 1960. (**hb**) Peyerimhoff 1919: 252. (**ds**) Blanchere & Robert 1889; Calwer 1884, 1893; Gemminger & Harold 1872: 2679; Hagedorn 1910d: 35; Kleine 1913b: 114, 1914a: 16, 1934a: 140; Kocher 1953: 133; Peyerimhoff 1919: 252, 1933b: 362, 1934: 52; Pfeffer 1935: 158, 1947d: 128, 1960; Puton 1869. (**tx**) Bertolini 1872; Eichhoff 1868b: 403, 1878b: 80; Hagedorn 1910a: 74; Peyerimhoff 1919: 252; Pfeffer 1942b: 208–209, 1955a: 152; Schedl 1934f: 1637, 1946a: 15.

atomus LeConte 1868: 152. Holotype, sex?; New York [USA]; MCZ, Cambridge. Synonymy: Schwarz 1886: 56 (possible synonymy), Wood 1973c: 175.

References: (**ay**) Thomas, J. B. 1957: 4. (**cn**) Becker 1959b; Becker, Abbott, & Rick 1956: 664; Blackman 1950; Chamberlin 1924; Connola et al. 1956; Currie 1905: 82; Doane et al. 1936; Felt 1924: 272, 1926: 247–248, 272, 1930a: 247–248, 272; Hopkins 1892b, 1904a: 26; Packard 1881: 231–232, 1890: 727; Smith, J. B. 1924d: 9; Swaine 1924d: 9; Swaine & Craighead 1924: 1–27; Thomas, J. B. 1958: 394. (**ec**) Felt 1906: 389; Matthews 1970; Swaine 1924d: 9; Thomas, J. B. 1958: 394. (**hb**) Baker, W. L. 1972: 239; Blackman 1919a: 89, 1950; Chamberlin 1939: 119; Chittenden 1890; Doane et al. 1936; Essig 1942: 604; Felt 1906: 359–360, 1926: 247–248, 272, 1930a: 247–248, 272; Hopkins 1904a: 26; Packard 1890: 727; Pierce, W. D. 1907: 294; Swaine 1918a: 54, 1924d: 9. (**ds**) Anonymous 1926c: 515; Beaulne 1956; Blackman 1950; Bright 1971a: 126; Chamberlin 1925, 1939: 119; Chittenden 1890; Currie 1905; Dodge 1938; Felt 1926: 247–248, 272, 1930a: 247–248, 272; Gemminger & Harold 1872: 2679; Hagedorn 1910d: 35; Hamilton 1889: 159, 1891: 132; Henshaw 1882: 269, 1885: 149; Johnson 1901b: 93; Kleine 1913b: 114, 1914b: 409, 1934a: 139; Leng 1920: 337; Leonard 1928: 515; Proctor 1946: 206; Provancher 1877: 565; Schwarz 1886: 56; Smith, J. B. 1900: 365; Swaine 1909: 94. (**tx**) Blandford 1898c: 6; Chamberlin 1939: 119; Dodge 1938: 23; Eichhoff 1878b: 75; Essig 1942: 604; Hagedorn 1910a: 74; Hamilton 1891: 132; LeConte 1868: 152, 1876: 387; Pardy 1974, 1977: 13; Provancher 1877: 565; Schwarz 1886: 56, 1894: 17; Swaine 1909: 94, 1918a: 7, 54; Thomas, J. B. 1957: 4; Wood, S. L. 1973c: 175.

parallelocollis Eichhoff 1878b: 73. Syntypes, sex?; Europe; Hamburg Museum, lost. Synonymy: Schedl 1946a: 7.

References: (**hb**) Dombrowsky 1887. (**ds**) Arnoldi et al. 1955: 685; Buresh & Lazarov 1956; Horion 1935; Pfeffer 1936: 90, 1947d: 128; Reitter 1916: 350; Schaufuss 1915: 1230; Schilsky 1909: 188; Stein & Weise 1877: 164. (**tx**) Dombrowsky 1887; Eggers 1914: 296–297, 1922d: 118, 1923b, 1940g: 37; Eichhoff 1878b: 73–74; Pfeffer 1942b: 208, 216; Reitter 1885: 389, 1894: 64, 1913a: 61, 1916: 350; Schedl 1934f: 1637, 1946a: 7.

gaunersdorferi Reitter 1885b: 389. Syntypes, sex?; Euboea Island, Greece; NHMB, Budapest. Synonymy: Eggers 1922d: 118.

References: (**ec**) Kleine 1908c: 185. (**ds**)

Arnoldi et al. 1955: 685; Hagedorn 1910d: 36; Heyden, Reitter, & Weise 1891: 670, 1906: 710; Kleine 1913b: 114, 1934a: 140; Ortzen 1886: 279; Tredl 1907: 12. (**tx**) Eggers 1914: 296–297, 1922d: 118, 1940g: 37; Fauvel 1889; Hagedorn 1910a: 74; Reitter 1885b: 389–390, 1894a: 64, 1913a: 61–62; Schedl 1934f: 1637, 1946a: 7.

crebellus Reitter 1894a: 64. Syntypes, sex?; Ragusa, Dalmatia; NHMB, Budapest. Synonymy: Schedl 1946a: 5.

Notes: (1) Balachowsky 1949a: 5 (treats it as a good species).

References: (**cn**) Joly 1976; Wachtl 1901: 381. (**ec**) Halperin & Holzschuh 1984: 24; Kleine 1908c: 185; Novak, P. 1952: 414. (**hb**) Eggers 1906; Halperin & Holzschuh 1984: 24; Joly 1976; Peyerimhoff 1919: 253; Stark 1952: 251; Wachtl 1901: 381. (**ds**) Bickhardt 1916; Binaghi 1967; Eggers 1906; Ganglbauer 1904; Hagedorn 1910d: 36; Halperin & Holzschuh 1984: 24; Heyden, Reitter, & Weise 1906: 710; Joly 1976; Kleine 1913b: 114, 1934a: 140; Langhoffer 1915c: 157; Novak, P. 1952: 414, 1964; Peyerimhoff 1919: 253, 1933b: 367; Pfeffer 1947d: 127, 1984: 277; Pinheiro 1965: 359–364; Pittioni 1943: 176; Reitter 1894a: 64; Sahlberg 1903b: 63; Sainte-Claire 1909: 146, 1914: 471; Sainte-Claire & Mequignon 1938: 445; Schaufuss 1915: 1230; Stark 1952: 251; Supatashvili, Shalibashvili, & Supatashvili 1972; Tredl 1907: 12. (**tx**) Balachowsky 1949a: 162; Hagedorn 1910a: 74; Joly 1976; Pfeffer 1942b: 208, 214, 1955a: 152; Reitter 1894a: 64, 1913a: 62; Schedl 1934f: 1637, 1946a: 5, 7, 1979c: 68; Stark 1952: 251.

minimus Stebbing 1903a: 252 (*Polygraphus*). Syntypes, sex?; India: N.W. Himalayas: Jaunsar Forest, Tehri-Gerhwal Forest; not found at FRI, Dehra Dun. Synonymy: Wood 1989: 172.

Notes: (1) The FRI, Dehra Dun, collection in 1981 contained numerous specimens under the name *minimus*, but no types; it is presumed that Beeson obtained the identification directly from Stebbing or from a series not yet found.

References: (**cn**) Stebbing 1903a: 252. (**hb**) Stebbing 1903a: 252; Strohmeyer 1910a: 223. (**ds**) Beeson 1961: 286; Bhasin, Roonwal, & Singh 1958; Hagedorn 1910d: 38; Kleine 1913b: 116, 1914b: 268, 276, 1934a: 140; Stebbing 1903a: 252. (**tx**) Fabricius 1801: 395; Hagedorn 1910a: 77; Stebbing 1903a: 252.

maulei Roubal 1910: 203. Syntypes 6, sex?; Lithuania; 2 syntypes in Eggers Collection, in NHMW, Wien. Synonymy: Schedl 1946a: 7.

References: (**hb**) Karpinski & Strawinski 1948: 155; Stark 1952: 251. (**ds**) Borchert 1951; Hansen, V. 1939; Hellen 1947; Horion 1935; Kangas 1945; Karpinski 1948a: 173; Karpinski & Strawinski 1948: 155; Keler 1925b: 271; Kleine 1913b: 114, 1934a: 140; Lomnicki 1913b: 148; Nunberg 1928b: 88, 104; Palm 1946: 122; Reitter 1916: 350; Roubal 1910: 203; Schaufuss 1915: 1230; Stark 1926b: 103, 1952: 251; Webber 1938: 338. (**tx**) Balachowsky 1949a: 162; Eggers 1922c: 15–16, 1932e: 81; Karpinski & Strawinski 1948: 158; Pfeffer 1942b: 208–209, 214, 1955a: 152; Reitter 1913a: 62, 1916: 350; Roubal 1910: 203; Schedl 1934f: 1637, 1946a: 7, 1979c: 150; Scholz 1922: 139–140; Sokanovskii 1958: 38; Spessivtsev 1922a: 469, 491, 1931: 46; Stark 1952: 251.

danicus Eggers 1932e: 80. Holotype ♂; Insel Seeland, Denmark; USNM, Washington. Synonymy: Schedl 1946a: 7.

References: (**ds**) Hansen, V. 1939; Hellen 1947; Kleine 1934a: 140. (**tx**) Anderson, W. H. & Anderson 1971: 11; Eggers 1932e: 80; Pfeffer 1942b: 208, 215; Schedl 1946a: 5, 7, 1979c: 75.

cylindricollis Eggers 1940g: 37. Holotype ♀; Lastua, Dalmatia; Eggers Collection but not listed by Anderson & Anderson 1971 or Schedl 1979c, 2 cotypes in Eggers Collection, in NHMW, Wien. Synonymy: Schedl 1946a: 7.

References: (**cn**) Schimitschek 1944: 170. (**ec**) Galoux 1947b; Schimitschek 1941a: 305. (**hb**) Schimitschek 1944: 170. (**tx**) Balachowsky 1949a: 162; Eggers 1940g: 36–40; Pfeffer 1942b: 208, 1955a: 152; Schedl 1946a: 5, 7, 1979c: 73.

***tuberosus* Niisima** 1909: 139. Syntypes, sex?; Prov. Tesnio Onupunsi, Tomakomai: Berg Mackarinupuri, Prov. Iburi; Nobuchi Collection, Ibaraki.

Figures: Nakane et al. 1963:pl. 191, Nobuchi 1966d:pl. 2.

Distribution: Asia (Japan/ Sakhalin Island, Siberia in E USSR).

Hosts: *Picea ajanensis, P. jezoensis, P. koraiensis, P. glehnii, Pinus pumila*.

References: (**cn**) Inouye 1955; Inouye & Yamaguchi 1955a: 235; Kurenzov 1935c: 188. (**ec**) Inouye 1954; Inouye & Yamaguchi 1955a: 235; Inouye et al. 1955: 61; Kurenzov 1934a: 57; Nishiguchi 1960c. (**hb**) Inouye 1954: 170; Inouye et al. 1955: 61; Kurenzov 1935a: 19, 30, 1948b: 110, 1950d: 205; Stark 1952: 246. (**ds**) Kleine 1913b: 114, 1914b: 256, 1934a: 140; Kono 1938b: 64–65; Kono & Tamanuki 1939: 88; Kurenzov 1934a: 57, 1935a: 19, 30, 1935c: 188, 1936a: 109, 1936b: 351, 1963b: 115, 1965; Murayama 1948: 2, 1949a: 12, 1951c: 4, 1953a: 12, 1954b: 199, 1955: 104; Nakane et al. 1963: 382; Nobuchi 1967: 20, 1966d: 18; Pfeffer 1935: 159; Stark 1952: 246. (**tx**) Hagedorn 1910a: 74; Krivolutskaya 1958: 133; Kurenzov 1941a: 139, 1948b: 110; Murayama 1953a: 12, 1954b: 199, 1955: 104; Nakane et al. 1963: 382, pl. 191; Niisima 1909: 139, 1910a: 1, 1929: 376–381; Nobuchi 1966d: 18, pl. 2; Pfeffer 1942b: 208, 212, 1955a: 153; Schedl 1934f: 1637, 1946a: 5, 14; Stark 1952: 246.

Genus *Cisurgus* Reitter

CISURGUS REITTER 1894a: 59, 65. Type-species: *Cisurgus filum* Reitter, monobasic.
Keys: Schedl 1959: 28.
References: (**hb**) Wood, S. L. 1986a: 76. (**ds**) Hagedorn 1910d: 37; Wood, S. L. 1986a: 76. (**tx**) Eggers 1910: 559; Fuchs 1912: 9; Hagedorn 1908: 371, 1909: 138, 1910a: 74–75; Hopkins 1914: 118, 133, 1915c: 226; Peyerimhoff 1923: 56–57; Pfeffer 1983; Reitter 1894a: 59, 65–66, 1906: 710, 1913a: 64–65, 1916: 286; Schedl 1934f: 1638, 1959e: 27, 1961m: 647; Schedl, Lindberg, & Lindberg 1959: 8; Sokanovskii 1954: 16; Spessivtsev 1931: 87; Wood, S. L. 1986a: 76.

***ferulae* Pfeffer** 1983: 293. Syntypes, sex?; Uzbekistan; not located.
Distribution: Asia (W USSR).
Hosts: *Ferula kuhistanica, F.* sp.
References: (**ds**) Kadyrov 1989. (**tx**) Pfeffer 1983: 293, 295.

***filum* (Reitter)** 1889b: 126 (*Crypturgus*). Syntypes, sex?; Utsch-adschi, zwischen Merv und dem Amu-darja; NHMB, Budapest.
Distribution: Asia (W USSR).
Notes: (1) Reitter 1894: 59 (to *Cisurgus*).
References: (**hb**) Budkov 1897; Stark 1952: 253. (**ds**) Budkov 1897; Hagedorn 1910d: 37; Heyden 1898: 77; Kadyrov 1989; Kleine 1913b: 115, 1914b: 246; Reitter 1894a: 66; Schaufuss 1915: 1230; Schedl 1959e: 29; Stark 1952: 253. (**tx**) Eggers 1910f: 559–560; Hagedorn 1910a: 75; Hopkins 1914: 118; Pfeffer 1983: 295; Reitter 1889b: 126, 1894a: 59, 65–66, 1906a: 31, 1913a: 65; Schedl 1934f: 1638, 1959e: 29; Semenov 1903: 80; Stark 1952: 253.

***maurus* Eggers** 1910f: 559. Syntypes, sex?; Tunesia (Le Kef); Normand Collection, and Eggers Collection, 2 in NHMW, Wien.
Distribution: Africa (Algeria/ Tunisia), Asia (Israel), Europe (Yugoslavia).
Hosts: *Lantana camara, Tamarix aphylla.*
References: (**hb**) Normand 1937: 268. (**ds**) Kleine 1913b: 115, 1914a: 16; Schedl 1959e: 29, 1978e: 20. (**tx**) Eggers 1910f: 559–560; Hagedorn 1910a: 75; Michalski 1969b: 567; Pfeffer 1983: 295; Reitter 1913a: 64–65; Schedl 1934f: 1638, 1959e: 29–30, 1979c: 150.

karamani Reitter 1913a: 64. Syntypes, sex?; Dalmatien: Castella; NHMB, Budapest. Synonymy: Schedl 1959e: 30.
References: (**ec**) Novak, P. 1952: 414. (**ds**) Langhoffer 1915c: 157; Novak, P. 1952: 414; Schaufuss 1915: 1230. (**tx**) Pfeffer 1983: 295; Reitter 1913a: 64; Schedl 1934f: 1638, 1959e: 30–31.

***occidentalis* Peyerimhoff** 1923a: 53. Syntypes, sex?; Maroc Meridional: Vallee du Sous; MNHN, Paris.
Distribution: Africa (Ghana/ Morocco).
Hosts: *Euphorbia cactiformes* (*E. beaumierana*), *E. drupifera, E. echinus.*
References: (**hb**) Peyerimhoff 1926: 386. (**ds**) Kleine 1934a: 140; Peyerimhoff 1923a, 1925: 13, 1926: 386; Schedl 1959e: 33, 1961k: 647, 1964f. (**tx**) Peyerimhoff 1923a: 53, 1925: 8, 13; Pfeffer 1983: 295; Schedl 1934f: 1638, 1951k: 647, 1959e: 33.

***ragusae* Reitter** 1906a: 241. Syntypes, sex?; Messina, Italy; NHMB, Budapest.
Distribution: Africa (Tunisia), Europe (Italy/ Sardinia/ Sicily).
References: (**cn**) Grandi 1951: 913. (**ec**) Kleine 1908c: 185. (**hb**) Grandi 1951: 913. (**ds**) Hagedorn 1910d: 37; Heyden, Reitter, & Weise 1906: 710; Kleine 1913b: 115, 1914a: 15; Krausse 1910: 771, 1911: 67; Ragusa 1924: 116; Schaufuss 1915: 1230; Schedl 1959e: 29; Tredl 1907: 12. (**tx**) Eggers 1910e: 37, 1910f: 559–560, 1911a: 123, 1914; Hagedorn 1910a: 75; Reitter 1906a: 31, 241, 1913a: 64; Schedl 1934f: 1638, 1959e: 28–29.

***resiniferae* Peyerimhoff** 1925: 13. Syntypes, sex?; Morocco; MNHN, Paris.
Distribution: Africa (Algeria/ Morocco/ Tunisia).
Notes: (1) Pfeffer 1983: 296 (elevated to full species from subspecies of *occidentalis*; Schedl 1959e: 33 considered it a synonym of that species).
References: (**hb**) Peyerimhoff 1926: 386. (**ds**) Peyerimhoff 1925: 13, 1926: 386. (**tx**) Peyerimhoff 1925: 13; Pfeffer 1983: 296; Schedl 1959e: 33.

***wollastoni* (Eichhoff)** 1878b: 77 (*Crypturgus*). Lectotype, sex?; Canary Islands: Teneriffe (Mts. above Sta. Cruz); BMNH, London, designated by Israelson 1972: 257, automatic.
Figures: Israelson 1972:fig. 24 (male genitalia).
Distribution: Africa (Algeria/ Gomera, Gran Canaria, Tenerife in Canary Islands).
Hosts: *Euphorbia canariensis.*
References: (**ay**) Israelson 1972: 257. (**ds**) Hagedorn 1910d: 37; Kleine 1913b: 114, 1914a: 21. (**tx**) Eichhoff 1878b: 77–78; Hagedorn 1910a: 74; Pfeffer 1942b: 207–209, 213; Schedl 1934f: 1638, 1946a: 15, 1964f; Schedl, Lindberg, & Lindberg 1959: 17.

pusillus Wollaston 1860: 167 (*Aphanarthrum*). Lectotype, sex?; Canary Islands: Teneriffe (Mts. above Sta. Cruz); BMNH, London, preoccupied while in *Crypturgus*.
Notes: (1) Eichhoff 1878b: 77 transferred this species to *Crypturgus* where the Wollaston name became a junior homonym and was replaced. Peyerimhoff 1923: 54 (to *Cisurgus*).
References: (**cn**) Souphieff & Scherbinovskaja 1937: 28. (**ds**) Acloque 1896; Kleine 1934a: 140; Lacordaire 1866: 376; Peyerimhoff 1923a: 48; Schedl 1959e: 33, 1971d: 42; Schedl, Lindberg, & Lindberg 1959: 17; Souphieff &

Scherbinovskaja 1937: 28. (**tx**) Acloque 1896; Eichhoff 1878: 77; Kalina 1970: 121; Lacordaire 1866: 376; Peyerimhoff 1923a: 48; Schedl 1934f: 1638, 1959e: 33; Schedl, Lindberg, & Lindberg 1959: 17; Wollaston 1860b: 167, 1861b: 38, 1862b: 172, 1864: 263, 1865: 244.

hystrix Abeille de Perrin 1894: 94. Syntypes, sex?; Algiria, prope St. Charles; not located. Synonymy: Schedl 1946a: 15.

Notes: (3) The synonymy proposed by Schedl (1946a: 15) should be confirmed.

References: (**hb**) Normand 1937: 268. (**ds**) Abeille de Perrin 1894: 94; Hagedorn 1910d: 36; Kleine 1913b: 114, 1914a: 16; Reitter 1894a: 94. (**tx**) Abielle de Perrin 1894: 94; Eggers 1910f: 559–560; Hagedorn 1910a: 74; Reitter 1894a: 94, 1913a: 64; Schedl 1934f: 1638, 1946a: 15.

Tribe Xyloterini Lindemann

Xyloteroideae
References: Lindemann 1876: 165.

Xyloteri
References: LeConte 1876: 346; LeConte & Horn 1883: 516.

Xyloteridae
References: Eichhoff 1878b: 411.

Xyloterinae
References: Murayama 1930: 17, 1957b: 569–585; Nusslin 1911: 432.

Xyloterini
References: Reitter 1913a: 28; Schedl 1951b: 74; Wood, S. L. 1978a: 113, 1982b: 68, 1986a: 76; Yin, Huang, & Li 1984: 182.

Xyloterina
References: Balachowsky 1949a: 196.

Trypodendrinae
References: Tredl 1907: 18.

Trypodendrina
References: Nunberg 1954: 16.

Genus *Trypodendron* Stephens

TRYPODENDRON STEPHENS 1830: 353. Type-species: *Dermestes domesticus* Linnaeus, subsequent designation by Westwood 1838: 39, Thomson 1859: 146.

Xyloterus Erichson 1836: 60. Type-species: *Bostrichus lineatus* Olivier, subsequent designation by Thomson 1859: 146. Synonymy: Ferrari 1868: 255, Eichhoff 1878b: 412.

References: (**cn**) Felt 1905: 293; Hofer 1920: 1–11; Hopping & Jenkins 1933: 1–14; Snyder 1927: 1–46. (**hb**) Knauer 1908: 498–501; Zivojinovic 1948: 65–73. (**ds**) Scheerpeltz & Winkler 1930: 257. (**tx**) Bach 1854: 138; Balachowsky 1949a: 198; Doebner 1862: 165; Eichhoff 1864, 1878b: 412; Erichson 1836: 60; Ferrari 1868: 255; Hagedorn 1910d: 114–116; Karaman 1972: 115; Kuster 1844: 64; LeConte 1876: 357; LeConte & Horn 1883: 17–18; Munro 1926: 1–27; Niisima 1909: 163–164; Pfeffer 1989a: 129–136; Puton 1867: 631; Redtenbacher 1872: 383; Reitter 1894: 92, 1913a: 74; Saalas 1914: 73, 83–84; Schedl 1951c: 74–100, 1964k: 211; Schimitschek 1937: 50–53; Spessivtsev 1922: 474–475, 1931: 88; Stark 1931: 339–433; Stebbing 1914: 602; Swaine 1909: 148, 1918: 84; Tamanuki 1933: 1–54; Thomson 1857: 358, 1859: 146; Trappen 1935: 143; Tredl 1907: 19; Wood, S. L. 1957a: 344, 1966b: 20.

Keys: Wood 1957a: 345, 1982b: 747 for North America; Schedl 1951c: 86 for Europe and Asia; Murayama 1957b for Japan; Yin, Huang, & Li 1984: 182–185.

References: (**ay**) Atkins & Farris 1962: 30; Browne 1961e: 49; Chapman 1955: 3; Francke-Grosmann 1958: 139; Nobuchi 1969a: 58; Thomas, J. B. 1960. (**bv**) Bletchly 1961: 14; Chapman 1955: 3, 1959b: 126; Dyer 1963: 3–4; Graham 1953: 3–4, 1961: 519–520; Kinghorn 1955: 3, 1956: 3–4; Nijholt & Chapman 1964: 3–4. (**cn**) Binion 1962: 52; Drake 1921: 201–205; Hagle et al. 1987: 39; Johnson 1958: 508–511, 1960: 1–8; Johnson & Zingg 1969: 816–819; Judeich & Nitsche 1895: 449–451; Keen 1938: 146; McGuffin & Barker 1947: 57; Richmond 1953: 86–89; Ross 1954: 143; Swaine 1913: 87–92. (**ec**) Balazy 1963b; Dyer 1962: 910; Furniss, R. L. & Carolin 1977: 410; Lindquist 1970: 981. (**hb**) Bright & Stark 1973: 71; Browne 1961d: 50; Furniss, R. L. & Carolin 1977: 410; Prebble & Graham 1957: 92, 95–106, 111–112; Wood, S. L. 1982b: 746, 1986a: 78. (**ds**) Allen & Koot 1970: 12; Barbey 1901: 110; Bright & Stark 1973: 71; Chamberlin 1917: 356; Furniss, R. L. & Carolin 1977: 410; Patterson & Hatch 1945: 152; Provancher 1877: 566; Wood, S. L. 1982b: 746, 1986a: 78; Yin, Huang, & Li 1984: 182. (**tx**) Arnett 1960: 1044, 1968: 1044; Balachowsky 1949a: 196; Beal & Massey 1945: 59, 107; Bedel 1888b: 396, 403; Blackman 1922b: 75, 79; Bright 1976d: 117; Bright & Stark 1973: 71; Browne 1961c: 81, 1965a: 188; Chamberlin 1939: 296–302, 1958: 124; Choo 1983: 61; Choo, Woo, & Nobuchi 1988b; Dodge 1938: 13, 18, 35; Eggers 1939c: 114–123; Eichhoff 1864a: 36, 45–46, 1878b: 412, 1881a: 291; Ferrari 1868: 255; Johnson, N. E. 1958b: 236; Kostin 1973: 259; Krivolutskaya 1958: 107; Pfeffer 1989a: 53, 1989b; Schedl 1964k: 211; Stephens 1830: 353; Swaine 1909: 147, 1918a: 44, 84–86; Thomas, J. B. 1960: 410; Thomson 1859: 146; Trappen 1935: 143; Westwood 1838: 39; Wood, S. L. 1957a: 341, 345, 1961a: 46, 1966b: 20, 1982b: 746–754, 1986a: 78; Yin, Huang, & Li 1984: 182.

***ashuensis* (Murayama)** 1950a: 51 (*Xyloterus*). Syntypes 2, ♂ ♀; Ashu, north of Kyoto City, Honshu, Japan; Murayama Collection in USNM, Washington.
Distribution: Asia (Japan).
References: (**ds**) Murayama 1953a: 12, 1954b: 167, 1957b: 570. (**tx**) Murayama 1950a: 51, 1953a: 12, 1954b: 167, 1957b: 570.

***betulae* Swaine** 1911a: 216. Lectotype ♂; Ste. Anne de Bellevue, Quebec [Canada]; CNCI, Ottawa, designated by Bright 1967b: 679.
Figures: Bright 1976d: 210, Wood 1957a: 339–341.
Distribution: North America (Alberta, British Columbia, Manitoba, New Brunswick, Northwest Territories, Nova Scotia, Ontario, Quebec in Canada/ Idaho, Maine, Massachusetts, Minnesota, Montana, New Hampshire, New Jersey, New York, South Dakota, Wisconsin in USA).
Hosts: *Betula lenta*, *B. papyifera*.
References: (**ay**) Abrahamson, Chu, & Norris 1967: 1107–1110; Thomas, J. B. 1960, 1967. (**bv**)

Kirkendall 1984: 241. (**cn**) Blackman 1950; Chamberlin 1924; Doane et al. 1936; Drake 1921: 201, 205; Holsten, Werner, & Laurent 1980; Hopkins 1904a: 16; Leach 1940b: 63; Leach et al. 1940: 227–236; Lindquist, O. H. & Syme 1981: 110; Nash et al. 1951: 46; Swaine 1918a: 84; Wong, H. R. & Melvin 1973. (**ec**) Abrahamson, Chu, & Norris 1967; Leach 1940b: 63; Leach et al. 1940: 227; Roeper & French 1981; Slaby 1947: 377; Stienhaus 1946: 405; Thompson, W. R. & Simmonds 1964: 39, 1965: 125; Verrall 1943: 143; Webb 1945: 65. (**hb**) Baker, W. L. 1972: 268; Blackman 1950; Chamberlin 1939: 299; Doane et al. 1936; Drake 1921; Everts 1903: 770; Gast et al. 1989: 383; Holsten, Werner, & Laurent 1980; Hopkins 1904a: 16; Rose, A. H. & Lindquist 1982b: 101; Swaine 1918a: 84; Wong & Melvin 1973. (**ds**) Abrahamson, Chu, & Norris 1967; Anonymous 1926c: 518; Baker, W. L. 1972: 268; Beaulne 1956; Blackman 1950; Bright 1976d: 118; Chamberlin 1939: 299; Dodge 1938; Furniss, R. L. & Carolin 1977: 412; Gast et al. 1989: 383; Kleine 1913b: 169, 1934a: 178; Leng 1920: 339; Leonard 1928: 518; Lindquist, O. H. & Syme 1981: 106; Murayama 1957b: 584; Patterson & Hatch 1945: 152; Pfeffer 1989b: 132; Still, Tidsbury, & Melvin 1974b; Wood, S. L. 1982b: 750. (**tx**) Benoit 1985: 272; Bright 1967b: 679, 1976d: 118, 210; Chamberlin 1939: 299; Dodge 1938: 14, 35–36; Everts 1903: 770; Hoebeke 1978; Lindquist, O. H. & Syme 1981: 110; Murayama 1957b: 584; de Ruette 1970: 411; Swaine 1911a: 216, 1918a: 84–85; Thomas, J. B. 1960: 410; Titus, Meikle, & Harrison 1985: 125; Wood, S. L. 1957a: 345, 347, 1982b: 750.

***domesticum* (Linnaeus)** 1758: 356 (*Dermestes*). Syntypes, sex?; Europa; not located.

Figures: Bevan 1987: 116, Grune 1979: 160, Speight 1981: 145.

Distribution: Asia (Turkey), Europe (Austria/ Belgium/ Bulgaria/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Hungary/ Italy/ Luxemburg/ Netherlands/ Norway/ Poland/ Romania/ Sardinia/ Scotland/ Sicily/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia).

Hosts: *Acer* spp., *Alnus glutinosa, Betula* sp., *Carpinus betulus, Fagus* spp., *Fraxinus* spp., *Juglans regia, Morus alba, Prunus* sp., *Quercus* spp., *Robinia pseudoacacia, Sorbus* spp.

Notes: (3) Endrodi 1957a: 309 (named aberrations *apicalis, toracalis,* no status).

References: (**ay**) Escherich 1923b: 488, 627; Fisher 1954; Francke-Grosmann 1956b, 1957, 1959; Hadorn 1933; Imhoff 1856: 228; Kerck 1972a, 1977; Nunberg 1951: 263; Schneider 1976. (**bv**) Francke 1973; Francke & Heemann 1974; Francke & Heyns 1974b; Grune 1979: 161; Inscoe 1982; Inscoe & Beroza 1976: 168; Kerck 1972a, 1972b, 1977, 1978; Klassen, Ridgway, & Inscoe 1982; Klimetzek, Vite, & Mori 1980; Losekrug 1988; Magema, Gasper, & Severin 1982; McLean & Borden 1977: 684; Paiva 1982a, 1982b; Paiva, Kiesel, & Vite 1983; Payne et al. 1983; Schurig et al. 1982; Vite & Pitman 1967: 683–701; Weber, R. & Schurig 1984; Weber, T. 1966. (**cn**) Anonymous 1979; Bakshi 1950: 111–120; Barbey 1925: 554; Becker, G. 1950; Bejer-Petersen 1959a; Blandford 1890, 1893c; Chararas 1957e; Chorbadzhievo 1939; Cotes 1893b; Eckstein 1926: 579, 1930b; Eichhorn & Graf 1974; Escherich 1923b: 488, 627, 1929; Esterberg 1959; Falck 1916: 167; Fisher 1952a; Gabler 1955; Georgescu et al. 1957: 357, 403, 426; Georgijevic 1959: 594; Goosen 1961; Grandi 1951; Hartig 1872a, 1872b, 1877: 195; Henschel 1895a: 194; Herlein 1878; Hess 1900: 42, 1907: 259; Hess & Beck 1914: 284, 1927: 343; Houba 1913: 253; Jacquist 1951a: 1–4; Judeich & Nitsche 1895: 539; Kamp 1954: 3; Kerck 1972b; Kholodkovskii 1912: 322; Kleine 1932a: 309; Konig, E. 1957: 104; Kovacevic 1924: 21–22, 1957: 69; Losekrug 1988; MacDougall 1925: 1–37, 1929: 1–41; Muller 1912a: 187; Niemeyer 1982; Nosek 1951: 106, 1952b: 96; Nusslin 1913: 204; Paiva 1982b; Palm 1951: 229; Puecher Passavalli 1931b: 657; Reichling 1920: 15–17; Reissig 1949: 131; Rhumbler 1922: 304, 330, 1927: 318; Saalas 1949: 329, 343, 378; Schimitschek 1935b: 147, 1937: 53, 1955a: 136, 1955c: 83; Schindler 1969b: 136; Schmidt 1881: 89; Schonherr & Wellenstein 1967; Schuster 1918: 99; Schwarz 1938a: 95; Schwerdtfeger 1944a: 184, 1954: 280, 1957a: 190; Shaw, M. W. 1960: 112; Speight 1981; Stark 1952: 363; Taraschkewitsch 1934: 357; Tomic 1957: 207–210; Wachtl 1901: 382; Weber, T. 1966: 158–165; Wolff & Krausse 1922: 89. (**ec**) Adeli 1964; Apel 1983; Baert & Maelfait 1977; Bakshi 1950; Balazy & Michalski 1964b; Batra 1963b: 216; Beauverie 1910b; Boucek 1957b: 79; Brammanis 1940; Butin & Zimmermann 1972; Eichhorn & Graf 1974; Fisher 1954; Francke-Grosmann 1956b, 1957, 1959; Fuhrer 1975; Graham 1969: 875; Gyorfi 1941b; Hagedorn 1907c; Heliovaara & Lilja 1989; Heqvist 1963: 154; Jamnicky 1957c, 1958: 689; Janka 1908; Kangas 1942b; Kleine 1908c: 220, 1909a: 49, 77; Knauer 1908: 500; Krivosheina 1974; Lundberg 1984; Michalski & Ratajczak 1989; Neger 1908b: 281, 1908c: 277, 1908d: 322, 1909a: 374, 1911a: 50; Nikitsky 1978; Nosek 1951: 106, 1952b: 96; Novak, P. 1952: 416; Nuorteva 1956a: 16, 1961c: 119; Nusslin 1927: 318; Perris 1856a: 244; Pfeffer 1923a: 331, 1928b: 2, 1932a: 19, 1943b: 181; Purrini & Orimeres 1981; Ratzeburg 1869a: 175; Roubal 1934b: 178; Ruschka 1923: 198–201; Saalas 1930: 118, 1949: 329, 343, 378; Scheidter 1936: 236; Schimitschek 1953b: 534, 1955a: 136; Schneider 1976; Schuster 1918: 99; Schwerdtfeger 1944a: 184, 1957a: 190; Sedlaczek 1915a: 45, 1935a: 162; Shaw, M. W. 1960; Slaby

1947: 375; Speight 1981; Szczepanski 1960a: 407; Thompson, W. R. 1943: 117; Thomsen, Buchwald, & Hamberg 1949: 103, 232–323; Vite 1952a: 103; Zimmermann, G. 1973. (**hb**) Adeli 1964; Altum 1881c: 309; Apel 1983; Bach 1864; Baeta Neves 1943a; Barbey 1901: 28, 110, 1925: 554; Bargmann 1906; Baudys 1929; Becker, G. 1950; Beffa 1949, 1961; Beling 1873, 1887; Blandford 1890; Boas 1923: 363; Brandt 1948; Budge 1949; Bukowsky 1930; Cecconi 1903, 1924; Chararas 1957e; Chorbadzhievo 1929; Cotes 1893a, 1893b; Dallimore & Munro 1922; Dombrowsky 1887; Eckstein 1897, 1926: 579, 1928; Eggers 1917; Eichhoff 1881a: 54, 291; Eichhorn & Graf 1974; Escherich 1923b: 488, 627; Everts 1902; Fairmaire 1864: 164; Falck 1916: 167; Fischer 1952a; Fisher 1936a, 1954; Fuchs 1904a; Furst 1888: 13; Gabler 1955; Gillanders 1908; Girard 1873; Grandi 1951; Groschke 1953c; Gyorfi 1936: 527, 1957; Hadorn 1933; Hagedorn 1903a; Hartig 1872a, 1872b, 1877: 195; Henschel 1876a: 216, 220, 240, 1895a: 194; Hergula 1939: 309; Hess 1900: 42, 1907: 259; Hess & Beck 1914: 284, 1927: 343; Holmgren 1867: 128; Jacquiot 1951a: 1; Joly 1950; Karpinski 1933b: 29; Karpinski & Strawinski 1948: 155; Karsch 1883: 142; Kholodkovskii 1912: 322; Kleine 1932a: 309; Knotek 1894a: 559; Konig, E. 1957: 104; Lengerken 1954: 315; Liese 1950: 142; Loos 1913: 413; Lunardoni & Leonardi 1889: 489; Magema, Gasper, & Severin 1982; Matouschek 1917: 214; Munro 1926: 59; Nordlinger 1856: 31; Nunberg 1929: 107; Nusslin 1898: 283, 1906b: 14, 1913: 204, 1927: 318; Paiva, Kiesel, & Vite 1983; Palm 1951: 229; Perris 1856a: 244; Pfeffer 1942a: 6; Postner 1974: 471; Ratzeburg 1837: 164, 1839: 165, 201; Rhumbler 1922: 304, 330, 1927: 318; Rupertsberger 1880: 232; Saalas 1913a: 69, 84, 1949: 329, 343, 378; Scheidter 1936: 236; Schimitschek 1955a: 136; Schmidt 1881: 89; Schneider-Orelli 1947b: 157; Schwerdtfeger 1944a: 184, 1957a: 190, 1981: 196; Sedlaczek 1935a: 162; Shaw, M. W. 1960; Simmel 1919a: 34–36; Speight 1981; Spessivtsev 1913a: 95; Strohmeyer 1907b: 173–174; Thomsen 1948 (1950): 804; Tragardh 1914: 105, 1939b: 158, 233; Tredl 1908b: 138, 1915a: 152, 1915b: 169; Tschorbadjiev 1929: 166; Vite 1952a: 103; Wachtl 1876a: 452, 1901: 382; Wichmann 1909a: 149, 1910b: 209; Wolff & Krausse 1922: 89. (**ds**) Acloque 1896; Adeli 1964; Ammann & Knabl 1923; Andersch 1851; Angus 1965a: 7; Anonymous 1979; Barthe 1896; Bartindale & Bartindale 1948: 138; Bau 1888; Bedel 1888b: 404, 420; Beffa 1949; Bejer-Petersen & Jorum 1977: 22; Benick 1921; Bielz 1851, 1887; Blanchere & Robert 1889; Boas 1923: 363; Borchert 1951; Brakman 1966b: 205; Brancsik 1871, 1906; Bukowsky 1930; Buresh & Lazarov 1956; Butovitsch & Heqvist 1947; Calwer 1884, 1893; Cecconi 1903; Chapuis & Candeze 1853; Chorbadzhievo 1924d, 1929; Chrystal 1937; Cotes 1893a, 1893b; Crotch 1863; Dallimore & Munro 1922: 189–193; Davidson 1961: 20; Dejean 1821, 1825, 1837; Duftschmidt 1825; Eckstein 1923; Eder 1934; Eggers 1904; Endrodi 1958b; Ericson & Sandin 1893; Ermisch 1953; Escherich 1923b: 488, 627, 1929, 1932b; Esterberg 1959; Favre 1890; Fisher 1936a; Fleischer 1888; Fleischer et al. 1921a; Forster 1849: 439; Fowler 1891; Fricken 1889: 357; Fuchs 1904a, 1905a; Gabler 1949b; Gaubil 1849: 127; Gemminger & Harold 1872: 2682; Georgijevic 1959: 594; Gobang 1855: 745; Goeze 1777: 130; Gozis 1875: 80; Gredler 1866: 372; Grill 1895: 309; Grune 1979: 161; Gyllenhal 1827: 624; Gyorfi 1936: 527, 1941b; Hagedorn 1903a, 1910d: 114; Hansen, V. 1939, 1956, 1964: 461; Heinemann 1908a; Heller 1947; Helliesen 1916: 84; Heyden 1876: 299, 1879: 140; Heyden, Reitter, & Weise 1883: 182, 1891: 674, 1906: 713; Hickin 1963; Holmgren 1867: 127; Holzel 1946: 81; Horion 1949, 1951, 1954a: 105; Houins 1939: 401–409; Ihssen 1939: 336; Jacenztkovsky 1912: 292; Janetschek 1957: 262; Johnson, W. F. & Halbert 1902: 819; Judeich & Nitsche 1895: 539; Kaltenbach 1874: 70, 593, 624; Kangas 1942b; Karpinski 1925: 216, 1931: 27, 1932b: 55, 1933b: 29, 1948b: 230; Karpinski & Strawinski 1948: 155; Keler 1925b: 275; Kersten 1933: 74; Kestercanek 1881a: 12; Kiefer et al. 1942: 529; Kleine 1912a: 263, 268, 1913a: 36, 1913b: 169, 1932a: 309, 1934a: 178; Kloft & Hinks 1945: 218; Knotek 1892a: 38, 1894a: 559; Koltze 1901: 154; Koschitsky 1900: 84; Kovacevic 1957: 69; Kraatz 1869: 60; Kurir 1947c: 22; Lacordaire 1866: 377; Langhoffer 1915c: 158; Leclercq 1971; Lentz 1857: 138; Liese 1950: 142; Lindemann 1884b: 264; Lokaj 1868: 64; Lomnicki 1913b: 149; Loos 1913: 413; Lovendal 1890c: 211; Lucht 1987: 280; Lunardoni & Leonardi 1889: 489; Lundblad 1950c: 116; Mahler 1987: 232; Marcu 1931f: 115; Matthews & Fowler 1883: 42; McLean & Borden 1977: 684; Michalski 1957: 165; Mirzoian 1950: 139; Muller 1776: 56; Munster 1928: 291; Murayama 1957b: 585; Negru 1966b: 401,1968a: 455; Novak, P. 1952: 416; Nunberg 1928b: 88, 107, 1954: 44; Nusslin 1898: 283; Ortzen 1886: 280; Pacher 1865: 151; Palm 1948a: 91, 1955c: 44, 1959: 352; Pfeffer 1924b: 472, 1928b: 2, 1931b: 74, 1950b: 76, 1989a: 54, 1989b: 131; Pittioni 1943: 176; Pjatnitskii 1930a: 165; Postner 1974: 471; Ragusa 1924: 117; Rapp 1934: 737; Ratzeburg 1837: 164, 1839: 165, 201; Redtenbacher 1858: 830, 1874a: 383; Reissig 1949: 131; Reitter 1869b: 155, 1894a: 92, 1916: 291; Rohrig 1955: 37; Roubal 1928: 454, 1935b: 73, 1941: 270; Rye 1867: 250; Saalas 1913a: 69, 84, 1930: 118, 1931: 67; Sahlberg 1900: 105; Sainte-Claire & Mequignon 1938: 448; Schaschl 1854: 133; Schaufuss 1915: 1234; Schaum 1859: 95, 1862: 101; Schedl 1961b: 185, 1980a: 17; Schilsky 1909: 189; Schilthuizen 1983; Schiodte 1873: 104; Schneider

& Leder 1977: 55; Schwerdtfeger 1981: 196; Seidlitz 1872: 393, 1891a: 568, 1891b: 614; Sharp & Fowler 1893: 34; Shaw 1960; Sick 1939: 110; Siebke 1875: 283; Solla 1893: 217; Stark 1926j: 126, 1927b: 88, 1952: 363; Stein 1868: 114; Stein & Weise 1877: 165; Stephens 1829a: 144, 1830: 354, 1839: 206; Stierlin 1898: 448; Stierlin & Gautard 1871: 292, 1906: 206; Strand 1946: 601; Sturm 1843: 230; Thomson 1859: 146, 1865: 358, 1868: 219; Tragardh 1914: 105, 1939b: 158, 233; Tredl 1907: 19, 1908b: 138, 1915: 214; Tschorbadjiev 1929: 166; Ulanowski 1884: 7; Villa & Villa 1833: 26; Vite 1953: 41; Wachtl 1870: 259, 1876a: 452; Wanka 1908: 231; Westhoff 1882: 240; Wichmann 1910b: 209, 1927a: 68; Winter, T. G. 1983: 28; Zetterstedt 1840: 194; Zoufal 1920: 21. (**tx**) Acloque 1896; Allen 1965a; Apel 1983; Bach 1854, 1864; Balachowsky 1949a: 198; Barbey 1901: 28, 110; Bedel 1888b: 404, 420; Beffa 1949, 1961; Bertolini 1872; Blandford 1890; Boas 1923: 363; Brancsik 1871; Castelnau 1840; Chapuis & Candeze 1853; Chorbadzhievo 1924d; Curtis 1840; Dejean 1821, 1825; Dombrowsky 1887; Duffy 1953; Duftschmidt 1825; Eggers 1926b, 1929e: 41; Eichhoff 1864a: 382, 1864b: 37, 1868d: 421, 1878b: 412, 1881a: 54, 291, 1883a: 116, 143; Endrodi 1957a: 309, 1957b; Erichson 1836: 60; Escherich 1923b: 488, 627; Fankhauser 1912a; Ferrant 1911; Ferrari 1867a: 9, 1867b: 113; Fleischer 1927; Formanek 1907: 54; Fricken 1889: 357; Gabler 1949b, 1955; Gillanders 1908; Girard 1873; Goeze 1777: 130; Grune 1979: 160–161; Gyllenhal 1813: 365, 1827: 624; Hagedorn 1910a: 158; Hansen, V. 1956, 1964: 461; Henry 1892: 14; Henschel 1876a: 216, 220, 240, 1895a: 194; Hopkins 1914: 131; Iablokoff-Khnzorian 1961: 89; Judeich & Nitsche 1895: 539; Kalina 1970: 130; Karpinski & Strawinski 1948: 155; Knotek 1892a: 38; Kuhnt 1913: 1061; Lacordaire 1866: 377; LeConte 1876: 356; Letzner 1891: 378; Leunis 1886: 182; Lindemann 1875c: 372; Linnaeus 1758: 355–356; Lovendal 1889b: 79, 1890c: 211, 1898: 200; Lucas 1920: 675; Lucht 1987: 280; Lunardoni & Leonardi 1889: 489; Muller 1776: 56; Murayama 1957b: 585; Negru 1966b: 40; Nordlinger 1848: 245, 1856: 31; Nunberg 1951: 263, 1954: 44; Pfeffer 1932b: 19, 1942a: 6, 1955a: 165; Portevin 1935: 326; Postner 1974: 471; Puton 1867: 631; Quaschik 1953: 35; Ratzeburg 1837: 164, 1839: 165, 201; Redtenbacher 1849a: 359, 1849b: 26, 1858: 830, 1874: 383; Reitter 1894a: 92, 1913a: 74, 1916: 291; Rhumbler 1913, 1914, 1922: 304, 330, 1927: 318; Rupertsberger 1880: 232; Saalas 1913a: 69, 84, 1914: 84, 1949: 329, 343, 378; Sahlberg 1836: 151; Schedl 1934f: 1644, 1951c: 86–88, 1952f: 88, 1980a: 17; Schimitschek 1937c: 53, 1955c: 83; Seidlitz 1872: 393, 1891a: 568, 1891b: 614; Speight 1981: 145; Spessivtsev 1913a: 95, 1922a: 475, 1925a: 177, 1931: 54–55; Stark 1952: 363; Stephens 1829a: 144, 206, 1829b: 12, 1830: 353–354; Stierlin 1898: 448; Thomson 1859: 146, 1865: 358, 1868: 219; Westwood 1840: 39; Wood, S. L. 1957a: 337, 344; Zetterstedt 1840: 194. (**ms**) Eichhoff 1868d: 421; Escherich 1932b; Heinemann 1908a; Lucas 1920: 675; Matouschek 1917: 214; Schurig et al. 1982; Schwappach 1924: 59; Weber, R. & Schurig 1984.

limbatus Fabricius 1787: 33 (*Apate*). Holotype ♂; Germania; UZMC, Copenhagen. Synonymy: Fabricius 1792: 363.

References: (**hb**) Boas 1923: 365. (**ds**) Beck 1817; Boas 1923: 365; Dejean 1821, 1825, 1837; Gyllenhal 1827: 419; Illiger 1820: 367, 1805: 129; Stephens 1829a: 144; Sturm 1826: 102; Villa & Villa 1833: 26. (**tx**) Balachowsky 1949a: 198; Dejean 1821, 1825; Eggers 1929e; Eichhoff 1876a: 378; Fabricius 1787: 33, 1792: 363, 1801: 382; Gmelin 1790: 1603; Gyllenhal 1827: 419; Herbst 1793: 105; Illiger 1907: 321; Panzer 1795a: 284; Stephens 1829a: 144. (**ms**) Roeschke 1912: 43.

***dorjitenzingi* Schmutzenhofer** 1988: 487. Holotype ♂; Bhutan-West, Chelaila, 3000 m; NHMW, Wien.

Figures: Schmutzenhofer 1988: 487 (male genitalia).

Distribution: Asia (Bhutan).

Hosts: *Larix griffithiana, Picea spinulosa, Pinus wallichiana*.

Notes: This species is allied to *betulae* and probably breeds in a non-coniferous host.

References: (**tx**) Schmutzenhofer 1988: 487.

***gaimaensis* (Murayama)** 1937: 369 (*Xyloterus*). Holotype, sex?; Horyuri, Korea; Murayama Collection in USNM, Washington.

Distribution: Asia (Japan/ Korea).

Hosts: *Larix olgensis coreana, Alnus* sp.

References: (**ds**) Cho 1957; Choo 1983: 61; Choo & Woo 1985: 164; Ko 1969: 288; Murayama 1937a: 2, 1937b: 369, 1948: 6; 1957b: 570. (**tx**) Choo 1983: 61; Murayama 1937b: 369–370, 1950: 52, 1957b: 570; Schedl 1951c: 94.

° ***impressum* Scudder** 1876: 83. Holotype, sex?; Green River Beds in western Wyoming [USA]; not located.

Distribution: North America (fossil in Eocene deposits).

Notes: (1) Hopkins 1900a: 66 (not Scolytidae, perhaps Anobiidae).

References: (**ds**) Hagedorn 1910d: 114; Kleine 1913b: 169; Murayama 1957b: 585; Scudder 1876: 83, 1890: 470, 1891: 515, 1893: 157; Wickham 1920: 363. (**tx**) Hagedorn 1910a: 158; Keler 1928: 10; Murayama 1957b: 585; Scudder 1876: 83, 1890: 470.

***laeve* Eggers** 1939c: 122. Syntypes 5 ♂; Japan: Karafuto; Eggers Collection, 2 syntypes in NHMW, Wien.

Figures: Strand 1946: 169 (male genitalia).

Distribution: Asia (Japan/ E USSR), Europe (Norway/ Poland/ Sweden/ W USSR).

Hosts: *Picea excelsa*.

References: (**tx**) Eggers 1939c: 122; Schedl 1951c: 87, 1979c: 135.

piceum Strand 1946: 172. Syntypes, sex?; Norway: Roa, in the immediate vicinity of Oslo; not located. Synonymy: Wood 1983 (private notes based on two specimens in Schedl Collection in NHMW, Wien, compared to the Eggers syntypes of *laeve*).

References: (**ds**) Heller 1947; Klefbeck & Sjoberg 1960: 230; Lundberg 1958: 232, 1974: 92. (**tx**) Schedl 1962p: 206; Strand 1946: 172.

***lineatum* (Olivier)** 1795a: 18 (*Bostrichus*). Syntypes, sex?; Northern Europe; MNHN, Paris (?).

Figures: Bevan 1987: 116, Bright 1976d: 202, Bright & Stark 1973: 159, Chararas 1961c: 109, Furniss & Carolin 1977: 411, Grune 1979: 160, Joly 1976:fig. 139, 241, Li, Dang, & Shi 1977: 189, Postner 1974: 471, Tsai & Li 1959: 95, Wood 1957a: 339–341.

Distribution: Africa (Algeria/ Egypt/ Libya/ Morocco/ Tunisia), Asia ("China"/ Japan/ Korea/ Turkey/ Kamchatka, Sakhalin Island, Siberia in E USSR), Europe (Austria/ Belgium/ Bulgaria/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Hungary/ Italy/ Luxemburg/ Netherlands/ Norway/ Poland/ Romania/ Scotland/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia), North America (Alaska/ Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland, Nova Scotia, Ontario, Quebec, Saskatchewan in Canada/ Arizona, California, Colorado, Connecticut, District of Columbia, Idaho, Maine, Michigan, Minnesota, Montana, Nevada, New Hampshire, New Mexico, New York, North Carolina, Oregon, Pennsylvania, South Dakota, Tennessee, Utah, Washington, West Virginia, Wyoming in USA).

Hosts: *Picea* spp., *Abies* spp., *Cedrus* sp., *Larix* sp., *Pseudotsuga* spp.

Notes: (3) Endrodi 1957a: 309 (named aberrations *lineellus*, *pauper*, no status), 1957b: 416 (named aberration *mericionale*, no status). The name *melanocephalus* Fabricius has erroneously been referred to this species (Eggers 1933g: 18).

References: (**ay**) Atkins 1966b: 983; Atkins & Farris 1962a; Balfour 1962; Batra 1963b: 227; Becker, G. 1962b; Bennett & Borden 1971; Borden & Slater 1969b; Cerezke 1964: 480; Chapman 1956: 1183, 1957, 1958c, 1969b, 1972; Escherich 1923b: 458, 488, 624; Farris 1963: 257; Farris & Funk 1965: 527; Feytaud 1950a; Fisher 1954; Francke-Grosmann 1956b, 1957: 140, 1959; Graham, K. 1959, 1961, 1968; Hadorn 1933; Hatch 1926; Leisewitz 1906: 102; Lekander 1959b: 31; Moeck 1968a: 521, 1970: 985–995; Murayama 1933a: 13; Nijholt 1965: 16–18, 1967, 1969; Nijholt & Chapman 1964; Nijholt & Sahota 1974: 931; Nosek 1958a: 87; Nunberg 1928a: 140, 1951: 263; Nusslin 1911a: 59, 278, 378; Payne et al. 1973; Reid 1958a: 464; Roberts 1961c; Scherb 1971; Schneider 1976; Schneider & Rudinsky 1969a; Schneider-Orelli 1913: 61; Schonherr 1970b; Thomas, J. B. 1957: 4, 1960: 416, 1967; Uchastnova 1988: 38; Vogel 1988. (**bv**) Adlung 1960: 430; Annila 1971a: 11, 1975; Annila & Petaisto 1978; Annila et al. 1972; Anonymous 1961a; Bakke 1973, 1983a; Balfour & Kirkland 1963: 163–166; Balfour & Paramonov 1962: 66–67; Bauer & Vite 1975; Becker, P., Adlung, & Holtmann 1983; Bedard, W. L. Jr. 1969a; Bevan 1962a: 62–66, 1962c: 94–99; Binion 1962; Birch 1984; Bletchly 1961: 15, 1962: 7–12; Bletchly & White 1962: 139–163; Borden 1967: 1182, 1971b, 1974b, 1984; Borden & Bennett 1969: 782–785; Borden, Brownlee, & Silverstein 1968: 629–636; Borden & Fockler 1973; Borden & Groberman 1981; Borden & Slater 1969b: 454–455; Borden & Wood 1966: 253; Borden et al. 1980, 1981, 1982; Castek, Barbour, & Rudinsky 1967: 658–660; Chapman, J. A. 1955: 3–4, 1958b: 3–4, 1958c: 375–380, 1959, 1960: 3–4, 1961a: 3–4, 1962: 74–92, 1963b: 673–676, 1966: 50–59, 1967; Chapman, J. A. & Dyer 1959: 30–33, 1960: 30, 1969: 95–101; Chapman, J. A., Farriss, & Kinghorn 1963; Chapman, J. A. & Kinghorn 1958: 362; Chararas 1961d: 602–604; Choo, Woo, & Park 1988; Daterman, Rudinsky, & Nagel 1965; Dyer 1960: 3–4, 1961: 519–520, 1963a: 624–631, 1963b: 3–4; Dyer & Chapman 1962: 3, 1965: 42–57; Dyer & Wright 1967; Ellefsen 1980b; Fockler & Borden 1972; Francia 1966; Francia & Graham 1967: 985–1002; Francke & Heeman 1974; Fu, Wu, & Ning 1984; Furniss, Baker, & Hostetler 1976: 1300; Gavelis & Jakaitis 1981; Gerken & Hughes 1976; Graham, K. 1959, 1961: 519–520, 1962, 1968: 905–908; Graham & Moeck 1968: 602–603; Graham & Werner 1956a, 1956b; Greckin 1960; Groberson & Borden 1982; Grune 1979: 161; Heeman & Francke 1976; Hertel, Hain, & Anderson 1969: 1090; Inscoe 1982; Inscoe & Beroza 1976: 168; Jacobson 1965,1972; Johnson, N. E. 1960a: 12, 1960b: 4, 1961; Johnson, N. E., Wright, & Orr 1961: 89; Kevdina 1897: 108; King, C. J. 1981, 1982; King, C. J., Oehlschlager, & Borden 1983; Kinghorn 1960: 51; Kinghorn & Chapman 1954: 3, 1957: 46, 1959: 81–92; Kinghorn & Dyer 1960; Klassen, Ridgway, & Inscoe 1982; Klimetzek, Vite, & Mori 1980; Klimetzek et al. 1981; Konig, E. & Berwig 1971; Konig, E., Vite, & Bogenschutz 1981; Krol & Zabecki 1976; Leist 1902c: 25; Lindgren 1982, 1983, 1984; Lindgren et al. 1983; Loschiavo, Beck, & Norris 1963: 764; Loyttyniemi & Hiltunen 1976; Luitjes 1976; MacConnell et al. 1977; Magema, Gasper, & Wathelet 1982; Magema, Gasper, & Severin 1982;

Magema & Gibson 1977; Magema & Severin 1975; McKay et al. 1982; McLean & Borden 1977; McMullen & Atkins 1962b: 1322; Meixner 1937: 1215; Moeck 1971, 1981: 940; Mori & Sasaki 1979: 1329–1332; Mori et al. 1982, 1983; Mozolevskaya, Lebedeva, & Galaseva 1979; Niemeyer, Schroder, & Watzek 1983; Nijholt 1965: 16–18, 1967: 51–55, 1969: 29–31, 1970: 894–897, 1973, 1980; Nijholt & Chapman 1964: 3–4, 1968: 1151–1153; Nijholt & Schonherr 1976; Novak, V. 1962b: 266–269, 1963a: 23–43; Nuorteva 1956c: 15; Oda 1974: 7; Paiva 1982a, 1982b; Paiva, Kiesel, & Vite 1983; Payne & Wood 1981: 491; Payne et al. 1983; Pitman 1966b; Prebble 1960; Prebble & Graham 1957: 92; Prell 1930c: 636; Pullianinen 1965, 1966: 198, 1983; Reiche 1967b; Reid 1958a: 464; Richert & Kohnle 1984; Rozhkov 1970: 144; Rudinsky 1966b: 356–361, 1966c: 218–219; Rudinsky & Castek 1966; Rudinsky & Daterman 1964a: 1339, 1964b: 300–303; Rudinsky & Schneider 1968, 1969b; Saarenmaa 1978; Schnaider 1955: 233; Schneider & Rudinsky 1969: 955–1003, 1181–1186; Schneider-Orelli 1947c: 94; Schonherr 1970b; Schurig et al. 1982; Schwerdtfeger 1981: 195; Shore & McLean 1983; Schwerdtfeger 1981: 195; Silverstein 1974; Slessor et al. 1980; Starzyk & Fizia 1984; Vasechko 1971a, 1971b; Vite 1965: 438–439, 1980; Vite & Bakke 1979; Vite & Pitman 1967: 683–701; Weber, R. & Schurig 1984; White, J. D., Avery, & Carter 1982; Wichmann, H. E. 1967; Winter, K. 1980; Wood, D. L. 1967b, 1968, 1980b; Wright, R. H. 1965, 1966; Zhong & Schowalter 1989. (**en**) Acatay 1943a: 68; Akselsen 1979; Anonymous 1948k: 7, 1960e, 1961a, 1962c, 1966c, 1972c, 1982k, 1983c; Ass & Funtikow 1941; Austara & Saether 1965: 121–122; Badoux 1921: 163–173; Baisch 1954: 322; Baker, W. L. 1972: 267; Bakke 1960: 290–294; Bakshi 1950: 111–120; Balfour & Kirkland 1963; Barbey 1901: 112, 1906a, 1922b, 1925: 94; Barlow 1966; Baudys 1920: 51–58; Beauverie 1912; Becker 1949, 1950; Becker, P., Adlung, & Holtmann 1984; Beckwith 1972; Bejer-Petersen 1959a, 1978; Berdennikova 1954: 86; Bevan 1962b, 1962c, 1963, 1964b, 1966, 1987: 125; Bielussov 1917: 334–337; Bilczynski 1962; Blanchere & Robert 1889; Blandford 1890; Blatchford 1983: 27; Bletchly 1962, 1964; Bletchly & Bevan 1963a, 1963b; Bletchly & White 1962; Boas 1933: 268–280; Boocock 1958, 1959d; Borcea 1924: 221–260; Borden, Brownlee, & Silverstein 1968; Bussman 1949; Butovitsch 1934; Capecki 1962a, 1963: 303–308, 1966: 23–34, 1967: 3–80; Capek 1966; Cermak 1938; Chamberlin 1939: 300, 1958: 126–127; Chapman 1974; Chapman & Nijholt 1965: 3–4, 1980b; Chararas 1961b: 69, 1961c: 92; Chorbadzhievo 1929; Christiansen 1967: 21, 45, 1970; Christiansen & Saether 1970: 28–30; Cogho 1877; Crooke & Bevan 1960; Crooke, Bevan, & Davies 1961; Damjanovic 1955; Dolph & Pettinger 1971: 12; Doom & Luitjes 1971a; Drooz 1985: 371; Dyer 1960, 1963; Dyer & Nijholt 1965: 3; Dyer & Wright 1967; Eckstein 1915, 1926: 572; Edwards 1958: 614–615; Eglitis 1984b; Eglitis & Laurent 1983; Egorov 1958: 1492; Ehnstrom et al. 1974; Eichhorn & Graf 1974; Eidmann 1965a,1973; Eidmann & Klingstrom 1976: 256; Ekici 1971: 1–56; Enzinger 1949; Escherich 1917: 97–115,1923b: 458, 488, 624, 1929, 1932a, 1936; Esterberg 1959; Falck 1916: 165; Fall & Cockerell 1907: 217; Fankhauser 1912b; Feytaud 1950a; Fiddick & Van Sickle 1980: 20; Fisher 1952a; Fisher, Thompson, & Webb 1953; Fleischer 1877a; Franz 1948e; Fystro & Bakke 1962; Galoux 1947: 12, 1948e; Georgescu et al. 1957: 357, 451; Georgijevic 1959: 594; Gradojevic 1933: 789–790, 1938; Graham 1953, 1963; Graham & Webb 1952; Graham & Werner 1956a; Grandi 1951; Gurchiani 1968a, 1968b; Guse 1893; Gyorfi 1959; Hanson, H. S. 1940a; Hard 1974: 12; Hartig 1861: 329, 1872b, 1877: 194; Hasek 1955, 1961: 5; Hedlin & Woods 1970; Heqvist 1965; Herlein 1878; Hess 1898: 360, 1907: 255; Hess & Beck 1914: 284, 1927: 340; Hewitt 1914: 501–518; Hinds & Buffam 1971; Hofacker, Loomis, & Tucker 1984: 56; Holsten, Werner, & Laurent 1980; Holsten & Wolfe 1981; Hopkins 1894b: 295, 1899c: 256, 444; Houins 1939: 401–409; Hrubik 1973; Hubault 1945; Huss 1969, 1970: 116–122; Inouye 1955; Inouye & Yamaguchi 1955a: 235; Jacentkovsky 1933: 270; Jacquiot 1952: 1; Jahn 1952a: 99; Jahn & Sinreich 1959; Jardine 1969: 48; Johnson 1958a: 508–511, 1961: 3; Johnson, N. E. 1963a; Joly 1976; Judeich & Nitsche 1895: 539; Juutinen 1960: 25; Kailidis 1963: 433–443, 1966a, 1966b: 55; Kailidis & Georgevits 1972; Kailidis & Markalas 1988; Kalandra & Pfeffer 1935: 4; Kangas 1934d: 1–68; Karner & Kliefoth 1976; Kauschinger 1893: 145; Keen 1938: 145; Keller 1903b: 48; Kellner 1880: 423, 1881: 368; Kharitonov 1924: 199–204; Kholodkovskii 1912: 278, 282, 322; Kimmey & Furniss 1943: 1–61; Kinghorn 1955b: 3, 1957a: 3–4, 1957b: 213, 1960a, 1961, 1962, 1963; Kinghorn & Chapman 1957: 46–49; Kinghorn & Webb 1950: 3–4; Kirschner 1860: 91; Kleiber 1930: 183; Klopfer 1897: 31; Knuchel 1947: 87; Kohreng 1907: 47; Komarek et al. 1931: 1–256; Konig, E. 1957: 104; Konig, E. & Berwig 1971, 1978; Konig, E., Vite, & Bogenschutz 1981; Kontkanen 1932: 61; Koppen 1882: 237, 261; Kovacevic 1924: 21–22; Krol 1980a, 1980b; Krol & Zabecki 1976; Kudler et al. 1956: 100–105; Kufner, Roth, & Schmidt 1973; Kunstler 1864: 783; Kurenzov 1935c: 188, 1950a: 6; Lanz 1975; Lejeune 1958: 66–68; Lejeune & Richmond 1975; Lekander 1952b: 5, 1954b: 17, 1955b: 18, 1966; Lekander & Rennerfelt 1955: 10; Lekander, M. 1951: 109; Liese 1968; Lindgren 1980a: 70, 1983, 1984; Lindgren & Borden 1983; Lindgren et al. 1983; Lindquist, O. H. & Syme 1981: 110; Lorber &

Novak 1967: 60–64; Loyttyniemi 1967: 49; Lysenko 1959: 15–22; MacDougall 1925: 1–37, 1929: 1–41; Maksymov 1950: 554, 1965, 1968: 128–131; Marcu 1926c: 64; Marker-Kohlfurt 1896: 84; Martinek 1953a: 368, 1974; Massey & Wygant 1954: 21; Materna & Novak 1955: 6–9; Mathiesen-Kaarik 1953: 6, 26; Mayr 1960: 452–453; McBride, C. F. & Kinghorn 1960: 40–52; McGuffin & Barker 1947: 57; McGugan et al. 1959: 1–114; McLean & Borden 1977; McMullen 1956: 34–43; Melenotti 1924: 1–60; Mokrzecki 1925c: 44, 1931: 67–68; Molnar, Ross, & Fiddick 1971: 81, 1972: 84; Molnar et al. 1968: 115, 1969: 117, 1970: 104; Morley 1939: 243–248; Morris, E. V. 1969: 61; Mostauskis 1923: 219–240; Mostovsky 1923: 287–288; Muller 1912: 187; Niemeyer 1974: 290, 1975: 156, 1976: 138, 1982; Niemeyer, Schroder, & Watzek 1983; Niemeyer & Thalenhorst 1974; Nigam 1969, 1970, 1973a, 1978a, 1978b, 1979b, 1980; Nishiguchi 1959: 270–274; Nosek 1951: 106, 1952b: 100; Novak, V. 1959b: 73, 1960a, 1962a, 1963b, 1967, 1972a; Novak, V., Hrozinka, & Stary 1976: 34; Novak, V. & Temmlova 1962; Nuorteva 1959c: 1026; Nusslin 1883: 152, 1913: 227; O. B. 1905: 465; Ostaff 1974; Overend 1978; Paiva 1982b; Pawlowitsch 1883: 10; Pax 1921: 43–56; Payne & Wood 1981: 491; Pfeffer 1933: 43, 1940c: 272, 1949b: 150, 1950c: 1; Polozencev 1926: 1–5; Polozencev, Rubcova, & Naumenko 1968; Polubojarinoff 1929: 45–52; Pomocnicze 1876: 161; Popescu 1960; Prebble 1960; Prosoroff 1933: 463–466; Pullianen 1983; Quairiere 1905: 627; Quaschik 1953: 3; Questienne 1979: 117; Reisch 1967a: 493–510, 1967b: 2221; Reisseneger 1889: 337; Rhumbler 1922: 305, 1927: 318; Richert & Kohnle 1984; Richmond, H. A. 1948a: 59, 1953b: 48; Richmond, H. A. & Nijholt 1972; Richmond, H. A. & Radcliffe 1961; Richter 1918: 241; Rode et al. 1984; Roediger 1984; Rose, A. H. & Lindquist 1980: 61; Ross 1954: 143; Ross, D. A., Baranyay, & Fiddick 1973: 86; Ross, D. A., Van Sickle, & Wood 1981: 89; Rossem 1957: 58; Rudnev 1965b, 1966; Ruppel 1967: 97; Ruppel & Pass 1970: 23; Saalas 1919: 1–415, 1949: 329, 343, 375; Scheidter 1919: 88; Schimitschek 1935a: 197, 1937c: 53, 1938b: 114, 1938c: 2119, 1939d: 2119, 1947g: 191, 1952c: 60, 1955a: 39, 61, 1955b: 102, 1955c: 83; Schindler 1967: 16–23, 1968a, 1968b: 268–270, 1969b: 136, 1969c: 1077–1078, 1970: 505–506; Schmidt, H. 1973; Schmidt, H. & Roth 1975; Schneeberg 1925: 498; Schneider-Orelli 1938: 289–305, 1946: 318, 1948a: 77, 1948b: 72; Schonherr 1958: 227–228, 1967: 230–237; Schonherr & Wellenstein 1967; Schonwiese 1934: 111; Schooley & Party 1981; Schwappach 1904: 80; Schwappach et al. 1929: 186; Schwerdtfeger 1944a: 184, 1955b: 92, 1957a: 190, 1964b: 331–332, 1968a; Sedlaczek 1921: 335, 1933: 307, 1938: 58; Shea & Johnson 1962: 1; Shiraki 1952; Shore & McLean 1983,1984; Sierpinski 1966: 58, 1969b: 109–127, 1971b: 10; Silver & Ross 1958: 79, 1959: 95, 1960: 98, 1961: 99, 1962b: 111, 1963a: 110, 1964b: 113, 1965a: 116; Sinreich 1958: 197, 1962; Skrzypczynska & Krol 1974; Smith, G. J. & Melvin 1974a, 1974b; Snyder 1927: 7; Splawa & Heyman 1970: 113–159; Starzyk & Fizia 1984; Storch 1968; Strohmeyer 1906b: 333; Swaine 1913: 89; Templin 1973: 105; Thomas, J. B. 1958: 394, 1965a; Titova 1966; Tragardh 1921e: 64, 1927c: 89; Tragardh & Butovitsch 1936: 575; Tripp & Blauel 1969: 104; Tripp, Ross, & Van Sickle 1978: 84; Tuovinen 1961; Uusvaara & Loyttyniemi 1975; Vappula 1962: 125; Vasechoko 1964; Vite 1955: 1333–1336, 1956: 59, 1965b, 1984a, 1984b; Wachtl 1901: 379, 382; Wardle 1929: 325; Weber, H. 1926: 572; Weber, T. 1965; Werner & Graham 1957: 3; Wichmann 1927b: 350; Wolff & Krausse 1922: 90; Wong, H. R. & Melvin 1973; Wood, D. L. 1980b; Wood, R. O. & Doidge 1971: 8, 1972: 62; Wood, R. O., Geistlinger, & Doidge 1970: 12; Wood, R. O. & Unger 1977: 5; Yanagisawa 1952: 103–116; Zarco 1946a: 251; Zhang et al. 1958: 28; Zieger 1948a: 378, 1950b: 38; Zolk 1935: 614–640, 1937: 147–172; Zumer 1983d. (**ec**) Adlers & Butovitsch 1961: 1–27; Alfaro & Borden 1980: 1260; Annila 1975, 1977; Annila & Petaisto 1978; Apfelbeck 1916b; Ass & Funtikow 1941; Atkins 1966b: 972; Baisch 1954: 322; Bakke 1960: 308; Bakshi 1950, 1951, 1952; Balazy 1964; Balazy & Michalski 1964b; Balfour & Kirkland 1963; Barbey 1906a; Batra 1963b: 216; Batra & Michie 1963: 471; Beauverie 1910b; Beran 1936; Bletchly 1961: 14; Bletchly & White 1962; Borden et al. 1981; Brammanis 1949; Bucher 1963: 126; Buchner 1949; Bugabee 1956; Bushing 1965: 468; Capecki 1962b, 1963, 1966, 1967a, 1982; Carpelan 1944; Chamberlin 1918a, 1939: 300, 1958: 126–127; Chapman, J. A. 1955e, 1959, 1960: 3, 1962c, 1967; Chapman, J. A., Farris, & Kinghorn 1963: 430–439; Chapman, J. A. & Neitsch 1959: 3–4; Chapman, J. A. & Nijholt 1980b; Chararas 1961d; Christiansen & Saether 1968; Cobb et al. 1968; Coster & Gara 1968: 69–76; Cote & Allen 1980; Cross & Moser 1971; Deyrup & Gara 1978: 276; Dyer 1962b: 910–915, 1967: 11; Dyer & Chapman 1964: 3–4; Dyer & Kinghorn 1961; Dyer & Wright 1967; Ehnstrom 1963a; Eichhorn & Graf 1974; Eidmann 1965c, 1974b; Eulefeld 1906; F. L. M. 1869; Farris 1963: 257; Farris & Chapman 1957; Farris & Funk 1965: 528; Fisher 1954; Fleischer 1877a, 1877b; Francia 1966: 1010–1011; Francia & Graham 1967; Francke-Grosmann 1956b, 1957, 1959; Fuhrer 1975; Funk 1965: 929–932; Furniss, M. M. 1966; Furniss, R. L. & Carolin 1977: 411; Gadeck 1976; Galoux 1947c, 1948a; Geschwind 1918: 287–295; Gornostaev 1917: 308–315; Graham 1959: 283–284; Greckin 1960; Grossmann 1931a; Gyorfi 1941b; Hadorn 1933: 1–120, 1934: 64–65; Hagedorn 1907c; Hartig 1844; Heliovaara & Lilja

1989; Hellrigl & Schwenke 1985: 48; Heqvist 1963: 154, 1965: 23; Hinds & Buffam 1971; Hubenthal 1902: 291; Inouye & Yamaguchi 1955a: 235; Inouye et al. 1955: 114; Jacquiot 1954: 1–2; Jahn & Sinreich 1960b; Jakaitis 1979b; Janka 1908; Joly 1949a: 9; Kangas 1932: 12, 1946b: 22; Keen 1938: 145; Khomentovskii 1976; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1980a, 1980b, 1983; Kinghorn 1956: 3–4, 1957a: 3; Kleine 1908c: 220, 1909a: 49, 77, 1944: 70; Knauer 1908: 500; Knight 1961: 212; Konig, E. & Berwig 1971; Kostin 1964: 112; Kraemer 1950b: 419; Krogerus 1927: 123; Krol 1980a, 1980b, 1984; Krol & Zabecki 1976; Kuhn 1949a: 271; Kurenzov 1934a: 50; Lekander 1966; Lekander & Rennerfelt 1955: 1–36; Li & Zhou 1980: 70; Lindquist 1971; Lindquist & Hunter 1965; Loyttyniemi & Hiltunen 1976; Luitjes 1976; Lundberg 1984; Lysenko 1959: 21; MacGillavry 1906: 27; Magema 1976; Magema, Verstraeten, & Gasper 1981; Mahunka & Moser 1980,1982; Massey & Wygant 1954: 21; Mathiesen-Kaarik 1953: 6, 26, 1960c; Matthews 1970; Mayne 1926: 234–245; McAlpine & Morge 1970: 1564; McLean & Borden 1977; Meyer 1918: 178; Michalski & Ratajczak 1989; Mozelevskaya, Lebedeva, & Galaseva 1979; Munro 1926: 1–27; Neger 1908b: 281, 1908c: 276, 1908d: 322, 1909a: 374, 1911a: 50, 1911b: 223, 1915: 47; Niemeyer & Thalenhorst 1974; Nijholt 1980, 1981; Nikitsky 1978; Nishiguchi 1959: 271; Nosek 1951: 106, 1952b: 100, 1959a: 118, 1959b: 87; Novak, P. 1952: 416; Novak, V. 1960, 1962b, 1970; Nuorteva 1956a: 17, 1957b: 68, 1961c: 119, 1968a, 1971: 69; Nusslin 1927: 318; Okolow 1963; Ostaff 1974; Palmen 1944: 60; Perris 1856a: 244; Peyerimhoff 1928: 110–111; Pfeffer 1923a: 331, 1928b: 3, 1932a: 11, 1933: 43, 1943b: 179, 1949b: 150, 1950c: 1, 1955b: 84, 1957a: 196, 1959: 4; Pfeffer & Prihoda 1950: 3; Pfetien 1925: 45; Popo & Thalenhorst 1974a; Pullianinen 1965; Purrini 1977a; Quaschik 1953: 3; Rafes 1962,1966: 80; Ratzeburg 1869a: 95; Reisch 1967a; Richmond & Radcliffe 1961; Roeper & French 1981; Ruhm 1956b: 4; Saalas 1917a: 18, 1928: 649, 1949: 329, 343, 375, 1951: 13; Saarenmaa 1978; Samsinak 1960; Schedl 1936f: 172, 1958d: 188; Scheidter 1919: 69–90; Schimitschek 1931b: 487, 1935a: 197, 1953b: 534, 1955a: 39, 61; Schneider 1976; Schneider-Orelli 1913: 61; Schwerdtfeger 1944a: 184, 1957a: 190; Sedlaczek 1908: 53, 1915a: 127, 1933: 307, 1935a: 153; Shepherd 1966: 511; Slaby 1947: 375; Sokanovskii 1936: 74; Splawa-Neyman 1970; Stark, R. W. 1982; Starzyk & Fizia 1984; Strube & Benner 1984; Sundfor 1979; Szczepanski 1960a: 406; Thomas, J. B. 1958: 394; Thompson, W. R. 1943: 118; Thompson, W. R. & Simmonds 1964: 40, 1965: 4; Thong & Webster 1983; Titova 1966; Tragardh 1927a: 198, 1928: 775; Turnau 1984; Tvermyr 1967: 496; Uchastnova 1988: 38; Vasechko 1971b; Vite 1952a: 102; Werner & Graham 1957: 3; Werner & Holsten 1984; Wiackowski 1957a: 43; Wichmann 1953b: 61, 1955a: 92, 1956: 60, 1967; Winter, K. 1980; Wisniewski 1979c: 7; Zinovjev 1957: 331, 1958: 385; Zumr 1985b. (**hb**) Acatay 1943a: 68–70; Adlung 1960: 430–435; Alkan 1946; Altum 1881c: 309, 1888b, 1897; Annila 1977; Annila & Petaisto 1978; Annila et al. 1972; Anonymous 1948k: 7, 1961a, 1966c, 1972c; Apfelbeck 1916b, 1917; Arndt 1920; Atkins 1966a: 286; Atkins & Farris 1962: 25; Austara & Saether 1965; Bach 1864; Baeta Neves 1943a; Baker, W. L. 1972: 267; Balfour 1962: 52; Balfour & Paramonov 1962; Barbey 1901: 10, 28, 112, 1913, 1922b, 1925: 94, 1934, 1942; Baudisch 1905a; Becker, G. 1950; Beckwith, Wolff, & Zasada 1977; Beffa 1949; Bejer-Petersen 1957, 1978; Beling 1873, 1887; Bennett & Borden 1971; Beran 1936; Bevan 1962, 1962c, 1987: 125; Bilczynski 1962; Blanchere & Robert 1889; Blandford 1890; Bletchly 1961: 14, 1962; Bletchly & Bevan 1963a, 1963b; Bletchly & White 1962; Borcea 1924; Borden, Brownlee, & Silverstein 1968; Borden & Fockler 1973; Borden et al. 1982; Brandt 1948, 1960: 136; Bright 1976d: 120; Bright & Stark 1973: 72; Budge 1949; Budkov 1897; Capecki 1966,1967a; Cecconi 1903, 1924; Cermak 1938; Chamberlin 1939: 300, 1958: 126–127; Chapman, J. A. 1955b, 1955e, 1960a, 1960b: 3, 1962c, 1966b, 1974; Chapman, J. A. & Dyer 1960: 30; Chapman, J. A., Ferris, & Kinghorn 1963; Chapman, J. A. & Kinghorn 1958; Chapman, J. A. & Neitsch 1959; Chapman, J. A. & Nijholt 1965,1980a; Chararas 1961b: 69, 1961c: 92, 1961d, 1962c: 308; Charvat 1950; Chorbadzhievo 1929; Christiansen 1967; Christiansen & Saether 1968; Daterman, Rudinsky, & Nagel 1965; Dombrowsky 1887; Dominik 1959: 1–9; Doom & Luitjes 1971a; Drooz 1985: 371; Dyer 1961, 1962a, 1963b, 1965, 1967; Dyer & Chapman 1963, 1965; Dyer & Kinghorn 1961: 746; Dyer & Nijholt 1965; Eckstein 1889, 1897, 1915, 1926: 572, 1928, 1939b; Eglitis 1984b; Eglitis & Laurent 1983; Eichhoff 1881a: 54, 298, 1881b: 639, 1882a: 241; Eichhorn & Graf 1974; Eidmann 1974b; Eidmann & Klingstrom 1976: 256; Escherich 1923b: 458, 488, 624; Everts 1900, 1903: 771; Falck 1916: 165; Feytaud 1950a; Fisher 1952a, 1954; Fleischer 1877a; Florov 1949: 92; Fockler & Borden 1972; Francia 1966; Franz 1950; Fuchs 1904a, 1911b; Furniss, R. L. & Carolin 1977: 411; Furst 1888: 109, 113; Galoux 1947a, 1948a; Gibson, Kinghorn, & Chapman 1959: 2; Gillanders 1908; Girard 1873; Gornostaev 1916: 314; Graber 1879: 130; Graham, K. 1961, 1963; Grandi 1951; Groschke 1953c; Gurchiani 1968a: 207–210, 1968b: 683–688; Gyorfi 1936: 527, 1957; Hadorn 1933, 1934; Hagedorn 1903a; Hartig 1861: 329, 1872b, 1877: 194; Helmbacker 1924; Henschel 1876a: 35, 240, 1885b, 1895a: 184; Hess 1898: 360, 1907: 255; Hess & Beck 1914: 284,

1927: 340; Holmgren 1867: 113, 127; Holsten, Werner, & Laurent 1980; Holsten & Wolfe 1981; Hopkins 1899c: 256, 444; Hufnagel & Puzyr 1951: 108–109; Husson 1955: 354; Inouye et al. 1955: 114; Jamnicky 1960: 820–831; Johnson, N. E. 1958a: 508, 1958b: 237; Johnson, N. E. & Pettinger 1961b: 2; Joly 1949a: 9, 1976, 1976b; Judeich & Nitsche 1895: 539; Juutinen 1978; Kalshoven 1962: 13; Karner & Kliefoth 1976; Karpinski 1933b: 29; Karpinski & Strawinski 1948: 155; Karsch 1883: 142; Kauschinger 1883: 106, 1893: 145; Keen 1938: 145; Kellner 1880: 423, 1881: 368; Kholodkovskii 1912: 278, 282, 322; Kinghorn & Chapman 1959: 81–92; Kinghorn & Dyer 1960: 4; Kleine 1911: 159; Knotek 1894a: 559; Knuchel 1947: 87; Knutsson 1973; Koch 1909: 337; Konig, E. 1957: 104; Kostin 1960: 133; Kraemer 1950b: 419; Krivolutskaya 1956: 833, 1960, 1973: 140; Kurenzov 1935a: 36, 1948b: 101, 1950d: 210; Kurenzov & Kononov 1961: 600; Lejeune & Richmond 1975; Lekander 1954b: 17, 1959b: 31; Lengerken 1939: 35, 1954: 315; Li, Dang, & Shi 1977: 70; Li & Zhou 1980: 70; Liese 1950: 140; Lindgren 1980a: 70; Lohreng 1907: 47; Loos 1913: 406; Louzil 1961: 25; Luitjes 1976; Lunardoni & Leonardi 1889: 486; MacGillavry 1906: 27; Magema 1976; Magema, Gasper, & Severin 1982; Maksymov 1950: 554, 1965; Marcu 1941: 403; Marikovskii 1956: 73; Massey & Wygant 1954: 21; Masutti 1964; Michalski 1959a: 291; Mozolevskaya, Lebedeva, & Galaseva 1979; Munro 1916b: 115, 1926: 60; Nijholt 1983; Nordlinger 1856: 30; Nosek 1959a: 118, 1959b: 87; Novak, V. 1960a: 1–131, 1960b: 309–322, 1962a, 1963a, 1963b, 1963c; Novak, V., Hrozinka, & Stary 1976: 34; Nunberg 1929b: 108, 1929c: 120; Nuorteva 1956c: 15, 1968a,1970; Nusslin 1898: 283, 1906b: 14, 1913: 227, 1927: 318; O. B. 1905: 465; Ostaff 1974; Paiva & Vite 1982; Paiva, Kiesel, & Vite 1983; Parfentev 1951: 429; Perris 1856a: 244; Peyerimhoff 1919: 257; Pfeffer 1932: 1–23, 1933: 3–54, 1941b: 2, 1941c: 4, 1957: 196–207, 1989a: 54; Popo & Thalenhorst 1974a, 1974b; Postner 1974: 473; Prebble 1960; Prebble & Graham 1957: 92; Prell 1930c: 636; Pullianinen 1983; Quairiere 1905: 627; Quaschik 1953: 3; Questienne 1979: 117; Qui & Huo 1958: 267; Rafes 1962; Ratzeburg 1837: 132, 164, 1839: 161, 199; Reid 1958a: 464; Rhumbler 1922: 305, 1927: 318; Richter 1918: 241; Rose, A. H. & Lindquist 1980: 61; Rozhkoff 1970: 144; Rudinsky & Daterman 1964a; Rupertsberger 1879: 231, 1880: 232; Saalas 1913a: 68, 84, 1949: 329, 343, 375, 1951: 13; Schedl 1981b: 99; Schimitschek 1955a: 39, 61; Schmidt 1881: 37; Schnaider 1954: 171; Schnaider & Sierpinski 1955: 60; Schneider-Orelli 1913: 61, 1947b: 157, 1947c: 94; Schwappach et al. 1929: 186; Schwerdtfeger 1944a: 184, 1957a: 190, 1963c: 449–451, 1981: 195; Sedlaczek 1921: 335, 1935a: 153; Shepherd 1966: 511; Simmel 1919: 34–36; Spessivtsev 1913a: 96; Stark 1926a: 335, 1931: 339–343, 1952: 366; Stark, R. W. 1982; Strohmeyer 1906b: 333, 1907b: 173; Taschenberg 1880: 233; Thomsen 1948: 804; Tomasevski 1953: 145; Tragardh 1914: 93, 1921e: 64, 1927c: 89, 1939b: 151, 231; Tragardh & Butovitsch 1935: 1–268; Tredl 1915b: 166; Tschorbadjiev 1929: 167; Tullgren 1916: 104; Vasechko 1971a, 1971b; Vite 1952a: 102; Wachtl 1876a: 455, 1901: 379, 382; Weber, H. 1926: 572; Weber, R. & Schurig 1981; Wichmann 1909a: 149, 1925: 129–132, 1926: 52, 1927b: 350; Winter, K. 1980; Wolff 1927: 76; Wolff & Krausse 1922: 90; Wong, H. R. & Melvin 1973; Wood, D. L. & Bushing 1963: 1072; Zinovjev 1957: 331, 1958: 385. (**ds**) Acatay 1943: 70; Acloque 1896; Ammann 1969a; Ammann & Knabl 1923; Andersch 1851; Angus 1964: 181; Anonymous 1928c: 202, 1982k; Arru, Covassi, & de Bellis 1966: 32; Audras & Schaefer 1957; Badoux 1921; Bain 1974: 15; Bakke 1960: 290; Barbey 1922b; Barthe 1896; Bau 1888; Baudisch 1899; Beaulne 1956; Becker, G. 1962a; Beckwith 1972a; Bedel 1888b: 404, 421; Beffa 1949; Bejer-Petersen & Jorum 1977: 22; Belousov 1916, 1917: 336; Bielz 1851, 1887; Bistrom & Vaisanen 1988: 42; Blanchere & Robert 1889; Blatchley & Leng 1916: 646; Bletchly 1962; Bletchly & Bevan 1963; Bletchly & White 1962a, 1962b; Borcea 1924; Brakman 1966b: 205; Brancsik 1871, 1906; Brandis 1890: 185; Bright 1971a: 126, 1976d: 120; Bright & Stark 1973: 72; Brundin 1934; Buck 1955b: 191; Budkov 1897; Buresh & Lazarov 1956; Butovitsch & Heqvist 1947; Calwer 1884, 1893; Carpelan 1944; Cecconi 1897, 1903; Chamberlin 1918a, 1925, 1939: 300, 1958: 126–127; Chapman 1961a, 1962c, 1963: 675; Chapuis & Candeze 1853; Charvat 1950; Cho 1957; Choo 1983: 61; Choo & Woo 1985: 164; Choo, Woo, & Kim 1981: 201; Choo, Woo, & Park 1983: 176, 1988; Chorbadzhievo 1924d, 1929; Chrystal 1937; Cockerell et al. 1907; Cooter 1970; Crotch 1863; Debatisse 1945; Dejean 1821, 1825, 1837; Drooz 1985: 371; Dyer 1963; Dyer & Chapman 1965; Dyer & Kinghorn 1961; Dyer & Wright 1967; Eder 1934; Eggers 1904; Eidmann 1965a, 1974b; Endrodi 1958a, 1958b; Ericson & Sandin 1893; Escalera 1919; Escherich 1923b: 88, 458, 624, 1929, 1932b; Esterberg 1928, 1959; Evans, D. 1983: 36; Evans, D., Lowe, & Hunt 1978; Everts 1900; Fall 1906: 202; Fauvel 1885; Favre 1890; Fleischer 1877b; Fleischer et al. 1923; Fockler & Borden 1972; Forster 1849: 439; Fowler 1891; Fricken 1889: 356; Fuchs 1904a, 1905a; Furniss, M. M. & Furniss 1972; Furniss, R. L. & Carolin 1977: 411; Gabler 1949b; Gail 1906; Gast et al. 1989: 385; Gaubil 1849: 127; Gaunitz 1928: 92; Gautreau 1974: 6; Gemminger & Harold 1872: 2682; Georgijevic 1959: 594; Geschwind 1918; Gobang 1855: 745; Gornostaev 1917; Gozis 1875: 80; Gradojevic 1933; Gredler 1866: 372, 1868; Grill 1895: 309; Grouzelle 1905; Grune 1979: 161;

Guse 1893; Gyllenhal 1827: 624; Gyorfi 1936: 527, 1941b; Hagedorn 1903a, 1910d: 114; Hamilton 1894b: 406; Hansen, V. 1939, 1956, 1964: 461; Heinemann 1908a; Heller 1881: 173; Henschel 1895a: 194; Henshaw 1895: 44; Herger 1985b: 93; Heyden 1876: 298, 1879: 140, 1881: 177, 1890: 132, 1893: 178, 1898: 77; Heyden, Reitter, & Weise 1883: 182, 1891: 674, 1906: 713; Hickin 1963; Holdhaus & Deubel 1910: 145, 199; Holmgren 1867: 113, 127; Holsten & Wolfe 1981; Horion 1949, 1951; Hubault 1923b; Ihssen 1939: 336; Jacentkovsky 1933: 270; Jamnicky 1960a; Janovsky & Tegshzhargal 1985: 413; Jansson 1935: 77; Jazentkovsky 1912: 292; Johnson 1961; Joly 1976; Judeich & Nitsche 1895: 539; Kadyrov 1989; Kailidis 1963, 1966a, 1966b: 55, 1985; Kailidis & Georgevits 1972; Kailidis & Markalas 1988; Kaltenbach 1874: 686; Kangas 1934a; Karpinski 1925: 16, 1926: 82, 1931: 28, 1933b: 29, 1948b: 230; Karpinski & Strawinski 1948: 155; Kaszab 1977: 66; Keen 1938: 145; Keler 1925b: 275; Kersten 1933: 74; Kestercanek 1881a: 12; Kiefer et al. 1942: 529; Kinghorn & Dyer 1960; Klefbeck & Sjoberg 1960: 232; Kleine 1912a: 128, 162, 262, 265, 268, 1913a: 36, 1913b: 169, 1914b: 248, 250, 261, 400, 1934a: 175; Kloft & Hinks 1945: 218; Knotek 1892a: 38, 1894a: 559; Ko 1969: 228; Koltze 1901: 154; Kono 1938b: 65; Kono & Tamanuki 1939: 94; Kontkanen 1932: 61; Koppen 1882: 237, 261; Koschitsky 1900: 84; Kraatz 1869: 60; Krivolutskaya 1956: 833, 1960, 1965: 239, 1973: 140, 1983; Krol 1877: 34; Kurenzov 1934a: 50, 1935a: 36, 1935c: 188, 1936a: 111, 1936b: 351, 1957b: 18, 1967; Kurenzov & Kononov 1961: 595, 600; Kurir 1947c: 7; Kusch 1967; Lacordaire 1866: 377; Langhoffer 1915c: 158; Larroche & Torossian 1971; Leclercq 1971; Leigel 1886: 43; Lekander 1955b: 18; Leng 1918: 211; Lentz 1857: 138; Li, Dang, & Shi 1977: 70; Liese 1950: 140; Lindberg & Saris 1952: 59; Lindemann 1884b: 264; Lindquist, O. H. & Syme 1981: 110; Lokaj 1868: 64; Lomnicki 1886a, 1913b: 148; Loos 1913: 406; Lozovoi 1961: 91–113, 1962; Lucht 1987: 280; Lunardoni & Leonardi 1889: 486; Lundberg 1958: 232, 1974: 92, 1979: 31; Lundblad 1950c: 115; MacKay 1948: 93; Mandl 1931: 25; Marchant & Borden 1976; Marcu 1926c: 64, 1928: 327–336; Matthews & Fowler 1883: 42; McBride & Kinghorn 1960; Michalski 1957: 164; Miller 1868: 27; Mirzoian 1950: 139; Morgan, A. V. & Morgan 1980: 1110; Munster 1922a: 155, 1928: 291; Murayama 1929b: 2, 1930a: 2, 1930b: 13, 1937a: 2, 1937b: 374, 1948: 6, 1954b: 201; Negru 1966b: 401, 1968a: 456; Nijholt 1973b, 1978a; Notman 1920: 184; Novak, P. 1952: 416; Nunberg 1927a: 213, 1928b: 88, 107, 1954: 44; Nuorteva 1956b: 168, 1971: 67; Nusslin 1898: 283; Orest 1926c: 64; Ormerod 1899: 92; Ortzen 1886: 280; Pacher 1853: 49, 1865: 151; Palm 1946: 122, 1948a: 91, 1959: 60, 214; Palmen 1944: 60; Parfentev 1951: 429; Patterson & Hatch 1945: 152; Peyerimhoff 1919: 257, 1933b: 361, 1934: 52; Pfeffer 1928b: 3, 1931b: 74, 1935: 159, 1947d: 129, 1947e: 1, 1950b: 73, 1989a: 54, 1989b: 130; Pittioni 1943: 176; Pjatnitskii 1930a: 165; Platonoff 1940: 11, 1942: 63, 1943: 141; Pomerantzev 1907b: 494, X; Poppius 1900: 108; Postner 1974: 473; Pupavkin & Chernenko 1979; Rapp 1934: 737; Ratzeburg 1837: 132, 164, 1839: 161, 199; Redtenbacher 1858: 830, 1874: 383; Reitter 1869a: 20, 1869b: 155, 1894a: 92, 1916: 291; Richmond & Radcliffe 1961; Roubal 1928: 454, 1941: 270; Rozhkoff 1970: 144; Rudnev 1965b; Ruppel 1967: 97; Rye 1866a: 198, 1866b: 64, 1867: 250, 1890: 270; Saalas 1913a: 68, 84, 1917a: 18, 1931: 70; Sahlberg 1900: 105; Sainte-Claire 1932: 53; Sainte-Claire & Mequignon 1938: 448; Schaschl 1854: 133; Schaufuss 1915: 1234; Schaum 1859: 95, 1862: 101; Schedl 1959h: 100, 1964f, 1978e: 38, 1981a: 17, 1981b: 99; Schilsky 1909: 189; Schimitschek 1938b: 114; Seidl 1876: 4; Schwerdtfeger 1981: 195; Seidlitz 1872: 392, 1891a: 568, 1891b: 614; Sharp 1865: 52; Sharp & Fowler 1893: 34; Shiraki 1952; Siebke 1875: 283; Sierpinski 1954: 63–67, 1966: 58; Sinreich 1958: 196–198; Skrzypczynska & Krol 1974; Smith, G. J. & Melvin 1974a, 1974b; Smith, J. B. 1910: 402; Snow 1883: 44, 1907: 188; Sokanovskii 1936: 74, 1960; Sparre-Schneider 1889: 60; Spessivtsev 1922: 474–475; Stark 1926a: 335, 1926b: 103, 1926j: 126, 1931a: 26, 1931d: 547, 1952: 336; Stein 1868: 114; Stein & Weise 1877: 165; Stierlin 1898: 448; Stierlin & Gautard 1871: 292, 363, 1906: 206; Still, Tidsbury, & Melvin 1974a: 15; Strand 1946: 601; Strand & Hanssen 1935: 70; Sturm 1843: 230; Susut & Melvin 1974; Swaine 1909: 148, 1913: 89; Thomson 1859: 146, 1865: 358, 1868: 219; Tomasevski 1953: 145–147; Tragardh 1914: 93, 1939b: 151, 231; Tredl 1907: 19; Tschorbadjiev 1929: 167; Tuovinen 1961: 1–17; Villa & Villa 1833: 26; Vite 1953: 41; Wachtl 1870: 259, 1876a: 455; Wanka 1915: 213; Wegelius 1960: 106; Welch, R. C. 1968b: 19; Werner & Holsten 1984; Westhoff 1882: 240; Wichmann 1924: 15, 1927a: 68, 1955a: 92; Wickham 1896a: 309; Wiepken 1883: 89; Wilke 1864: 373; Winter, T. G. 1983: 28; Wiren 1945: 43; Wolff 1927: 76; Wood, S. L. 1948: 38, 1972a: 423, 1982b: 751; Yanovskii 1974, 1977a, 1989: 64; Yanovskii & Dmitrienko 1983; Yanovskii & Tegshzhargal 1985: 413; Yin, Huang, & Li 1984: 183; Zetterstedt 1840: 194; Zinovjev 1955: 187; Zoufal 1920: 21. (**tx**) Acloque 1896; Alkan 1946; Altman 1844; Bach 1854, 1864; Bakke 1960: 295; Balachowsky 1949a: 199; Balfour 1962; Barbey 1901: 10, 28, 112; Beckwith 1972a, 1972b; Bedel 1888b: 404, 421; Beffa 1949; Bejer-Petersen 1957; Benoit 1985: 272; Bertolini 1872; Blanchere & Robert 1881; Blandford 1890; Blatchley & Leng 1916: 646; Bletchly & White 1962; Brancsik 1871; Bright 1976d: 120; Bright & Stark 1973: 159; Calwer 1858; Ceballos 1945;

Chamberlin 1918: 38, 1939: 300, 1958: 126–127; Chapuis & Candeze 1853; Chararas 1961c: 109, 1962c: 308; Charvat 1950; Choo 1983: 61; Chorbadzhievo 1924d; Dejean 1821, 1825; Dombrowsky 1887; Duffy 1953; Dyer & Wright 1967: 28; Eggers 1910f: 560–561, 1933f: 2, 52, 1933g: 18, 1939c: 121–122, 1940g: 38–39; Eichhoff 1864b: 37, 1864c: 382, 1864d: 421, 1872c: 137, 1876a: 378–379, 1878b: 417, 1881a: 54, 298–305, 1883a: 116, 144; Endrodi 1957a: 309, 1957b: 416; Erichson 1836: 60; Escherich 1923b: 458, 488, 624; Escherich & Escherich 1897; Evans, D. 1983: 36; Everts 1903: 771; Fauvel 1885, 1889; Ferrant 1911; Ferrari 1867a: 9, 1867b: 113; Fleischer 1905, 1927; Fockler & Borden 1972: 1843; Formanek 1907: 55; Fricken 1889: 356; Furniss, R. L. & Carolin 1977: 411; Gabler 1949b; Gillanders 1908; Girard 1873; Grune 1979: 160–161; Gyllenhal 1813: 366–367, 1827: 624; Hagedorn 1910a: 158; Hansen, V. 1956, 1964: 461; Hartig 1834: 13, 110; Hasek 1961: 5; Henry 1892: 10, 13; Henschel 1876: 35, 240, 1895a: 194; Heyden 1890: 132, 1893: 178; Hopkins 1914: 132, 1915c: 211; Houlbert 1922a:pl. 1, 13; Iablokoff-Khnzorian 1961: 105; Jacquelin du Val & Fairmaire 1868: 106; Johnson 1958b: 237; Joly 1976:fig. 139, 241; Judeich & Nitsche 1895: 539; Kalina 1970: 130; Karpinski & Strawinski 1948: 155; Keler 1921: 100–104; Kestercanek 1881b: 254; Knotek 1892: 38; Krivolutskaya 1956: 833, 1958: 166; Kuhnt 1913: 1061; Kurenzov 1941a: 182–188, 1948b: 101; Kusch 1967: 10; Lacordaire 1866: 378; Lekander 1959b: 31; Letzner 1891: 378; Leunis 1886: 182; Lindquist, O. H. & Syme 1981: 110; Louzil 1961: 10; Lucht 1987: 280; Lunardoni & Leonardi 1889: 486; Meixner 1937: 1215; Mori, Kuhara, & Suzuki 1989; Munro 1916b: 115, 1917: 123–158, 1920: 1–35, 1926: 1–27; Murayama 1930b: 13, 17–18, 1933a: 13, 1937b: 374, 1954b: 201; Negru 1966b: 401; Niisima 1909: 164, 166; Nordlinger 1848: 245, 1856: 30; Novak, V., Hrozinka, & Stary 1976: 34; Nunberg 1928a: 140, 1929c: 120, 1948: 1–30, 1954: 44; Nusslin 1911a: 59, 278, 378; Olivier 1795a: 18; Pardy 1974, 1977, 1983; Pfeffer 1937b: 19, 1941b: 2, 1941c: 4, 1947e: 1, 1955a: 166, 1989b: 130; Portevin 1935: 326; Postner 1974: 473; Puton 1867: 631; Quaschik 1953: 35; Questienne 1979: 114; Ratzeburg 1837: 132, 164, 1839: 161, 199–202; Redtenbacher 1849a: 359, 1849b: 27, 1858: 830, 1874: 383; Reitter 1894a: 92, 1913a: 74, 1916: 291; Rhumbler 1922: 305, 1927: 318; Richmond & Nijholt 1972; Rose, A. H. & Lindquist 1980: 61; Rudnev 1966: 122; Rupertsberger 1879: 231, 1880: 232; Saalas 1913a: 68, 84, 1949: 329, 343, 375; Sahlberg 1836: 152; Schedl 1934f: 1644, 1946a: 1, 1951c: 87, 1952f: 88, 1962p: 206, 1981a: 17, 1981b: 99; Scherb 1971; Schimitschek 1937c: 53, 1955c: 83; Schurig et al. 1982; Sedlaczek 1912: 307; Seidlitz 1872: 392, 1891a: 568, 1891b: 614; Shore 1985; Sokanovskii 1936: 73–74, 1954: 19, 1960: 677; Spessivtsev 1913a: 96, 1922a: 475, 1925a: 177, 1925b: 33, 1931: 54–55; Stark 1952: 366; Stierlin 1898: 448; Strand 1946: 172; Swaine 1909: 148, 1911a: 216–220, 1913: 89; Taschenberg 1880: 233; Thomas, J. B. 1957: 4, 1960, 1967; Thomson 1859: 146, 1865: 358, 1868: 219; Titus, Meikle, & Harrison 1985: 125; Tsai & Li 1959: 95; Wood, R. O. & Unger 1977: 5; Wood, S. L. 1957a: 337, 344, 346, 349, 1972a: 423, 1982b: 751; Wylie & Yule 1977; Yin, Huang, & Li 1984: 183; Zetterstedt 1840: 194. (**ms**) Bevan 1964b; Boocock 1959d; Borden & Bennett 1969; Borden, Brownlee, & Silverstein 1968; Borden et al. 1979; Brandt 1960: 136; Chapman & Kinghorn 1955; Chararas 1971a: 853; Crooke & Bevan 1960; Crooke, Bevan, & Davies 1961; Eichhoff 1864d: 421; Escherich 1932b; Fuchs 1911b; Gotz 1877; Hartig 1834: 110; Heinemann 1908a; Kalandra 1971: 105; Kestercanek 1881b: 254; Kinghorn 1957b: 213; Lindgren et al. 1982; McKay et al. 1982; Michalski 1959a: 291; Mori & Sasaki 1979; Mori et al. 1982, 1983; Nijholt 1979; Nijholt & Chapman 1968; Overend 1978; Redlich et al. 1983; Ruppel & Pass 1970: 23; Schurig et al. 1982; Schwappach 1924: 56; Sinreich 1962; Slessor et al. 1980; Sundfor 1979; Thalenhorst 1960: 606, 1972: 37; Weber, R. & Schurig 1981, 1984; White, J. D., Avery, & Carter 1982; Wright, R. H. 1966.

bivittata Kirby 1837: 192 (*Apate*). Lectotype ♀; Boreal America; BMNH, London, designated by Wood 1982b: 751. Synonymy: Eichhoff 1872c: 137, Wood 1957: 349.

References: (**ay**) Hopkins 1894g; Nunberg 1951: 263. (**bv**) Hosking & Knight 1975. (**cn**) Belyea 1948, 1952a: 333–334, 1952b; Blackman 1950; Chamberlin 1924, 1939: 300; Collins & Connola 1958; Connola et al. 1956: 1–36; Craighead 1924: 42; Currie 1905: 71; Doane et al. 1936; Drake 1921: 201; Dunn & Jago 1923: 88–94; Essig 1926: 519, 1958: 519; Felt 1901: 485, 1906: 369, 1924: 275, 1926: 249, 275, 1930a: 249, 275; Fisher, Thompson, & Webb 1954: 3–15; Hatch 1938: 194; Hopkins 1894b: 295, 1894g: 278, 1899b: 21, 1899c: 249, 1901b: 33, 1904a: 16; Hubbard 1897b: 28; Ishikura 1966; Keen 1938: 146; Mott 1954: 1; Packard 1890: 709, 720, 812, 823; Pierson 1927: 80, 120; Riley & Howard 1891: 435, 1895: 419; Schuder 1969: 76; Snyder 1923: 131, 1927: 8; Swaine 1918a: 85, 1924d: 9; Swaine & Craighead 1924: 1–27. (**ec**) Belyea 1948, 1952a, 1952b; Chamberlin 1939: 300; DeLeon 1934a; Felt 1906: 369; Hopkins 1901b: 33; Keen 1938: 146; Morley 1939: 244; Steinhaus 1946: 404; Swaine 1924d: 9; Thompson, W. R. & Simmonds 1964: 39, 1965: 128; Weiss & West 1920: 3. (**hb**) Baker, W. L. 1972: 268; Beal & Massey 1945: 107–108; Blackman 1950; Chittenden 1890; Doane et al. 1936; Drake 1921: 201; Essig 1926: 519, 1958: 519; Felt 1906:

369, 1926: 249, 275, 1930a: 249, 275; Gobeil 1936b, 1936c; Hopkins 1894g, 1899b: 21, 1899c: 249, 1901b: 33, 1904a: 16; Hubbard 1897b: 28; Keen 1938: 146; Kinney & Furniss 1943: 22–23, 1945: 22; Morley 1939: 244; Packard 1890: 709; Prebble & Graham 1957: 92; Pierson 1927: 80; Swaine 1918a: 85, 1924d: 9. (**ds**) Anonymous 1926c: 518; Baker, W. L. 1972: 268; Beal & Massey 1945: 107–108; Beaulne 1956; Bedard 1938a; Blackman 1950; Chamberlin 1925; Chittenden 1890; Currie 1905; Dodge 1938: 36–37; Eidmann 1935; Essig 1926: 519, 1958: 519; Felt 1926: 249, 275, 1930b: 249, 275; Frost 1912: 308; Gemminger & Harold 1872: 2682; Hamilton 1889: 158, 1894a: 35, 406; Harrington 1890: 189; Henshaw 1885: 148; Hopkins 1893a: 134, 1893b: 210; Hubbard & Schwarz 1878: 643; Ishikura 1966; Johnson 1958: 236; Keen 1929a: 27, 1938: 146; Kleine 1934a: 178; Lacordaire 1866: 378; LeConte 1883: 35c; Leng 1920: 339; Leonard 1928: 518; McComb et al. 1953: 4; Proctor 1946: 207; Provancher 1877: 567; Schwarz 1886: 41, 1888: 80, 1900: 537, 1905: 185, 1910: 185; Slosson 1895: 6; Snow 1907: 188; Swaine 1909: 148; Wood, S. L. 1951a: 128. (**tx**) Balachowsky 1949a: 199; Beal & Massey 1945: 107–108; Dodge 1938: 36–37; Eichhoff 1872c: 137, 1876a: 378–379, 1881a: 299; Ferrari 1867a: 10; Hopkins 1915c: 211; Hubbard 1897b: 28; Jacques 1951: 351; Keen 1929a: 27; Kirby 1837: 191–192; Lacordaire 1866: 378; LeConte 1857: 22, 1868: 158, 1876: 357; Mannerheim 1853: 236; Provancher 1877: 567; Schwarz 1886: 41; Swaine 1909: 148, 1911a: 220, 1917: 21, 1918a: 85; Wood, S. L. 1957a: 349. (**ms**) Hatch 1934: 194.

cavifrons Mannerheim 1843: 297 (*Bostrichus*). Syntypes ♂; Sitka Island, Alaska; MZU, Helsinki. Synonymy: Eichhoff 1881a: 299, Wood 1969: 114.

References: (**cn**) Boocock 1959d; Boyce 1929; Chamberlin 1924, 1939: 300; Doane et al. 1936; Fisher, Thompson, & Webb 1953, 1954b: 3–15; Graham & Richmond 1950: 2–4; Hatch 1938: 194; Hopping & Jenkins 1933: 1–14; Jannsen 1958: 10–14; Johnson, N. E. 1958b: 236; Keen 1938: 146; Mathers 1935: 14; McBride 1950: 46; McMullan 1956: 34; Prebble 1944: 50, 1954: 220; Swaine 1918a: 84. (**ec**) Chamberlin 1939: 300; Keen 1938: 146; Wichmann 1955a: 93. (**hb**) Chamberlin 1939: 300; DeLeon 1952; Doane et al. 1936; Keen 1938: 146; Prebble & Graham 1957: 3; Swaine 1918a: 84. (**ds**) Chamberlin 1925, 1939: 300; DeLeon 1952: 78; Hopping 1922; Keen 1929a: 27, 1938: 146; Kleine 1934a: 178; Leng 1920: 339; Melsheimer 1853: 87; Murayama 1957a: 37, 1957b: 584; Patterson & Hatch 1945: 152; Swaine 1909: 149; Van Dyke 1924: 26; Wichmann 1955a: 93. (**tx**) Balachowsky 1949a: 199; Chamberlin 1939: 300; Eichhoff 1872c: 137, 1876a: 378–379, 1878b: 417, 1881a: 299; Keen 1929a: 27; Leconte 1857: 22, 1868: 158, 1876: 357; Mannerheim 1843: 297 (reprint p. 125), 1852: 359, 385, 1853: 236; Murayama 1957b: 584; Swaine 1909: 149, 1918a: 84–85; Wood, S. L. 1957a: 349, 1969c: 114. (**ms**) Boocock 1959d; Hatch 1938: 194; Prebble 1944: 50.

vittiger Eichhoff 1881a: 298. Syntypes, sex?; California [USA]; Hamburg Museum, lost. Synonymy: Schwarz 1886: 41.

References: (**ds**) Henshaw 1895: 44; Leng 1920: 339; Schwarz 1886: 41; Swaine 1909: 149. (**tx**) Chamberlin 1939: 302; Eichhoff 1881a: 298–299; Schwarz 1886: 41; Swaine 1909: 149; Wood, S. L. 1957a: 349.

borealis Swaine 1917: 21. Lectotype ♀; Athabasca Landing, Alberta [Canada]; CNCI, Ottawa, designated by Bright 1967b: 679. Synonymy: Wood 1957a: 349.

References: (**cn**) Chamberlin 1939: 301; Doane et al. 1936; Johnson, N. E. 1958b: 236; Keen 1938: 147; Schuder 1969: 76; Swaine 1918a: 85. (**ec**) Batra 1963b: 217; Batra & Michie 1963: 471; Chamberlin 1939: 301; Keen 1938: 147. (**hb**) Chamberlin 1939: 301; Doane et al. 1936; Keen 1938: 147; Prebble & Graham 1957: 92; Swaine 1918a: 85. (**ds**) Chamberlin 1939: 301; Keen 1938: 147; Kleine 1934a: 178; Leng 1920: 339; Murayama 1957b: 584. (**tx**) Bright 1967b: 679; Chamberlin 1939: 301; Hoebeke 1978; Murayama 1957b: 584; de Ruette 1970: 114; Scuder 1969: 76; Swaine 1917: 21, 1918a: 85; Wood, S. L. 1957a: 349.

granulatum Eggers 1933f: 51. Holotype ♂; Siberien: Irkutsk; Eggers Collection, in NHMW, Wien. Synonymy: Schedl 1951c: 100, 1962: 206.

Notes: (3) Sokanovskii 1954: 19 (named an aberration as var. *nigrum*, no status).

References: (**hb**) Rudnev 1958: 310–313; Stark 1952: 370. (**ds**) Krivolutskaya 1983; Krogerus 1921a: 51; Pfeffer 1989b: 130; Stark 1952: 370; Yanovskii & Tegshzhargal 1984: 415. (**tx**) Eggers 1933a: 97, 1933f: 51; Michalski 1969b: 570; Pfeffer 1989b: 130; Schedl 1951c: 100, 1962p: 206, 1979c: 110; Sokanovskii 1954: 19; Stark 1952: 370.

meridionale Eggers 1940g: 38. Lectotype ♂; Kleinasien (Ayancik); USNM, Washington, designated by Anderson & Anderson 1971: 20. Synonymy: Schedl 1951c: 97.

References: (**cn**) Schimitschek 1938c: 2112, 1939d: 2112, 1944: 172, 1952c: 58. (**ec**) Schimitschek 1941a: 305. (**hb**) Schimitschek 1944: 172. (**tx**) Anderson, W. H. & Anderson 1971: 20; Eggers 1940g: 36, 38–39; Schedl 1951c: 87, 97.

***niponicum* Blandford** 1894d: 125. Syntypes 13, sex?; Miyanoshita and Oyayma, Japan; BMNH, London.

Distribution: Asia (Japan/ Korea/ Taiwan/ Sakhalin Island, E USSR).

Hosts: *Alnus hirsuta, Quercus acutissima, Q. aliena, Q. dentata, Ulmus* sp.

Notes: (1) Originally named as a var. of *quercus* Eichhoff. Eggers 1939: 121 (a good species). Murayama 1954: 168 (a synonym of *signatus* Fabricius).

References: (**cn**) Kurenzov 1935c: 187–188; Shiraki 1952. (**ec**) Kurenzov 1934a: 50, 1951e: 66. (**hb**) Krivolutskaya 1973: 140; Kurenzov 1935a: 36, 1948b: 124, 1951b: 18, 1951e: 66; Kurenzov & Kononov 1961: 600; Stark 1952: 365. (**ds**) Ko 1969: 288; Krivolutskaya 1965a: 238, 1973: 140; Krivolutskaya & Kupyanskaya 1970; Kurenzov 1934d: 50, 1935a: 36, 1935c: 187–188, 1936a: 111, 1936b: 350, 1938a: 60; Kurenzov & Kononov 1961: 595–600; Murayama 1936: 127; Shiraki 1952; Stark 1952: 365; Yanovskii 1974, 1977a; Yanovskii & Tegshzhargal 1985: 413. (**tx**) Blandford 1894d: 124–125; Eggers 1939c: 121–122; Krivolutskaya 1958: 166; Kurenzov 1941a: 183, 1948b: 124; Murayama 1954: 168; Niisima 1909: 164; Schedl 1934f: 1644, 1951c: 93; Stark 1952: 365.

***proximum* (Niisima)** 1909: 165 (*Xyloterus*). Syntypes 6, sex?; Jozankei, Japan; Nobuchi Collection, Ibaraki.

Figures: Tsai & Li 1959: 96, Yin, Huang, & Li 1984: 184.

Distribution: Asia (Japan/ Korea/ Sakhalin Island, Siberia in E USSR).

Hosts: *Picea koraiensis, P. microsperma.*

References: (**cn**) Inouye 1955; Inouye & Yamaguchi 1955a: 235; Kurenzov 1950a: 6; Yanagisawa 1952: 109. (**ec**) Banno, Mikata, & Kodama 1983: 445; Inouye & Yamaguchi 1955a, 1955b; Kurenzov 1934a: 50. (**hb**) Krivolutskaya 1956: 834, 1973: 140; Kurenzov 1935a: 36, 1948b: 110, 1950d: 211; Nishiguchi 1960: 64–73; Qui & Huo 1958: 267; Stark 1952: 362; Yanagisawa 1952: 103–116. (**ds**) Choo & Woo 1985: 164; Kleine 1913b: 169, 1914b: 260; Kono 1938a: 45–46, 1938b: 65, 69; Kono & Tamanuki 1939: 90, 94; Krivolutskaya 1956: 834, 1965: 238, 1973: 140, 1983; Kurenzov 1934a: 50, 1935a: 36, 1936a: 111, 1936b: 351, 1951: 185–186, 1963b: 115; Murayama 1936a: 127–128, 1937b: 370, 1949c: 101, 1953c: 152, 1954b: 168, 1955: 102, 1957b: 570; Pfeffer 1989b: 130; Stark 1952: 362; Yin, Huang, & Li 1984: 184. (**tx**) Hagedorn 1910a: 158; Krivolutskaya 1956: 834, 1958: 167; Kurenzov 1941a: 185, 1948b: 110; Murayama 1936a: 127–128, 1937b: 370, 1954b: 168, 1955: 102, 1957b: 570; Niisima 1909: 164–165; Pfeffer 1989b: 130; Schedl 1934f: 1644, 1951c: 87, 95; Stark 1952: 362; Tsai & Li 1959: 96; Yin, Huang, & Li 1984: 184.

***pulchellus* (Murayama)** 1957b: 585 (*Xyloterus*). Holotype ♂; Todoro, Aki County, Kochi pref., Japan; Murayama Collection in USNM, Washington.

Distribution: Asia (Japan).

Hosts: *Styrax japonicus.*

Notes: (1) This species was not seen by us; Nobuchi 1985c: 18 placed it in *Indocryphalus.*

References: (**tx**) Murayama 1957b: 577, 582, 585–586; Nobuchi 1985c: 18.

***retusum* (LeConte)** 1868a: 158 (*Xyloterus*). Holotype ♂; Canada; MCZ, Cambridge.

Figures: Kusch 1967: 10, Wood 1957a: 339–341.

Distribution: North America (Alaska/ Alberta, British Columbia, Manitoba, New Brunswick, Ontario, Quebec, Saskatchewan, Yukon in Canada/ Arizona, California, Colorado, Connecticut, Idaho, Michigan, Minnesota, Montana, Nevada, New Hampshire, New Mexico, New York, Oregon, Pennsylvania, South Dakota, Utah, Vermont, Washington, West Virginia, Wisconsin, Wyoming in USA).

Hosts: *Populus deltoides, P. grandidentata, P. tremuloides.*

References: (**ay**) Abrahamson 1969b; Abrahamson, Chu, & Norris 1967; Hopkins 1894g; Thomas, J. B. 1967. (**bv**) Meixner 1937: 1218. (**cn**) Blackman 1950; Chamberlin 1939: 298; Doane et al. 1936; Hewitt 1914: 501–518; Hodson 1951: 9; Holsten & Wolfe 1981; Hopkins 1894: 278; Ishikura 1966; Keen 1938: 147; Leach 1940b: 63; Lindquist, O. H. & Syme 1981: 110; Swaine 1913: 89, 1918a: 84; Wong, H. R. & Melvin 1973. (**ec**) Abrahamson 1969b: 1733; Abrahamson, Chu, & Norris 1967, 1970: 1107–1110; Chamberlin 1939: 298, 1958: 125–126; Davidson 1958; Hagedorn 1907c; Hinds 1972; Hinds & Davidson 1972; Keen 1938: 147; Leach 1940b: 63; Leach et al. 1940: 227–236; Roeper & French 1981; Slaby 1947: 377; Steinhaus 1946: 404; Verrall 1943: 143; Webb 1945: 63; Werner & Holsten 1984. (**hb**) Baker, W. L. 1972: 268; Blackman 1950; Bright 1976d: 119; Bright & Stark 1973: 72; Chamberlin 1939: 298, 1958: 125–126; Doane et al. 1936; Drooz 1985: 371; Gast et al. 1989: 384; Harrison 1959: 129; Holstein & Wolfe 1981; Hopkins 1894g; Hubbard 1897a: 429; Keen 1938: 147; Lengerken 1954: 312; Rose, A. H. & Lindquist 1982b; Swaine 1918a: 84; Wong, H. R. & Melvin 1973; Wood, S. L. 1982b: 750. (**ds**) Abrahamson, Chu, & Norris 1967, 1970: 1107–1110; Anonymous 1926c: 517; Baker, W. L. 1972: 268; Blackman 1950; Blatchley & Leng 1916: 645; Bright 1976d: 119; Bright & Stark 1973: 71; Chamberlin 1939: 298, 1958: 125–126; Dodge 1938: 14, 35–36; Drooz 1985: 371; Evans, D., Lowe, & Hunt 1978; Furniss, R. L. & Carolin 1977: 411; Gast et al. 1989: 384; Gemminger & Harold 1872: 2682; Hagedorn 1910d: 116; Henshaw 1882: 269, 1885: 148; Holsten & Wolfe 1981; Hopkins 1893a: 134,

1893b: 210; Hopping 1922: 128–134; Ishikura 1966; Keen 1929a: 27, 1938: 147; Kleine 1913b: 169, 1914b: 395, 1934a: 178; Kusch 1967; Leng 1920: 339; Leonard 1928: 517; Lindquist, O. H. & Syme 1981: 110; McComb et al. 1953: 4; Murayama 1957a: 36, 1957b: 585; Patterson & Hatch 1945: 152; Pfeffer 1989b: 132; Proctor 1946: 207; Scudder 1876: 83; Smith, G. S. 1930; Swaine 1909: 150, 1913: 89; Werner & Holsten 1984; Wood, S. L. 1948: 37, 1951a: 127, 1972a: 423, 1982b: 750. (**tx**) Benoit 1985: 272; Blatchley & Leng 1916: 645; Bright 1976d: 119; Chamberlin 1939: 298, 1958: 125–126; Dodge 1938: 14, 35–36; Eichhoff 1878b: 420; Hagedorn 1910a: 158; Keen 1929a: 27; Kusch 1967: 10; LeConte 1868a: 158, 1876: 357; Lindquist, O. H. & Syme 1981: 110; Meixner 1937: 1218; Murayama 1957b: 585; Scudder 1876: 83; Swaine 1909: 150, 1918a: 84–85; Thomas, J. B. 1960: 410, 1967; Titus, Meikle, & Harrison 1985: 125; Wood, S. L. 1957a: 345, 348, 1972a: 423, 1982b: 750.

***rufitarsis* (Kirby)** 1837: 193 (*Apate*). Lectotype ♂; Boreal America; BMNH, London, designated by Wood 1982b: 753.

Figures: Wood 1957a: 339–341.

Distribution: North America (Alberta, British Columbia, Manitoba, New Brunswick, Ontario, Yukon in Canada/ Arizona, California, Colorado, Idaho, Minnesota, Montana, Oregon, Utah, Washington in USA).

Hosts: *Pinus banksiana, P. contorta,* rarely in *P. jeffreyi, P. monticola, P. ponderosa, Picea engelmannii.*

Notes: (1) Swaine 1917: 22 (to *Trypodendron*).

References: (**ay**) Thomas, J. B. 1967. (**bv**) Prebble & Graham 1957: 92. (**cn**) Chamberlin 1939: 302, 1958: 127; Doane et al. 1936; Hatch 1938: 194; Johnson, N. E. 1958b: 236; Keen 1938: 146; Lindgren 1980a: 70; Lindquist, O. H. & Syme 1981: 110; Smith, G. J. & Melvin 1974b; Swaine 1918a: 85. (**ec**) Chamberlin 1939: 302; DeLeon 1934a; French, J. R. J. & Roeper 1972c; Keen 1938: 146; Roeper & French 1981. (**hb**) Bright & Stark 1973: 73; Chamberlin 1939: 302, 1958: 127; Doane et al. 1936; French, J. R. J & Roeper 1972c; Keen 1938: 146; Lindgren 1980a: 70; Prebble & Graham 1957: 92; Swaine 1918a: 85. (**ds**) Bright 1976d: 121; Bright & Stark 1973: 73; Chamberlin 1917: 356, 1939: 302, 1958: 127; Dodge 1938: 36–37; Drooz 1985: 371; Furniss, R. L. & Carolin 1977: 411; Gast et al. 1989: 385; Hamilton 1888: 158; Keen 1938: 146; Leng 1920: 339; Lindquist, O. H. & Syme 1981: 110; McComb et al. 1953: 4; Murayama 1957a: 36, 1957b: 585; Patterson & Hatch 1945: 152; Pfeffer 1989b: 132; Smith, G. J. & Melvin 1974b; Swaine 1909: 149; Wood, S. L. 1948: 40, 1951a: 128, 1972a: 423, 1982b: 753. (**tx**) Bright 1976d: 121; Chamberlin 1939: 302, 1958: 127; Dodge 1938: 36–37; Eichhoff 1878b: 417; Kirby 1837: 193; LeConte 1868: 177, 1876: 426; Lindquist, O. H. & Syme 1981: 110; Murayama 1957b: 585; Pfeffer 1989: 132; Swaine 1909: 149, 1917: 22, 1918a: 85; Thomas, J. B. 1960: 410, 1967; Titus, Meikle, & Harrison 1985: 125; Wood, S. L. 1951a: 128, 1957a: 346, 351, 1972a: 423, 1982b: 753. (**ms**) Hatch 1938: 194.

ponderosae Swaine 1917: 22. Lectotype ♀; Peachland, British Columbia [Canada]; CNCI, Ottawa, designated by Bright 1967b: 679. Synonymy: Wood 1957a: 351.

References: (**bv**) Prebble & Graham 1957: 92. (**cn**) Chamberlin 1939: 301; Doane et al. 1936; Hatch 1938: 194; Keen 1938: 147; Schuder 1969: 75; Swaine 1918a: 85–86. (**ec**) Bedard 1933a; Chamberlin 1918a, 1939: 301; Johnson 1958: 236; Keen 1938: 147. (**hb**) Chamberlin 1939: 301; Doane et al. 1936; Keen 1938: 147; Prebble & Graham 1957: 92; Swaine 1918a: 85–86. (**ds**) Chamberlin 1918a: 39, 1925, 1939: 301; Hopping 1922; Keen 1929a: 27, 1938: 147; Kleine 1934a: 178; Leng 1920: 339; Murayama 1957a: 37, 1957b: 584; Patterson & Hatch 1945: 152; Schuder 1969: 75; Smith, G. S. 1929. (**tx**) Bright 1967b: 679; Chamberlin 1939: 301; Hoebeke 1978; Keen 1929a: 27; Murayama 1957b: 584; de Ruette 1970: 114; Swaine 1917: 22, 1918a: 85–86; Wood, S. L. 1957a: 351. (**ms**) Hatch 1938: 194.

***scabricollis* (LeConte)** 1868a: 158 (*Xyloterus*). Holotype ♂; Washington, D.C. [USA]; MCZ, Cambridge.

Figures: Blackman 1922b:pl. 8, figs. 39–40, Wood 1957a: 339–341.

Distribution: North America (Arkansas, Maine, Minnesota, Mississippi, New Jersey, North Carolina, Pennsylvania, South Carolina, Virginia, West Virginia in USA).

Hosts: *Pinus banksiana, P. echinata, P. resinosa, P. taeda.*

References: (**bv**) Turnbow & Franklin 1980. (**cn**) Baker, W. L. 1972: 268; Blackman 1950; Chamberlin 1939: 299; Doane et al. 1936; Felt & Cockerell 1907: 217; Hopkins 1899c: 444; Hubbard 1897b: 29; Skinner 1905: 248; Smith, J. B. 1900: 362; Swaine 1918a: 83. (**ec**) Chamberlin 1939: 299; Felt 1906: 752; Hirschmann & Wisniewski 1982, 1983; Hurlbutt 1967; Steinhaus 1946: 404; Woodring & Moser 1970. (**hb**) Baker, W. L. 1972: 268; Batra 1963b: 224; Beal & Massey 1945: 107–108; Blackman 1922b: 79, 1950; Chamberlin 1939: 299; Doane et al. 1936; Drooz 1985: 371; Felt 1906: 752; Hopkins 1899c: 444; Hubbard 1897b: 29; Skinner 1905: 248; Swaine 1918a: 83; Wood, S. L. 1982b: 748. (**ds**) Anonymous 1926c: 517; Atkinson et al. 1991: 160; Beal & Massey 1945; Blackman 1922b: 79, 1950; Blatchley & Leng 1916: 646; Chamberlin 1925, 1939: 299; Cockerell et al. 1907; Drooz 1985: 371; Gemminger &

Harold 1872: 2682; Hagedorn 1910d: 116; Henshaw 1882: 269, 1885: 148; Hopkins 1893a: 134, 1893b: 210; Kirk 1969, 1970; Kleine 1913b: 169, 1934a: 178; Leng 1920: 339; Leonard 1928: 517; Murayama 1957b: 585; Pfeffer 1989b: 131; Provancher 1878: 13; Smith, J. B. 1900: 362, 1910: 402; Swaine 1909: 150; Turnbow & Franklin 1980; Wood, S. L. 1982b: 748. (**tx**) Beal & Massey 1945: 107–108; Blackman 1922b: 79; Blatchley & Leng 1916: 646; Chamberlin 1939: 299; Eichhoff 1878b: 49; Hagedorn 1918a: 158; Hubbard 1897b: 29; LeConte 1868a: 158, 1876: 357–358; Murayama 1957b: 585; Pfeffer 1989b: 131; Swaine 1909: 150, 1918a: 83–84; Wood, S. L. 1957a: 345–346, 1982b: 748.

***signatum* (Fabricius)** 1792: 363 (*Apate*). Holotype ♂; Germany; UZMC, Copenhagen.

Figures: Grune 1979: 160, Hasek 1961: 5, Nakane et al. 1963:pl. 192, Nuorteva 1962a: 44, Pfeffer 1989a:pl. 14, Yin, Huang, & Li 1984: 184.

Distribution: Asia (Japan/ Kuril Islands/ Turkey/ Kamchatka, Sakhalin Island, Siberia in E USSR), Europe (Austria/ Bulgaria/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Hungary/ Italy/ Norway/ Poland/ Scotland/ Spain/ Sweden/ W USSR/ Wales/ Yugoslavia).

Hosts: *Acer mono, A.* spp., *Alnus hirsuta, A. siberica, Betula* spp., *Fagus* spp., *Fraxinus* spp., *Populus* spp., *Tilia* spp., *Ulmus japonica, U. propinqua.*

References: (**ay**) Escherich 1923b: 462, 488, 627; Fisher 1954; Francke-Grosmann 1956b, 1959; Nunberg 1951: 263; Nusslin 1911a: 112. (**bv**) Grune 1979: 161; Hellen 1921; Paiva 1982a, 1982b; Paiva, Kiesel, & Vite 1983; Payne et al. 1983; Schurig et al. 1982, 1983; Weber, R. & Schurig 1984. (**cn**) Acatay 1943a: 68–69; Barbey 1925: 436, 553; Baryshman 1955; Becker 1950; Belousov 1917: 334–337; Blandford 1890, 1893c; Cotes 1893b; Eckstein 1926: 579; Escherich 1917: 97–115, 1923b: 462, 488, 627, 1936; Esterberg 1959; Falck 1916: 167; Greschke 1953: 461; Hasek 1961: 5; Hellen 1921; Hess & Beck 1914: 167; Inouye & Yamaguchi 1955a: 235; Jacquiot 1951a: 1; Judeich & Nitsche 1895: 539; Kamp 1954: 3; Kangas 1958d: 164; Kholodkovskii 1912: 322; Konig, E. 1957: 104; Kovacevic 1957: 69; Nusslin 1913: 259; Paiva 1982b; Palm 1951: 234; Reissig 1949: 131; Rhumbler 1922: 305, 1927: 318; Saalas 1919: 1–415, 1949: 329, 343, 378; Schimitschek 1937c: 53, 1944: 172, 1952c: 60, 1955a: 137, 1955c: 83; Schonherr & Wellenstein 1967; Schwerdtfeger 1944a: 184; Strohmeyer 1906b: 330; Taraschkewitsch 1934: 357; Wachtl 1901: 379, 382; Weber, T. 1965; Wolff & Krausse 1922: 90; Zwolfer 1949: 401. (**ec**) Apel 1983; Balazy & Michalski 1964b; Brammanis 1940; Carpelan 1944; Fisher 1954; Francke-Grosmann 1952a, 1956b, 1959; Inouye & Yamaguchi 1955a: 235; Inouye et al. 1955: 116; Kangas 1942b; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1980b, 1983; Kleine 1908c: 220; Krivosheina 1974; Lundberg 1984; Michalski & Ratajczak 1989; Nikitsky 1978; Nosek 1959a: 118; Novak, P. 1952: 416; Nuorteva 1956a: 17, 1961c: 119, 1968a, 1970, 1971: 69; Nuorteva & Laine 1968; Nusslin 1927: 318; Okolow 1963; Pfeffer 1923a: 331, 1943b: 181; Pfeffer & Prihoda 1950: 3; Rummukainen 1954: 8; Saalas 1930: 118, 1949: 329, 343, 478; Schimitschek 1941a: 313, 1955a: 137; Schwerdtfeger 1944a: 184; Sedlaczek 1915a: 127, 1935a: 162; Szczepanski 1960a: 407; Thompson, W. R. 1943: 118; Vite 1952a: 103; Wichmann 1955a: 95; Wisniewski 1979b, 1979c: 4. (**hb**) Acatay 1943a: 68; Apel 1983; Baeta Neves 1943a; Barbey 1925: 436, 553; Becker 1950; Blandford 1890; Cotes 1893a, 1893b; Dihm 1920; Dombrowsky 1887; Eckstein 1897, 1926: 579, 1928; Eggers 1917; Escherich 1923b: 4, 62, 488, 627; Falck 1916: 167; Fisher 1954; Fuchs 1904a; Gillanders 1908; Gornostaev 1916: 314; Groschke 1953c; Gyorfi 1936: 527, 1957; Hagedorn 1903a; Hergula 1939: 309; Hess & Beck 1914: 288; Inouye et al. 1955: 116; Jacquiot 1951a: 1; Judeich & Nitsche 1895: 539; Kangas 1940b; Karpinski 1933b: 29; Karpinski & Strawinski 1948: 155; Kharitonov 1924: 199–204; Kholodkovskii 1912: 322; Konig, E. 1957: 104; Kostin 1960: 133; Lengerken 1954: 318; Liese 1950: 142; Matouschek 1917: 214; Nakashima 1975: 9; Nosek 1959a: 118; Nunberg 1929: 108; Nuorteva 1962a, 1968a, 1970; Nusslin 1898: 283, 1913: 259, 1927: 318; Paiva, Kiesel, & Vite 1983; Palm 1951: 234; Pfeffer 1942a: 3; Pierce 1907: 291; Postner 1974: 472; Ratzeburg 1837: 164, 1839: 199; Rhumbler 1922: 305, 1927: 318; Saalas 1913a: 69, 84, 1949: 329, 343, 378; Schedl 1981b: 99; Schimitschek 1944: 172, 1955a: 137; Schwerdtfeger 1944a: 184, 1981: 196; Sedlaczek 1935a: 162; Simmel 1919a: 34–36; Spessivtsev 1913a: 97; Stark 1926a: 336, 1952: 364; Strohmeyer 1906b: 330; Thomsen 1948: 807; Tragardh 1939b: 158; Tredl 1915b: 164, 1917: 214; Vite 1952a: 103; Wachtl 1901: 379, 382; Wolff & Krausse 1922: 90. (**ds**) Acloque 1896; Alexander 1988; Allen 1965a: 24; Angus 1965a: 7; Audras & Schaefer 1957; Barthe 1896; Bedel 1888b: 404, 420; Bejer-Petersen & Jorum 1977: 23; Belousov 1916, 1917: 336; Bielz 1887; Borchert 1951; Brakman 1966b: 206; Brancsik 1906; Bucking 1932; Buresh & Lazarov 1956; Carpelan 1944; Cecconi 1897; Choo, Woo, & Park 1988; Cooter 1970; Cotes 1893a, 1893b; Debatisse 1945; Dejean 1821, 1825, 1837; Eckstein 1923; Eder 1934; Eggers 1904, 1917: 52; Endrodi 1958b; Escalera 1919; Escherich 1923b: 462, 488, 627, 1932b; Esterberg 1928, 1959; Feige 1918; Fricken 1889: 356; Fuchs 1904a, 1905a; Gaubil 1849: 127; Gornostaev 1917: 308–315; Grill 1895: 309; Grune 1979: 161; Gyorfi 1936: 527; Hagedorn 1903a, 1910d: 116;

Hansen, V. 1939, 1956, 1964: 462; Harde & Kostlin 1965: 267; Heller 1947; Heyden, Reitter, & Weise 1883: 182, 1891: 674, 1906: 713; Horion 1949, 1951; Jazentkovsky 1912: 292; Judeich & Nitsche 1895: 539; Kangas 1942b; Karpinski 1925: 216, 1926: 82, 1931: 28, 1933b: 29, 1948b: 230; Karpinski & Strawinski 1948: 155; Keler 1921: 100–104, 1925b: 275; Kersten 1933: 74; Klefbeck & Sjoberg 1960: 232; Kleine 1912a: 263, 268, 1913a: 36, 1913b: 169, 1914b: 250, 1934a: 178; Kloft & Hinks 1945: 218; Koch 1961: 118; Kovacevic 1924: 21–22, 1957: 69; Kozikowsky 1921: 180; Krogerus 1921: 57; Kurir 1947c: 26; Langhoffer 1915b: 158; Leclercq 1971; Liese 1950: 142; Lomnicki 1913b: 149; Lovendal 1890c: 211; Lucht 1987: 280; Lundberg 1974: 92; Mayne 1953: 310; Murayama 1953a: 13, 1954b: 169, 1955: 102, 1957b: 570; Nakane et al. 1963: 382; Negru 1966b: 401; Nessling 1924: 28; Novak, P. 1952: 416; Nunberg 1928b: 88, 107, 1954: 44; Nuorteva 1962: 44, 1971: 67; Nusslin 1898: 283; Palm 1948a: 91, 1959: 60, 214; Pfeffer 1931b: 74, 1936: 90, 1989a: 54, 1989b: 132; Pjatnitskii 1930a: 165; Pomerantzev 1907b: 494; Postner 1974:472; Ragusa 1924: 117; Rapp 1934: 737; Ratzeburg 1837: 164, 1839: 199; Reissig 1949: 131; Reitter 1894a: 92, 1916: 291; Roubal 1941: 270; Ruschka 1923: 201; Saalas 1913a: 69, 84, 1930: 118, 1931: 67; Sainte-Claire & Mequignon 1938: 448; Schaufuss 1915: 1234; Schedl 1980a: 17, 1981b: 99; Scheidt 1919: 165; Schilsky 1909: 189; Schiodte 1873: 104; Schneider & Leder 1977: 65; Schwerdtfeger 1981: 196; Seidlitz 1891a: 568, 1891b: 614; Stark 1926a: 336, 1926b: 103, 1926j: 126, 1927b: 89, 1931a: 26, 1931d: 547, 1952: 364; Stein & Weise 1877: 165; Stierlin 1898: 448; Stierlin & Gautard 1906: 206; Strand 1946: 602; Strand & Hanssen 1935: 70; Sturm 1826: 102; Tragardh 1939b: 158; Tredl 1907: 19, 1915: 164–169; Villa & Villa 1833: 26; Wanka 1908: 231; Westhoff 1882: 240; Wichmann 1955a: 95; Winter, T. G. 1983: 28; Yanovskii 1989: 64; Yanovskii & Dmitrienko 1983; Yanovskii & Tegshzhargal 1985: 415; Yin, Huang, & Li 1984: 184; Zinovjev 1955: 187; Zolk 1935: 614–640; Zoufal 1920: 21. (**tx**) Acloque 1896; Allen 1965a; Apel 1983; Balachowsky 1949a: 199; Bedel 1888b: 404, 420; Blandford 1890: 181–186; Dejean 1821, 1825; Dombrowsky 1887; Duffy 1953; Eggers 1929e: 41; Eichhoff 1876a: 378; Endrodi 1957b; Escherich 1923b: 462, 488, 627; Fabricius 1792: 363, 1801: 383; Fauvel 1889; Fleischer 1927; Formanek 1907: 56; Fricken 1889: 356; Gillanders 1908; Grune 1979: 160–161; Hagedorn 1904e, 1910a: 158; Hansen, V. 1956, 1964: 412; Hasek 1961: 5; Iablokoff-Khnzorian 1966: 89; Judeich & Nitsche 1895: 539; Karpinski & Strawinski 1948: 155; Keler 1921: 100–104; Kuhnt 1913: 1061; Letzner 1891: 378; Lovendal 1889b: 81, 1890c: 211, 1898: 194; Lucht 1987: 280; Murayama 1953a: 13, 1954b: 168–169, 1955: 102, 1957b: 570; Nakane 1963: 383; Nakane et al. 1963:pl. 192; Negru 1966b: 401; Nunberg 1954: 44; Nuorteva 1962a: 44; Nusslin 1911a: 112; Panzer 1795a: 283; Pfeffer 1932b: 19, 1942a: 3, 1955a: 166, 1989a:pl. 14; Portevin 1935: 326; Postner 1974: 472; Puton 1867: 631; Quaschik 1953: 35; Ratzeburg 1837: 164, 1839: 199; Reitter 1894a: 92, 1913a: 74, 1916: 291; Rhumbler 1922: 305, 1927: 318; Saalas 1913a: 69, 84, 1949: 329, 343, 378; Schedl 1934f: 1644, 1951c: 87, 90, 1952f: 88, 1979c: 228, 1980a: 17, 1981b: 99; Schimitschek 1937c: 53, 1955c: 83; Seidlitz 1891a: 568, 1891b: 614; Semenov 1902: 271; Spessivtsev 1913a: 97, 1922a: 475, 492, 1923: 214, 1925a: 177, 1925b: 35, 1931: 34–56; Stark 1952: 364; Stierlin 1898: 448; Yin, Huang, & Li 1984: 184. (**ms**) Escherich 1932b; Hellen 1921; Matouschek 1917: 214; Schurig et al. 1982; Tredl 1917: 214; Weber, R. & Schurig 1984.

quinquelineatum Adams 1817: 312 (*Bostrichus*). Syntypes, sex?; Caucasicam circa oppidum Georgiovsk; not given. Synonymy: Balachowsky 1949a: 199, Pfeffer 1955: 167.

References: (**ds**) Gemminger & Harold 1872: 2687; Lacordaire 1866: 378; Stein & Weise 1877: 165. (**tx**) Adams 1817: 312; Balachowsky 1949a: 199; Erichson 1836: 60; Ferrari 1867a: 10; Lacordaire 1866: 378; Pfeffer 1955: 167; Wood, S. L. 1957a: 337.

waringi Curtis 1840: 279 (*Bostrichus*). Holotype, sex?; Bristol, England; not located. Synonymy: Schedl 1951c: 90.

References: (**ds**) Rye 1867: 250. (**tx**) Curtis 1840: 279; Schedl 1951c: 90.

quercus Eichhoff 1864a: 381 (*Xyloterus*). Syntypes, sex?; Germany; Hamburg Museum, lost. Synonymy: Balachowsky 1949a: 199, Pfeffer 1955: 167.

References: (**cn**) Houba 1913: 253; Koppen 1882: 260. (**hb**) Altum 1881c: 309, 1889c; Barbey 1901: 28, 111; Bargmann 1906; Budkov 1897; Eckstein 1889; Eichhoff 1881a: 54, 296; Fisher 1936a; Furst 1888: 113; Fuss 1865: 412; Henschel 1895a: 194; Knotek 1894a: 559; Lunardoni & Leonardi 1889: 491; Munro 1926: 60; Niisima 1908b: 18; Wachtl 1876a: 456. (**ds**) Blanchere & Robert 1889; Blandford 1894c; Budkov 1897; Calwer 1884, 1893; Chrystal 1937; Fauvel 1885; Favre 1890; Fisher 1936a; Fowler 1891; Fuss 1865: 412; Gemminger & Harold 1872: 2682; Gozis 1875: 80; Henschel 1895a: 194; Hickin 1963; Kaltenbach 1874: 646; Knotek 1892a: 38, 1894a: 559; Koppen 1882: 260; Kraatz 1869: 60; Lacordaire 1866: 378; Lokaj 1868: 64; Lunardoni & Leonardi 1889: 491; Matthews & Fowler 1883: 42; Murayama 1936a: 127; Niisima 1908b: 18; Puton 1867: 631–634; Redtenbacher 1874: 383; Rye 1866: 93, 1867: 250; Schilsky 1909: 189; Seidlitz 1872: 393; Sharp & Fowler 1893: 39; Stein 1868: 114; Stein & Weise 1877: 165; Stierlin &

Gautard 1871: 292, 364; Wachtl 1876a: 456; Wichmann 1927a: 68; Winter, T. G. 1983: 28. (**tx**) Balachowsky 1949: 199; Barbey 1901: 28, 111; Bertolini 1872; Eichhoff 1864a: 381, 1865: 412, 1868d: 421, 1876a: 378–391, 1878b: 414, 1881a: 54, 296, 1883a: 116, 144; Fauvel 1885; Ferrant 1911; Ferrari 1867a: 9, 1867b: 113; Fuss 1865; Henschel 1895a: 194; Knotek 1892a: 38; Lacordaire 1866: 378; Letzner 1891: 378; Lovendal 1889b: 80, 1898; Lunardoni & Leonardi 1889: 491; Murayama 1936a: 127; Niisima 1909: 164; Redtenbacher 1874: 383; Seidlitz 1872: 393; Spessivtsev 1913: 97. (**ms**) Eichhoff 1868d: 421; Schwappach 1924: 59.

suturale Eggers 1933e: 52. Holotype ♂; Wladiwostok (USSR); IZL, Leningrad. Synonymy: Schedl 1951c: 93.

References: (**hb**) Kurenzov 1948b: 116; Stark 1952: 371. (**ds**) Krivolutskaya 1983; Stark 1952: 371. (**tx**) Eggers 1933e: 52; Kurenzov 1941a: 184, 1948b: 116; Michalski 1969b: 570; Schedl 1951c: 93; Sokanovskii 1954: 19, 1958: 39, 1960: 677; Stark 1952: 371.

obtusum Eggers 1939c: 121. Lectotype ♂; Japan (Karafuto, Nopporo); USNM, Washington, designated by Anderson & Anderson 1971: 22. Synonymy: Schedl 1951c: 87.

References: (**ds**) Murayama 1957b: 570. (**tx**) Anderson, W. H. & Anderson 1971: 22; Eggers 1939c: 121–122; Murayama 1954: 168, 1957b: 570; Schedl 1951c: 87, 93, 1979c: 176.

Genus *Indocryphalus* Eggers

INDOCRYPHALUS EGGERS 1939b: 6. Type-species: *Indocryphalus malaisei* Eggers = *Xyloterus intermedius* Sampson, original designation.

Dendrotrypum Schedl 1951c: 76. Type-species: *Xyloterus aceris* Niisima, subsequent designation by Browne 1970: 562. Synonymy: Browne 1970: 562.

References: (**tx**) Browne 1970: 562; Schedl 1951c: 76; Thomas 1960: 410; Wood, S. L. 1957a: 344.

Keys: Browne 1970: 562, Schedl 1951: 77.

References: (**tx**) Browne 1970: 562; Choo 1983: 64; Choo, Woo, & Nobuchi 1988b; Eggers 1939b: 6–7; Schedl 1963i: 62; Wood, S. L. 1986a: 78.

***aceris* (Niisima)** 1910a: 4 (*Xyloterus*). Syntypes, sex?; Sapporo, Japan; Nobuchi Collection, Ibaraki.

Figures: Thomas 1960: 411, 413 (larva).

Distribution: Asia (Japan, E USSR).

Hosts: *Acer babonerve, A. manshuricum, A. mono, A. pictum, A. pseudosieboldianum, A. tegmentosum, A. ukuruduense.*

References: (**ay**) Nobuchi 1969a: 59; Thomas, J. B. 1960: 410, 1967. (**cn**) Anonymous 1980g; Kurenzov 1935c: 189. (**ec**) Inouye et al. 1955: 112; Kurenzov 1934a: 51. (**hb**) Inouye et al. 1955: 112; Kurenzov 1935a: 37, 1948b: 124; Leist 1902: 25–26; Stark 1952: 361. (**ds**) Anonymous 1980g; Kleine 1934a: 178; Krivolutskaya 1983; Kurenzov 1934a: 57, 178, 1935a: 37, 1935c: 189, 1965; Murayama 1953a: 12, 1954b: 167, 1957b: 570, 578; Stark 1952: 361. (**tx**) Browne 1970: 562; Eggers 1939c: 123, 1941b: 225; Kurenzov 1941a: 181–182, 1948b: 124; MacLean & Giese 1967: 285; Murayama 1953a: 12, 1954b: 167, 1957b: 570, 578; Niisima 1910a: 4; Schedl 1934f: 1644, 1951c: 76–78, 82; Stark 1952: 361; Thomas, J. B. 1960: 411, 413, 1967; Wood, S. L. 1957a: 352.

***dainichiensis* (Murayama)** 1954: 191 (*Xyloterus*). Holotype ♀; Mt. Dainichi, Gifu pref.; Murayama Collection, USNM, Washington.

Distribution: Asia (Japan).

Hosts: *Aesculus turbinata.*

References: (**ds**) Murayama 1954b: 167, 191, 1957b: 570, 579. (**tx**) Murayama 1954b: 167, 191, 1957b: 570, 579.

***intermedius* (Sampson)** 1913: 445 (*Xyloterus*). Syntypes, sex?; Bashahr State, N.W. Himalayas, India; BMNH, London.

Distribution: Asia (Burma/ Bengal, Punjab in India/ Nepal).

Hosts: *Castinopsis hystrix, Quercus lamellosa, Symplocus theaefolia.*

References: (**cn**) Mathur & Singh 1961a: 84; Stebbing 1914: 602. (**ec**) Stebbing 1914: 602. (**hb**) Beeson 1922c: 499; Stebbing 1914: 602. (**ds**) Beeson 1922c: 499; Kleine 1934a: 178; Mathur & Singh 1961a: 84; Murayama 1957b: 585; Schedl 1975c: 383. (**tx**) Browne 1970: 562; Murayama 1957b: 585; Sampson 1913: 415, 445–446; Stebbing 1914: 602.

malaisei Eggers 1939b: 7. Holotype, sex?; Nordost-Birma (Kambaiti, 7000 fuss hoch); NHR, Stockholm. Synonymy: Browne 1970: 562.

References: (**tx**) Browne 1970: 562; Eggers 1939b: 7.

***machili* Wood** 1988c: 197. Holotype ♀; Ramgarh, Naini Tal, U.P., 7,000 ft; FRI, Dehra Dun.

Distribution: Asia (Bengal, Uttar Pradesh in India).

Hosts: *Machilus odoratissima*, uncommon in *Cinnamomum impressinervium.*

References: (**tx**) Wood, S. L. 1988c: 197.

***majus* (Eggers)** 1926b: 148 (*Trypodendron*). Holotype, sex?; Tomakomai, Japan; Nobuchi Collection, Ibaraki.

Distribution: Asia (Japan).

Notes: (1) Browne 1970: 562 (to *Indocryphalus*).

References: (**ds**) Murayama 1954b: 167, 1955: 102, 1957b: 570, 577. (**tx**) Browne 1970: 562; Eggers 1926b: 148, 1939c: 123; Murayama 1954b: 167, 1955: 102, 1957b: 570, 577; Schedl 1934f: 1644, 1951c: 44, 76–78.

***pubipennis* (Blandford)** 1894d: 125 (*Trypodendron*). Syntypes 4, sex?; Sapporo, Kiga, Miyanoshita, and Ichiuchi, Japan; BMNH, London.

Distribution: Asia (Japan/ Korea/ Kuril Islands/ Taiwan/ Sakhalin Island and E USSR).

Hosts: *Benzoin thunbergii*, *Cinnamomum japonicum*, *Cleyera japonica*, *Fagus crenata*, *Ficus* spp., *Hamamelis japonica*, *Lindera erythrocarpa*, *Machilus thunbergii*, *Phyllanthus flexuosus*, *Rhus trichocarpa*, *Zelkova serrata*.

References: (**cn**) Anonymous 1980g; Murayama 1954a: 21; Shiraki 1952. (**ec**) Banno, Mikata, & Kodama 1983: 445; Kurenzov 1934a: 58. (**hb**) Krivolutskaya 1973: 140; Stark 1952: 371. (**ds**) Anonymous 1980g; Blandford 1894c; Cho 1957; Choo 1983: 64; Choo & Woo 1985: 164; Hagedorn 1910d: 116; Kleine 1913b: 169, 1914b: 261, 1934a: 178; Ko 1969: 288; Krivolutskaya 1973: 140; Kurenzov 1934a: 58; Murayama 1929b: 2, 1930b: 14, 1931a: 39, 1937b: 375, 1949c: 101, 1950b: 1293, 1953a: 12, 1954a: 21, 1954b: 168, 1955: 102, 1957b: 570, 578; Nobuchi 1967: 24; Shiraki 1952; Stark 1952: 371. (**tx**) Blandford 1894d: 125; Browne 1970: 562; Choo 1983: 64; Eggers 1939c: 123; Hagedorn 1910a: 158; Murayama 1930b: 14, 18, 30, 1931a: 39–40, 1934c: 298, 1937b: 375, 1950b: 1293, 1953a: 12, 1954b: 168, 1955: 102, 1957b: 570, 578; Niisima 1909: 164, 166; Sampson 1913: 446; Schedl 1934f: 1644, 1951c: 76–77; Sokanovskii 1954: 19; Stark 1952: 371; Strohmeyer 1914: 32.

***sinensis* (Eggers)** 1941b: 225 (*Trypodendron*). Holotype ♀; China: Fukien (Kuatun, 2300 m); not given.

Distribution: Asia (Fujian in China).

Notes: (1) Schedl 1951c: 76 (to *Dendrotrypum*, = *Indocryphalus*).

References: (**tx**) Browne 1970: 562; Eggers 1941b: 225; Schedl 1951c: 76–78.

***sordidus* (Blandford)** 1894c: 577 (*Trypodendron*). Holotype ♀; Japan; BMNH, London.

Distribution: Asia (Japan).

References: (**ds**) Blandford 1894c; Hagedorn 1910d: 116; Kleine 1913b: 169; Murayama 1949c: 101, 1954b: 169, 1957b: 570, 577. (**tx**) Blandford 1894c: 577; Browne 1970: 562; Eggers 1939c: 123, 1941b: 225; Hagedorn 1910a: 158; Murayama 1950: 52, 1954b: 169, 1957b: 570, 577; Schedl 1934f: 1644, 1951e: 76–77, 80.

***tropicus* (Browne)** 1950b: 648 (*Trypodendron*). Holotype ♀; Malaya: Selangor, Kepong; BMNH, London.

Distribution: Asia (Malaya).

Hosts: *Castanopsis sumatrana*.

Notes: (1) Browne 1970: 562 (to *Indocryphalus*).

References: (**hb**) Browne 1961c: 81. (**ds**) Browne 1961c:81; Murayama 1957b: 585. (**tx**) Browne 1950b: 648, 1961c: 81, 1970: 562; Murayama 1957b: 585.

Genus *Xyloterinus* Swaine

XYLOTERINUS SWAINE 1918a: 44, 83. Type-species: *Bostrichus politus* Say, original designation.

References: (**ay**) Browne 1961d: 60; Thomas, J. B. 1960: 410. (**hb**) Wood, S. L. 1982b: 745, 1986a: 79. (**ds**) Wood, S. L. 1982b: 745, 1986a: 79. (**tx**) Arnett 1960: 1037, 1044, 1968: 1037, 1044; Beal & Massey 1945: 59, 106; Blackman 1922b: 75, 78; Chamberlin 1939: 285–286; Dodge 1938: 18; MacLean & Giese 1967; Swaine 1918a: 44, 83; Wood, S. L. 1957a: 344, 352, 1982b: 745–746, 1986a: 79.

***politus* (Say)** 1826: 256 (*Bostrichus*). Syntypes, sex?; Eastern United States [USA]; Say Collection, lost.

Figures: Blackman 1922b:pl. 8, fig. 42, Bright 1976d: 203, 211, Dillon & Dillon 1961: 196, 801, MacLean & Giese 1967: 288, 298, Wood 1957a: 339–341.

Distribution: North America (New Brunswick, Ontario, Quebec in Canada/ Connecticut, District of Columbia, Georgia, Illinois, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Virginia, West Virginia, Wisconsin in USA).

Hosts: *Acer* spp., *Alnus* spp., *Betula* spp., *Carya* spp., *Castanea* sp., *Fagus* sp., *Fraxinus* spp., *Quercus* spp., *Picea* sp., *Pinus* spp., *Tsuga* sp., *Ulmus* spp.

References: (**ay**) Abrahamson 1969b; Abrahamson & Norris 1966a: 877–880, 1966b; Hatch 1926; Hopkins 1894g; MacLean & Giese 1967; Thomas, J. B. 1960: 410, 1967. (**bv**) Haack, R. A., Benjamin, & Haack 1983; Hosking & Knight 1975. (**cn**) Anonymous 1950; Baker, W. L. 1972: 267; Blackman 1950; Browne 1968b: 721; Chamberlin 1939: 286; Connola et al. 1956: 1–36; Doane et al. 1936; Drake 1921: 201, 205; Felt 1901: 516–517, 1905: 292–293, 1906: 70, 1926: 247–248, 276, 1930a: 247–248, 276; Felt & Rankin 1932: 327; Fletcher 1886: 32; Friend 1943: 207–315; Hopkins 1894: 278, 1899c: 414; Hubbard 1897b: 28; MacLean & Giese 1967: 285, 1968: 185–189; Packard 1890: 287; Shigo 1966; Smith, J. B. 1900: 362; Swaine 1918a: 83; Wallace 1943a: 288. (**ec**) Abrahamson 1969b: 1733; Abrahamson & Norris 1966b, 1969; Baker, W. L. 1972: 267; Batra 1963b: 217; Chamberlin 1939: 286; Cote & Allen 1980; Currie 1955; Dorsey & Leach 1956: 222; Felt 1906: 292; Finnegan & Gagnon 1964: 2–3; Haack, R. A., Benjamin, & Haack 1983; Jewell 1956: 251; MacLean & Giese 1967, 1968; Matthews 1970; Nash 1951: 46; Peplinski & Merrill 1974; Skelly 1968: 1541; Stambaugh et al. 1955: 867; Steinhaus 1946: 404; Thompson, W. R. & Simmonds 1964: 40,1965; Wertz, Skelly, & Merrill 1971. (**hb**) Annila et al. 1972: 22; Baker, W. L. 1972: 267; Beal & Massey 1945: 105–107; Blackman 1922b: 78–79, 1950; Bright 1976d: 122; Browne 1968b: 721; Chamberlin 1939: 286; Chittenden 1890; Deyrup & Atkinson 1987a: 65; Dillon & Dillon 1961: 810; Doane et al. 1936; Drake 1921; Drooz 1985: 371; Felt 1906: 292, 1926: 247–248, 276, 1930a: 247–248, 276; Felt & Rankin 1932: 327;

Haack, R. A., Benjamin, & Haack 1983; Hopkins 1894g, 1899c: 444; Hubbard 1897b: 28; MacLean & Giese 1967; Packard 1890: 387; Pierce, W. D. 1907: 291; Schwarz 1891e: 77–78; Shigo 1966: 1; Swaine 1918a: 83. (**ds**) Anonymous 1926c: 517, 1964h, 1965g, 1976e; Beal & Massey 1945: 105–107; Beaulne 1941, 1956; Blackman 1922b: 78–79, 1950; Blatchley & Leng 1916: 645; Bright 1976d: 122; Browne 1968b: 721; Chamberlin 1925, 1939: 286; Chittenden 1890; Deyrup 1981b: 6; Deyrup & Atkinson 1987a: 65; Dodge 1938: 34–34; Drooz 1985: 371; Felt 1926: 247–248, 276, 1930a: 247–248, 276; Felt & Rankin 1932: 327; Gemminger & Harold 1872: 2682; Hagedorn 1910d: 115; Hamilton 1895a: 346, 378; Henshaw 1885: 148; Hoffmann 1942: 13; Hopkins 1893a: 134, 1893b: 210; Hubbard & Schwarz 1878a: 666; Kaston 1938: 240; Kleine 1913b: 169, 1934a: 178; Leng 1920: 339; Leonard 1928: 517; Melsheimer 1853: 87; Pechuman 1937: 13; Proctor 1946: 207; Schwarz 1890: 87, 1891e: 78; Smith, J. B. 1900: 362; Swaine 1909: 149; Wood, S. L. 1982b: 745. (**tx**) Beal & Massey 1945: 105–107; Benoit 1985: 284; Blackman 1922b: 78–79; Blatchley & Leng 1916: 645; Bright 1976d: 122, 203, 211; Chamberlin 1939: 286; Dillon & Dillon 1961: 196, 801, 810; Dodge 1938: 14, 34–35; Eichhoff 1878b: 420; Hagedorn 1910a: 158; Hubbard 1897b: 28; Jacques 1951: 352; LeConte 1868: 159, 1876: 357–358; MacLean & Giese 1967: 288, 298; Say 1826: 256; Schwarz 1889b: 149; Swaine 1909: 149, 1915: 83, 1918a: 83; Thomas, J. B. 1960, 1967; Titus, Meikle, & Harrison 1985: 129; Wood, S. L. 1957a: 352, 1982b: 745–746.

unicolor Eichhoff 1872c: 136 (*Xyloterus*). Syntypes ♀; Wisconsin [USA]; Hamburg Museum, lost. Synonymy: Hopkins 1893: 210, Wood 1957a: 353.

References: (**cn**) Smith, J. B. 1900: 362. (**ds**) Gemminger & Harold 1872: 2682; Hagedorn 1910d: 116; Henshaw 1885: 148; Hopkins 1893a: 134, 1893b: 210; Kleine 1913b: 169, 1914b: 401; Leng 1920: 339; Murayama 1957b: 587; Smith, J. B. 1900: 362; Swaine 1909: 149. (**tx**) Eichhoff 1872c: 136, 1878b: 419; Hagedorn 1910a: 158; LeConte 1876: 358; Murayama 1957b: 585; Niisima 1909: 166; Sampson 1913: 446; Swaine 1909: 149; Wood, S. L. 1957a: 352.

Tribe Xyleborini LeConte

Xylebori
References: Blandford 1898b: 191; LeConte 1876: 346, 358.

Xyleboridae
References: Eichhoff 1878b: 308; Hagedorn 1908: 377, 1910a: 24, 149, 1910d: 97.

Xyleborinae
References: Lucas 1920: 65; Nusslin 1911: 432.

Xyleborini
References: LeConte & Horn 1883: 516; Lucas 1920: 65; Reitter 1913a: 28; Wood, S. L. 1978a: 114, 1982b: 68, 1986a: 79–84; Yin, Huang, & Li 1984: 152.

Xyleborina
References: Balachowsky 1949a: 218; Nunberg 1954: 17.

Webbinae
References: Hopkins 1915c: 224.

Genus *Premnobius* Eichhoff

PREMNOBIUS EICHHOFF 1878b: 65, 404. Type-species: *Premnobius cavipennis* Eichhoff, monobasic.
Premnophilus Browne 1962g: 79. Type-species: *Xyleborus joveri* Schedl =*Premnobius quadrispinosus* Schedl, original designation. Synonymy: Schedl 1964j: 52.
References: (**tx**) Browne 1962g: 79; Schedl 1963j: 480, 1964j: 52.

Keys: Wood 1982b: 756 for American species.

Notes: (1) Although contrary to the letter of the Code, but consistent with the spirit of stability in nomenclature, the following departure from traditional taxonomic practice is followed here. In Schedl 1957d, the universally recognized genus *Premnobius* was made a junior synonym of *Xyleborus* thereby creating eight homonyms. Browne 1961d strenuously objected to that action and restored all of these junior homonyms to validity in *Premnobius*. At that time, 1957, the old code of nomenclature had been suspended, and the new code did not become effective until 1960. Because Schedl's action was not in the best interests of the science of nomenclature, and since it was strenuously objected to by Browne and was not supported or condoned by anyone except Schedl, the pre-1957 names are retained here, as was done by Browne 1961d, even though a strict interpretation of Code article 59d had a starting date of 1960.

References: (**ay**) Nobuchi 1968a: 63. (**bv**) Schedl 1960f: 10. (**hb**) Browne 1961d; Van Ryn-Tournel 1975; Wood, S. L. 1982b: 755, 1986a: 82. (**ds**) Browne 1961d: 50; Wood, S. L. 1982b: 755, 1986a: 82. (**tx**) Arnett 1960: 1044, 1968: 1044; Browne 1961d: 45–49, 1961e: 9; Eichhoff 1878b: 65, 404; Schedl 1934d: 85, 1957d: 15, 1964j: 50; Wood, S. L. 1982b: 755, 1986a: 82.

***ambitiosus* (Schaufuss)** 1897b: 109 (*Xylocleptes*). Holotype ♀; Gabun; Hamburg Museum, lost.
Distribution: Africa (Cameroon/ Canary Islands/ Congo/ Equatorial Guinea/ "French East Africa"/ Gabon/ Ghana/ Guinea/ Ivory Coast/ Liberia/ Nigeria/ Sierra Leone/ Tanzania/ Zaire), South America (Bolivia/ Brazil/ Colombia).
Hosts: *Albizzia* spp., *Celtis mildbraedii*, *C. soyaurii*, *Gmelina arborea*, *Gossypium hirsutum* (fruit), *Mangifera indica*.
References: (**cn**) Ghesquiere 1933a; Mayne & Donis 1951: 333. (**ec**) Mayne & Donis 1951: 333. (**hb**) Roberts 1969: 127; Thompson, G. H. 1960, 1963: 60. (**ds**) Browne 1970: 543, 1980c: 486; Ghesquiere 1933a: 32–35, 1933b: 783–785; Hagedorn 1910d: 62; Hargreaves 1937: 509; Kleine 1913b: 132, 1914b: 312; Nunberg 1952: 19, 1961a: 329, 1965b: 19, 1972b: 197; Schedl 1938d: 451, 1964f: 618, 1965e: 353, 1965g: 20, 1966a: 276, 1966c: 226, 1967d: 2, 1967e: 215, 1971e: 2, 1971g: 192, 1972e: 283, 1972g: 44, 1973d: 157, 1975h: 350; Thompson, G. H. 1960, 1963: 60; Wood, S. L. 1977a: 72, 1982b: 758. (**tx**) Eggers 1922b: 173, 1927a: 198, 1941d: 179; Hagedorn 1909: 733, 1910a: 98, 107; Nunberg 1952: 19, 1961a: 329; Schaufuss 1897b: 109–110; Schedl 1938d: 451, 1950d: 8, 18, 1953g: 242, 1954e: 50, 61–64, 1955d: 269, 1957d: 85, 1960i: 107, 1962j: 534, 1962k: 1098, 1966g: 20; Wood, S. L. 1982b: 758.
cavipennis spinosus Hagedorn 1908: 376. Syntypes ♀; Kinchassa (Waelbroek) Congo; IRSNB, Brussels. Synonymy: Eggers 1922b: 173.
References: (**tx**) Eggers 1920: 124, 1922b: 173; Hagedorn 1908: 376.
brasiliensis Nunberg 1958a: 490. Holotype ♀; Sao Paulo, Brazil; Escola Nacionale de Agronomia, Rio de Janeiro. Synonymy: Schedl 1960i: 107.
References: (**tx**) Nunberg 1958a: 490; Schedl 1960i: 107, 1962j: 534.

***amphicranoides* Schedl** 1939g: 172. Holotype ♀; Lake Vict. Nyanza: Ukerewe Island; Schedl Collection in NHMW, Wien.
Distribution: Africa (Angola/ Guinea/ Tanzania/ Zaire).
References: (**ds**) Nunberg 1952: 19, 1965b: 19. (**tx**) Nunberg 1952: 19; Schedl 1939g: 172–173, 1948c: 665, 1962j: 564.

***cavipennis* Eichhoff** 1878b: 404. Syntypes ♀; Africa meridionalis (Cap bonae spei), America meridionalis (Colombia); most lost with Hamburg Museum, 1 in IRSNB, Brussels.
Figures: Atkinson et al. 1986: 69, Bright 1972d: 95, Browne 1961d: 46, Pedrosa-Macedo & Schonherr 1985: 19.
Distribution: Africa (Angola/ Burundi/ Cameroon/ Congo/ Equatorial Guinea/ Ethiopia/ Gabon/ Ghana/ Guinea/ Ivory Coast/ Kenya/ Malawi/ Mauritania/ Mozambique/ Namibia/ Nigeria/ Ruanda/ Senegal/ Somalia/ South Africa/ Tanzania/ Uganda/

Urundi/ Zaire/ Zambia/ Zimbabwe), Antilles Islands (Cuba/ Guadeloupe/ Jamaica/ Puerto Rico/ Trinidad), Madagascar, North America (Honduras/ Chiapas, Veracruz, Yucatan in Mexico/ Florida in USA), South America (Brazil/ Cayenne/ Colombia/ Guayana/ Suriname/ Venezuela).

Hosts: One or more species of *Acacia*, *Acronocarpus*, *Albizzia*, *Allanblackia*, *Anthocaryon*, *Antiaris*, *Baphia*, *Beilschmiedia*, *Blighia*, *Brachystegia*, *Canarium*, *Cassia*, *Celtis*, *Chrysophyllum*, *Cleistopholis*, *Coelocaryon*, *Combretodendron*, *Cylicodiscus*, *Distemonanthus*, *Drypetes*, *Dumoria*, *Enantia*, *Eucalyptus*, *Fagara*, *Garcinia*, *Guarea*, *Hevea*, *Hymenostegia*, *Isolona*, *Jacaranda*, *Khaya*, *Klainedoxa*, *Lecaniodiscus*, *Lophira*, *Macaranga*, *Macrolobium*, *Maesopsis*, *Mangifera*, *Morus*, *Myrianthus*, *Napoleana*, *Nauclea*, *Ocotea*, *Pachuylobus*, *Pachyelasma*, *Panda*, *Piptadeniastrum*, *Plagioscyphus*, *Pterygota*, *Rhizophora*, *Sarcocephalus*, *Sterculia*, *Synsepalum*, *Terminalia*, *Tessmannia*, *Trichilia*, *Tridesmostemon*, *Triplochiton*, *Turraeanthus*, *Vitus*, *Xylopia*.

References: (**ay**) Entwistle 1963b; Schedl, W. 1962: 369–370; Van Ryn-Tournel 1972. (**bv**) Entwistle 1963b; Schedl 1960f: 91. (**cn**) Costa Lima 1956; Equihua-Martinez 1988; Ghesquiere 1933a: 35–37, 1933b: 783–785; Mayne & Donis 1951: 333; Wood, S. L. 1977a: 72. (**ec**) Mayne & Donis 1951: 333; Schedl 1962j: 537. (**hb**) Beaver 1976a: 20; Browne 1961d: 50, 1961e: 9; Costa Lima 1956; Deyrup & Atkinson 1961d, 1961e: 9; Entwistle 1963b; Loyttyniemi, Beaver, & Loyttyniemi 1984; Pollet 1977; Roberts 1969: 127; Schedl 1962j: 537; Wood, S. L. 1982b: 755. (**ds**) Atkinson & Equihua 1985b: 236, 1988: 100; Atkinson et al. 1986: 62; Baker, W. L. 1972: 271; Beaver 1976a: 20; Blackwelder 1947: 784; Bright 1968b: 1300, 1972d: 73, 1985c: 173; Browne 1961d: 45–51, 1961e: 9, 1963a: 237, 1975a: 759, 1975b: 394, 1984b: 288; Cachan 1957: 43–53; Costa Lima 1956: 289; Deyrup & Atkinson 1987a: 65; Estrada & Atkinson 1988: 206; Ferreira 1965: 1121; Ferrer 1942; Gardner 1957a: 31; Ghesquiere 1933a: 35–37; Hagedorn 1907a: 261, 1907b: 110, 1910d: 64; Jones, Roberts, & Baker 1959: 44–55; Kleine 1912a: 212, 1913b: 133, 1914b: 314, 318, 338, 342; Lee 1971: 31; Mayne & Donis 1962: 317; Nunberg 1952: 19, 1958a: 480, 1960a: 294, 1961a: 329, 1965b: 19, 1971: 58, 1972b: 197; Pedrosa-Macedo & Schonherr 1985: 19; Pollet 1977; Roberts 1969: 127; Schedl 1959p: 19, 1960f: 39, 1961d: 178, 1962h: 60, 1962j: 537, 1963a: 31, 1963f: 58, 1964e: 69, 1964f: 618, 1965e: 353, 1965g: 20, 1965h: 112, 1966a: 275–276, 1966c: 227, 1966f: 87, 1967e: 215, 1969d: 4–11, 1970e: 83, 1971e: 5, 1971f: 148, 1971g: 192, 1972e: 283, 1972g: 44, 1972k: 295, 1973d: 157, 1975h: 350, 1975k: 277, 1976a: 54, 1977b: 203, 1977c: 394, 1979b: 416, 1982: 279; Spahr 1981; Terra 1987: 20; Wood, S. L. 1957c: 402, 1957e: 1273, 1977a: 72, 1982b: 756. (**tx**) Atkinson et al. 1986: 69; Blandford 1898b: 192; Bright 1968b: 1298, 1300, 1972d: 73, 95, 1985c: 173; Browne 1961d: 46, 50; Costa Lima 1956; Eggers 1920: 124, 1922: 174, 1927a: 183–184, 1932c: 35, 1933b: 9, 1943c: 64; Eichhoff 1878b: 404–405; Hagedorn 1905a: 412, 1907a: 261, 1907b: 110, 1908: 375–377, 1909a, 1910a: 99, 1910b: 1; Hopkins 1914: 128, 132; Keler 1928: 28; Nunberg 1952: 19, 1958a: 480; Pedrosa-Macedo & Schonherr 1985: 19; Powell, W. 1980: 29; Schedl 1940a: 359, 1941d: 380, 1948c: 665, 1950d: 8, 18, 1950i: 147, 1951f: 40, 1952g: 51–52, 1952j: 2, 1953d: 69, 1953g: 242, 1954d: 871, 1955c: 30, 1955d: 269, 272, 1955f: 258–259, 1957b: 151, 1957d: 84–85, 1960i: 107, 1961e: 127, 1962g: 60, 1962j: 537, 1962k: 1099, 1962m: 62, 1965j: 50–52, 1977b: 203; Terra 1987: 20; Wood, S. L. 1957c: 402, 1957e: 1273, 1977b: 210, 1982b: 756–758.

industrius Sampson 1912: 218 (*Xyleborus*). Holotype ♀; Uganda; BMNH, London. Synonymy: Schedl 1962j: 538.
References: (**ds**) Kleine 1913b: 161, 1914b: 324. (**tx**) Sampson 1912: 248.

xylocranellus Schedl 1931c: 344 (*Xyleborus*). Holotype ♀; Brasilien; Schedl Collection in NHMW, Wien. Synonymy: Browne 1961d: 50.
References: (**hb**) Thompson, G. H. 1963: 61. (**ds**) Thompson, G. H. 1963: 61. (**tx**) Browne 1961d: 50; Sampson 1912: 248–249; Schedl 1931c: 344, 1954e: 57, 78, 1955d: 269, 1957d: 85, 1962j: 536, 1979c: 270.

bituberculatus Eggers 1932c: 35. Holotype ♀; Congostaat, Region de Sassa; MRCB, Tervuren. Synonymy: Schedl 1962j: 538.
References: (**ds**) Gardner 1957a; Nunberg 1952: 19, 1965b: 19. (**tx**) Eggers 1932c: 35; Nunberg 1952: 19; Schedl 1948c: 665, 1955c: 30, 1962j: 538, 1979c: 41.

latior Eggers 1933b: 9. Holotype ♀; Franz. Guayana (St. Jean du Maroni); MNHN, Paris. Synonymy: Wood 1977b: 210.
References: (**tx**) Eggers 1933b: 9; Schedl 1957d: 85; Wood, S. L. 1977b: 210.

***circumcinctus* Schedl** 1941d: 401. Holotype ♀; Uganda; Schedl Collection in NHMW, Wien.
Distribution: Africa (Uganda).
References: (**tx**) Schedl 1941d: 401, 1962j: 296, 1979c: 58.

***circumspinatus* Eggers** 1924: 107. Holotype ♀; Kindu, Congogebiet; MRCB, Tervuren.
Distribution: Africa (Cameroon/ Zaire).
Hosts: *Gossypium hirsutum*.
References: (**bv**) Schedl 1960f: 100. (**cn**) Ghesquiere 1933a: 33–35, 1933b: 783–785; Mayne & Donis 1951: 333. (**ec**) Mayne & Donis 1951: 333. (**ds**) Ghesquiere 1933a; Schedl 1960f: 40, 1962j: 523. (**tx**) Eggers 1924: 107; Schedl 1957d: 84, 1962j: 523, 1979c: 58.

circumdentatus Schedl 1938h: 461 (*Xyleborus*).

Holotype ♀; Kamerun; Schedl Collection in NHMW, Wien. Synonymy: Schedl 1962j: 523.
References: (**ds**) Schedl 1966c: 227. (**tx**) Schedl 1938h: 461–462, 1957d: 108, 1962j: 523, 1979c: 58.

***corruptus* (Schedl)** 1962j: 564 (*Xyleborus*). Lectotype ♀; Congo Belge: Kasai, Ngombe; Schedl Collection in NHMW, Wien.
Distribution: Africa (Angola/ Zaire).
Notes: (1) Originally named as a subspecies of *adjunctus*.
References: (**ds**) Schedl 1959p: 19. (**tx**) Eggers 1927a: 198; Schedl 1962j: 564, 1979c: 12.

***corthyloides* Hagedorn** 1910b: 1. Holotype ♀; Kamerun; MNB, Berlin.
Distribution: Africa (Cameroon/ Ghana/ Ivory Coast).
Hosts: *Albizzia gummifera*, *Cassia siamea*, *Lophira alata*.
Notes: (1) Originally named as a subspecies of *cavipennis*. Eggers 1920: 124 (elevated to species rank).
References: (**hb**) Roberts 1969: 127. (**ds**) Hagedorn 1910d: 64; Kleine 1914b: 311; Schedl 1962j: 550; Thompson, G. H. 1963: 61. (**tx**) Eggers 1920: 124, 1932c: 36–37; Hagedorn 1910a: 99, 1910b: 1; Schedl 1954e: 50, 66, 1957d: 85, 1962j: 550, 1972q: 262.

binodosus Nunberg 1969a: 396. Holotype ♀; Bingerville; MRCB, Tervuren. Synonymy: Schedl 1972q: 262.
References: (**tx**) Nunberg 1969a: 396, 398; Schedl 1972q: 262.

ivoriensis Nunberg 1969a: 398. Holotype ♀; Bingerville; MRCB, Tervuren. Synonymy: Schedl 1972q: 262.
References: (**tx**) Nunberg 1969a: 398; Schedl 1972q: 262.

***declivis* Eggers** 1944b: 97. Holotype ♀; Africa, Capland; Staatl. Naturalien Coll.
Distribution: Africa (South Africa).
References: (**tx**) Browne 1961d: 50; Eggers 1944b: 97; Schedl 1957d: 85.

perdeclivis Schedl 1957d: 85 (*Xyleborus*). Holotype ♀; Africa, Capland; Staatl. Naturalien Coll., automatic.
Notes: Browne 1961d: 50 (an unneeded replacement name).
References: (**tx**) Browne 1961d: 50; Schedl 1957d: 85, 1962k: 555.

***familiaris* (Schedl)** 1965c: 72 (*Xyleborus*). Holotype ♀; Madagascar, Perinet; Schedl Collection in NHMW, Wien.
Distribution: Madagascar.
References: (**tx**) Schedl 1965c: 72, 1977b: 207, 1979c: 95.

***felix* (Schedl)** 1971g: 198 (*Xyleborus*). Holotype ♀; Guinea espanola, Alto Benito (Miko messeng); Inst. Espanol Ent., Madrid.
Distribution: Africa (Equatorial Guinea).
References: (**tx**) Schedl 1971g: 198.

***hystrix* (Schedl)** 1957d: 108 (*Xyleborus*). Holotype ♀; Congo Belge: Yangambi; MRCB, Tervuren.
Figures: Nunberg 1963b:pl. 17, figs. 2–5, Schedl 1962j: 526.
Distribution: Africa (Zaire).
Hosts: *Garcinia polyantha*.
References: (**hb**) Schedl 1962j: 523. (**ds**) Schedl 1962j: 523. (**tx**) Nunberg 1963b: 35, pl. 17, figs. 2–5; Schedl 1957d: 108, 1959p: 26, 1962j: 523, 526, 1979c: 120.

***longus* Eggers** 1932c: 36. Holotype ♀; Congostaat (Haut-Uele: Yebo Moto); MRCB, Tervuren.
Distribution: Africa (Ghana/ Tanzania/ Zaire).
Hosts: *Anthrocaryon micraster*, *Anthonotha macrophylla*, *Cassia siamea*, *Pachyelasma tessmanii*, *Paropsia schiebeniana*, *Pterocarpus soyauxii*.
References: (**hb**) Loyttyniemi, Beaver, & Loyttyniemi 1984. (**ds**) Beaver & Loyttyniemi 1985a: 71; Thompson, G. H. 1963: 61. (**tx**) Browne 1961d: 50; Eggers 1932c: 36; Schedl 1954e: 50, 56, 1957d: 85, 1960i: 112.

artelongus Schedl 1957d: 85 (*Xyleborus*). Holotype ♀; Congostaat (Haut-Uele: Yebo Moto); MRCB, Tervuren, automatic.
Notes: (3) Browne 1961d: 50 (an unneeded replacement name).
References: (**hb**) Schedl 1962j: 536. (**ds**) Schedl 1962j: 536, 1972e: 283, 1972k: 295. (**tx**) Browne 1961d: 50; Schedl 1957d: 85, 1962j: 536.

***marginatus* Eggers** 1932c: 37. Holotype ♀; Gabun (Lac Zonanghe); Eggers Collection, in NHMW, Wien.
Distribution: Africa (Cameroon/ Equatorial Guinea/ Fernando Poo/ Gabon/ Ghana/ Ivory Coast/ Zaire).
Hosts: *Canarium* sp., *Paropsia schiebeniana*.
References: (**tx**) Browne 1961d: 50; Eggers 1932c: 36–37; Schedl 1957d: 85, 1979c: 148–149.

marginatulus Schedl 1957d: 85 (*Xyleborus*). Holotype ♀; Gabun (Lac Zonanghe); Eggers Collection, in NHMW, Wien, automatic.
Notes: (3) Browne 1961d: 50 (an unneeded replacement name).
References: (**ds**) Schedl 1962j: 550, 1964e: 69, 1964j: 42, 1967e: 216, 1971e: 2, 1971g: 193. (**tx**) Browne 1961d: 50; Schedl 1957d: 85, 1962j: 550.

***minor* Eggers** 1927a: 183. Holotype ♀; Belg.-Congo (Haut-Uele: Iri); MRCB, Tervuren.
Distribution: Africa (Angola/ Ghana/ Ivory Coast/ Kenya/ Nigeria/ Togo/ Zaire).
Hosts: *Rauvolfia caffra*.
References: (**ds**) Browne 1973a: 280. (**tx**) Browne 1961d: 50; Eggers 1927a: 183; Schedl 1952g: 52, 1957d: 85.

perminor Schedl 1957d: 85 (*Xyleborus*). Holotype ♀; Belg.-Congo (Haut-Uele: Iri); MRCB, Tervuren, automatic.
Notes: (3) Browne 1961d: 50 (an unneeded replacement name).
References: (**ds**) Ferreira 1965: 1124; Schedl 1959p: 21, 1962j: 555, 1964j: 42, 1965e: 355, 1972e: 284. (**tx**) Browne 1961d: 50; Schedl 1957d: 85, 1959p: 21, 1962j: 555.

***mukunyae* (Schedl)** 1957d: 111 (*Xyleborus*). Holotype ♀; Congo Belge: Kivu, Hembe-Bitale; MRCB, Tervuren.
Figures: Nunberg 1963b:pl. 20, figs. 1–4, Schedl 1962j: 552.
Distribution: Africa (Ruanda/ Zaire).
Hosts: *Alchornea hirtella*, *Entandrophragma excelsum*, *Ficus* spp., *Garcinia punctata*, *Pachystela laurentii*, *Panda oleosas*, *Pentaclethra macrophylla*, *Turraeanthus africana*.
References: (**hb**) Schedl 1962j: 551. (**ds**) Schedl 1962j: 551. (**tx**) Browne 1961d: 50; Nunberg 1963b: 40, pl. 20; Schedl 1957d: 85, 111, 1962j: 551–552, 1979c: 160.

***nodulosus* Hagedorn** 1908: 376. Holotype ♀; Kinchassa (Waelbroek), Congo; IRSNB, Brussels.
Distribution: Africa (Cameroon/ Equatorial Guinea/ South Africa/ Tanzania/ Uganda/ Zaire/ Zambia/ Zimbabwe).
Hosts: *Allophyllus africanus*, *Arthrosamanea altissima*, *Cynometra alexandri*, *Discoglypremna caloneura*, *Fagra macrophylla*, *Garcinia polyantha*, *Microcos pinnatifida*, *Panda oleosa*, *Pentaclethra macrophylla*, *Ricinodendron heudelotii*, *Strombosia* spp., *Turraeanthus africana*.
References: (**hb**) Schedl 1962j: 553. (**ds**) Browne 1973a: 280, 1980b: 380; Hagedorn 1910d: 64; Kleine 1914b: 314; Schedl 1962j: 553, 1964f: 618, 1966c: 228, 1967e: 218, 1971g: 193, 1972k: 296; Spahr 1981. (**tx**) Browne 1961d: 50; Eggers 1922: 174, 1943c: 64; Hagedorn 1908: 376, 1910a: 99; Schedl 1957d: 85, 1960i: 112, 1962j: 553.

***orientalis* Eggers** 1932c: 36. Holotype ♀; Ost-Afrika (Usaramo); Eggers Collection, in NHMW, Wien.
Distribution: Africa (Tanzania).
References: (**tx**) Anderson, W. H. & Anderson 1971: 23; Eggers 1932c: 36; Schedl 1957d: 85, 1962j: 555, 1979c: 181.

***perspinidens* (Schedl)** 1957d: 107 (*Xyleborus*). Holotype ♀; Congo Belge: Yangambi; MRCB, Tervuren.
Figures: Nunberg 1963b:pl. 22.
Distribution: Africa (Zaire).
Hosts: *Napoleana imperialis*.
Notes: (1) Browne 1961d: 50 (to *Premnobius*).
References: (**ds**) Schedl 1962j: 558. (**tx**) Browne 1961d: 50; Nunberg 1963b: 44, pl. 22; Schedl 1957d: 85, 107, 1962j: 558, 1979c: 191.

***pseudohystrix* (Schedl)** 1959p: 26 (*Xyleborus*). Holotype ♀; Angola: Dundo; MRCB, Tervuren.
Distribution: Africa (Angola/ Cameroon).
References: (**ds**) Ferreira 1965: 1124; Schedl 1959p: 21, 26, 1964f: 6618, 1967e: 218. (**tx**) Schedl 1959p: 21, 26, 1962j: 528, 1979c: 201.

***quadridens* Eggers** 1927a: 183. Lectotype ♀; Ostafrika (S. Usagara); USNM, Washington, designated by Anderson & Anderson 1971: 27.
Distribution: Africa (Tanzania).
References: (**tx**) Anderson, W. H. & Anderson 1971: 27; Browne 1961d: 50; Eggers 1927a: 183–184; Schedl 1957d: 85, 1962j: 559, 1979c: 208.
quadridentatus Schedl 1957d: 85 (*Xyleborus*). Lectotype ♀; Ostafrika (S. Usagara); USNM, Washington, designated by Anderson & Anderson 1971: 27, automatic.
Notes: Browne 1961d: 50 (an unneeded replacement name).
References: (**tx**) Browne 1961d: 50; Schedl 1957d: 85.

***quadrispinosus* Schedl** 1938h: 461. Holotype ♀; Kongo; Schedl Collection in NHMW, Wien.
Figures: Schedl 1962j: 557.
Distribution: Africa (Ghana/ Ivory Coast/ Zaire).
Hosts: *Albizzia gummifera*, *Canthium dewevrei*, *Hevea brasiliensis*, *Hydrodendron gabunense*, *Macrolobium* sp., *Microcos coriacea*, *Musanga cercropioides*, *Oxystegma oxyphyllum*, *Parinari* sp., *Terminalia superba*, *Trichilia lanata*, *Tridesmostemon claessensii*, *Turraeanthus africana*.
References: (**tx**) Browne 1961d: 50; Schedl 1938h: 461, 1957d: 85, 107, 1960p: 112, 1963j: 481, 1979c: 208.
joveri Schedl 1951f: 41 (*Xyleborus*). Lectotype ♀; Cote d'Ivoire, Languededou; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 130. Synonymy: Schedl 1962j: 556.
References: (**ds**) Browne 1961c: 14; Schedl 1964e: 69. (**tx**) Browne 1961d: 50, 1962g: 79; Schedl 1951f: 41, 1954d: 872, 1962j: 556, 1963j: 480, 1979c: 130.
perquadrispinosus Schedl 1957d: 85 (*Xyleborus*). Holotype ♀; Kongo; Schedl Collection in NHMW, Wien, automatic.
Notes: (3) Browne 1961d: 50 (an unneeded replacement name).
References: (**hb**) Schedl 1962j: 556. (**ds**) Schedl 1962j: 556. (**tx**) Browne 1961d: 50; Schedl 1957d: 85, 1962j: 556–557.

***robustulus* (Schedl)** 1957d: 112 (*Xyleborus*). Holotype ♀; Congo Belge: Yangambi; MRCB, Tervuren.
Distribution: Africa (Zaire).
Hosts: *Antrocaryon micraster*, *Beilschmiedia corbisieri*, *Cantium dewevrei*, *Hevea brasiliensis*, *Parinari* sp., *Pterocarpus soyaurii*.
References: (**hb**) Schedl 1962j: 559. (**ds**) Schedl

1962j: 559, 1967e: 218. (**tx**) Browne 1961d: 50; Schedl 1957d: 112, 1962j: 559–560, 1979c: 212.

***sexnotatus* (Schedl)** 1970e: 95 (*Xyleborus*). Holotype ♀; Nied. Guayana. Para Dist.: Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil/ Suriname).
Notes: (3) An obvious introduction from Africa (near *hystrix*).
References: (**ds**) Schedl 1973d: 159. (**tx**) Schedl 1970e: 95–96, 1979c: 227.

***sexspinosus* Eggers** 1924: 107. Holotype ♀; Bukama and Tshikapa (Congostaat); MRCB, Tervuren.
Distribution: Africa (Congo/ Gabon/ Ghana/ Guinea/ Ivory Coast/ Nigeria/ Tanzania/ Togo/ Uganda/ Zaire/ Zambia).
Hosts: *Albizzia* spp., *Bussea occidentalis*, *Carapa procera*, *Casuarina* sp., *Celtis* spp., *Craterispermum* sp., *Entandrophragma angolense*, *Ficus* spp., *Macaranga* sp., *Macrolobium* sp., *Pterocarpus soyaurii*, *Sarcocephalus* sp.
Notes: (3) Schedl 1962k: 1103 (described male).
References: (**cn**) Ghesquiere 1933a: 33–36, 1933b: 777–783; Ishikura 1966; Mayne & Donis 1951: 333. (**ec**) Mayne & Donis 1951: 333. (**hb**) Beaver & Loyttyniemi 1985a: 72; Browne 1963a: 237; Loyttyniemi, Beaver, & Loyttyniemi 1984; Roberts 1969: 128; Schedl 1962j: 560. (**ds**) Beaver & Loyttyniemi 1985a: 72; Browne 1963a: 237; Ghesquiere 1933a; Ishikura 1966; Schedl 1964e: 69, 1960f: 40, 1962h: 61, 1962j: 560, 1966a: 276, 1972g: 284. (**tx**) Eggers 1924: 107; Schedl 1957d: 85, 1962h: 61, 1962j: 560, 1962k: 1103, 1979c: 227.

***spinifer* Eggers** 1927a: 182. Holotype ♀; Luebo, Congogebiet; USNM, Washington.
Distribution: Africa (Angola/ South Africa/ Zaire).
References: (**ds**) Schedl 1965e: 356, 1975k: 278, 1977c: 395, 1982: 279. (**tx**) Anderson, W. H. & Anderson 1971: 31; Browne 1961d: 50; Eggers 1927a: 182; Schedl 1957d: 85, 1979c: 235.

perspinifer Schedl 1957d: 85 (*Xyleborus*). Holotype ♀; Congogebiet; USNM, Washington, automatic.
Notes: (3) Browne 1961d: 50 (an unneeded replacement name).
References: (**tx**) Browne 1961d: 50; Schedl 1957d: 85, 1962j: 559.

Genus *Sampsonius* Eggers

SAMPSONIUS EGGERS 1935a: 157. Type-species: *Sampsonius sexdentatus* Eggers, original designation.
Keys: Wood 1982b: 759 for Central America, Nunberg 1963c: 105, Bright 1991c: 14.
Notes: (3) Eggers 1933b: 23 (used generic name as a nomen nudum). Species of this genus are domicile parasites of other Xyleborini.
References: (**hb**) Wood, S. L. 1982b: 758, 1986a: 82. (**ds**) Wood, S. L. 1982b: 758, 1986a: 82. (**tx**) Bright 1991c: 12; Eggers 1933b: 23, 1935a: 157–158; Nunberg 1963c: 105; Wood, S. L. 1982b: 758, 1986a: 82.

***alvarengai* Bright** 1991c: 15. Holotype ♀; Vera, M. Grosso, Brazil; CNCI, Ottawa.
Figures: Bright 1991c: 13 (declivity).
Distribution: South America (Brazil).
References: (**tx**) Bright 1991c: 15.

***buculus* Schedl** 1937d: 170. Holotype ♀; Nova Teutonia, Brasilien; Schedl Collection in NHMW, Wien.
Figures: Bright 1991c: 13 (declivity).
Distribution: South America (Brazil).
References: (**ds**) Blackwelder 1947: 780; Schedl 1973d: 163. (**tx**) Bright 1991c: 22; Schedl 1937d: 170, 1979c: 49.

***conifer* (Hagedorn)** 1905: 549 (*Xyleborus*). Holotype ♀; Riviere Lunier Guyanae; MNHN, Paris.
Figures: Bright 1991c: 13 (declivity).
Distribution: South America (Cayenne).
References: (**ds**) Blackwelder 1947: 780; Hagedorn 1910d: 100; Kleine 1913b: 160, 1914b: 339; Menier 1971: 20. (**tx**) Bright 1991c: 16; Eggers 1933b: 24, 1935a: 158; Hagedorn 1905 (1903b): 549, 1910a: 153.

***dampfi* Schedl** 1940a: 359. Lectotype ♀; Chiapas, Mexico; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 75.
Figures: Bright 1991c: 13, Nunberg 1963c: 102, Terra 1987: 23, Wood 1982b: 760.
Distribution: Antilles Islands (Trinidad), North America (Costa Rica/ Honduras/ Chiapas, Veracruz in Mexico/ Panama), South America (Brazil/ Cayenne/ Colombia/ Venezuela).
Hosts: *Ochroma* sp., *Qualea wittrockii*, *Theobroma cacao*, *Vismia* sp.
Notes: (3) This is a domicile parasite of *Dryocoetoides capucinus*.
References: (**hb**) Beaver 1976a: 21; Wood, S. L. 1982b: 761. (**ds**) Beaver 1976a: 21; Blackwelder 1947: 780; Ferrer 1942; Pedrosa-Macedo & Schonherr 1985: 20; Schedl 1963f: 63, 1966f: 87, 1972g: 46, 1973d: 156, 1976a: 55; Terra 1987: 20; Wood, S. L. 1982b: 761. (**tx**) Bright 1991c: 24; Pedrosa-Macedo & Schonherr 1985: 20; Schedl 1940a: 359, 1951m: 71–73, 1969f: 554, 1979c: 75; Terra 1987: 20, 23; Wood, S. L. 1982b: 761.

costaricensis Nunberg 1963c: 104. Lectotype ♀; Finca La Lola, Limon, Costa Rica; University of Wisconsin Collection, Madison, designated by Wood 1982b: 761. Synonymy: Schedl 1969f: 554.
References: (**tx**) Nunberg 1963c: 102, 104; Schedl 1969f: 554; Wood, S. L. 1982b: 761.

***detractus* Wood** 1974a: 31. Holotype ♀; Madden Forest, Canal Zone, Panama; Wood Collection.
Figures: Bright 1991c: 13, Wood 1982b: 760.
Distribution: North America (Panama), South America (Brazil).

References: (**ds**) Bright 1991c: 18; Wood, S. L. 1982b: 759. (**tx**) Bright 1991c: 18; Wood, S. L. 1974a: 31, 1982b: 759.

***expulsus* Wood** 1974a: 31. Holotype ♀; 8 km S Colonia (near Buenaventura), Valle de Cauca, Colombia; Wood Collection.
Distribution: South America (Colombia).
Hosts: *Pouteria* sp.
References: (**tx**) Bright 1991c: 18; Wood, S. L. 1974a: 31.

***mexicanus* Bright** 1991c: 21. Holotype ♀; 10 miles NW Sontecomapan, Veracruz, Mexico; CNCI, Ottawa.
Figures: Bright 1991c: 13 (declivity).
Distribution: North America (Veracruz in Mexico).
References: (**tx**) Bright 1991c: 21.

***obtusicornis* Schedl** 1976a: 78. Holotype ♀; Brasilien, Filtro; Schedl Collection in NHMW, Wien.
Figures: Bright 1991c: 13 (declivity).
Distribution: South America (Brazil).
References: (**tx**) Bright 1991c: 25; Schedl 1976a: 78.

***pennatus* Schedl** 1973d: 171. Holotype ♀; Brasilien, Guanabara, Represa Rio Grande; MZUSP, Sao Paulo.
Figures: Bright 1991c: 13 (declivity).
Distribution: South America (Brazil).
References: (**tx**) Bright 1991c: 20; Schedl 1973d: 171, 1979c: 187.

quadrispinosus Eggers 1935a: 158. Holotype ♀; Bolivien, Cochabamba; Eggers Collection, in NHMW, Wien.
Figures: Bright 1991c: 13 (declivity).
Distribution: South America (Bolivia).
References: (**ds**) Blackwelder 1947: 781. (**tx**) Bright 1991c: 21; Eggers 1935a: 158–159, 1979c: 208.

***reticulatus* Bright** 1972a: 1369. Holotype ♀; Dos Amates, Veracruz, Mexico; CNCI, Ottawa.
Figures: Bright 1972a: 1370, 1991c: 13 (antenna, declivity).
Distribution: North America (Veracruz in Mexico).
References: (**ds**) Wood, S. L. 1982b: 760. (**tx**) Bright 1972a: 1369–1370, 1991c: 19; McNamara 1977: 199; Wood, S. L. 1982b: 760.

***sexdentatus* Eggers** 1933b: 23. Holotype ♀; French Guiana (Gourdonville); MNHN, Paris.
Figures: Bright 1991c: 13 (declivity).
Distribution: South America (Cayenne).
References: (**ds**) Blackwelder 1947: 781. (**tx**) Bright 1991c: 17; Eggers 1933b: 23–24, 1935a: 158.

***sulcatus* Bright** 1981c: 163. Holotype ♀; Trinidad; CNCI, Ottawa.
Figures: Bright 1991c: 13 (declivity).
Distribution: Antilles Islands (Trinidad). Apparently in Peru (?).
References: (**tx**) Bright 1981c: 163, 1991c: 26.

***usurpatus* Wood** 1974a: 32. Holotype ♀; Turrialba, Cartago, Costa Rica; Wood Collection.
Figures: Bright 1991c: 13, Wood 1982b: 760.
Distribution: North America (Costa Rica/ Panama).
References: (**hb**) Wood, S. L. 1982b: 761. (**ds**) Wood, S. L. 1982b: 761. (**tx**) Bright 1991c: 23; McNamara 1984: 759; Wood, S. L. 1974a: 32, 1982b: 761.

Genus *Dryocoetoides* Hopkins

DRYOCOETOIDES HOPKINS 1915b: 52. Type-species: *Dryocoetoides guatemalensis* Hopkins =*Xyleborus capucinus* Eichhoff, original designation.
Keys: Wood 1982b: 762 for Central American species.
References: (**tx**) Hopkins 1915b: 10, 52; Schedl 1952k: 161; Wood, S. L. 1974a: 28, 1982b: 762–764, 1986: 82.

***alter* (Eggers)** 1931a: 22 (*Xyleborus*). Holotype ♀; Brasil; USNM, Washington.
Figures: Pedrosa-Macedo & Schonherr 1985: 24.
Distribution: South America (Brazil).
Notes: (3) Schedl 1950i: 179 (described male).
References: (**ds**) Blackwelder 1947; Wood, S. L. 1982b: 762. (**tx**) Anderson, W. H. & Anderson 1971: 3; Eggers 1931a: 22, 1933b: 29; Pedrosa-Macedo & Schonherr 1985: 24; Schedl 1950i: 147, 179, 1979c: 16; Wood, S. L. 1982b: 762.

***asperulus* (Eggers)** 1931a: 21 (*Xyleborus*). Holotype ♀; Mexico; MNB, Berlin [Schedl 1979c: 28 gives NHMW, Wien].
Distribution: North America (Costa Rica/ "Mexico"), South America (Brazil).
References: (**ds**) Blackwelder 1947: 779; Ferrer 1942. (**tx**) Eggers 1931a: 21–22, 1933d: 29; Schedl 1940a: 361, 1979c: 28.
imitator Schedl 1976a: 75 (*Xyleborus*). Holotype ♀; Barueri, Sao Paulo, Brazil; Schedl Collection in NHMW, Wien. Synonymy: Wood 1992: (in press).
References: (**tx**) Schedl 1976a: 75; Wood, S. L. 1992:(in press).

***capucinus* (Eichhoff)** 1869b: 281 (*Xyleborus*). Holotype ♀; Guadeloupe Island; IRSNB, Brussels.
Figures: Atkinson & Equihua 1988: 93, Blandford 1898b:pl. 7, Nunberg 1963b:pl. 8, figs. 1–4.
Distribution: Antilles Islands (Guadeloupe/ Dominican Republic in Hispanola/ Jamaica), North America (Costa Rica/ Guatemala/ Michoacan, Nayarit, Veracruz in Mexico/ Panama), South America (Brazil/ Colombia/ Guyana/ Peru/ Venezuela).
Hosts: *Inga* sp., *Miconia* sp., etc.
References: (**hb**) Atkinson & Equihua 1985b: 236. (**ds**) Atkinson & Equihua 1985b: 236, 1986a: 421, 1988: 90; Blackwelder 1947: 779; Blandford 1898b: 203; Bright 1981c: 154, 1985c: 173; Gemminger & Harold 1872: 2685; Hagedorn 1903b:

546, 1910d: 99; Kleine 1913b: 160, 1914b: 337, 339, 371, 379; Wood, S. L. 1982b: 763. (**tx**) Atkinson & Equihua 1988: 93; Blandford 1897b: 203; Bright 1985c: 173; Eggers 1931a: 22, 1932d: 298, 1933b: 2, 1940a: 108, 1941a: 104; Eichhoff 1869b: 281, 1878b: 332; Hagedorn 1903b: 546, 1908, 1910a: 152; Nunberg 1963b: 21–22; Sampson 1912: 246; Wichmann 1914a: 413; Wood, S. L. 1966b: 31, 1972e: 196, 1973c: 187, 1974a: 28, 1982b: 763.

rufithorax Eichhoff 1869b: 281 (*Xyleborus*). Holotype ♀; Brazil; IRSNB, Brussels. Synonymy: Wood 1966b: 31.

References: (**ds**) Blackwelder 1947: 780; Gemminger & Harold 1872: 2686; Hagedorn 1903b: 546, 1910d: 110; Kleine 1913b: 162. (**tx**) Eggers 1923a: 181, 1931a: 22–23, 1932d: 298, 1933b: 2; Eichhoff 1869b: 280–281, 1875: 202, 1878b: 333; Hagedorn 1903b: 546, 1905a: 412, 1910a: 156; Nunberg 1959a: 437; Schedl 1940a: 361; Wood, S. L. 1973c: 187.

guatemalensis Hopkins 1915b: 52. Holotype ♀; Livingston, Guatemala; USNM, Washington. Synonymy: Wood 1966b: 31.

References: (**hb**) Kalshoven 1963. (**ds**) Blackwelder 1947: 779; Kalshoven 1963. (**tx**) Hopkins 1915b: 52; Nunberg 1963b: 21; Schedl 1952k: 161; Wood, S. L. 1966b: 31.

capucinoides Eggers 1941a: 104 (*Xyleborus*). Holotype ♀; Gourbeyre, Guadeloupe Island; USNM, Washington. Synonymy: Wood 1966b: 31.

References: (**tx**) Anderson, W. H. & Anderson 1971: 9; Eggers 1941a: 104, 108; Schedl 1979c: 52; Wood, S. L. 1966b: 31, 1972e: 196.

***caracicolai* Hopkins** 1915b: 53. Holotype ♀; Port of Spain, Trinidad; USNM, Washington.

Distribution: Antilles Islands (Trinidad).

References: (**ds**) Blackwelder 1947: 778. (**tx**) Hopkins 1915b: 52–53.

***cristatus* (Fabricius)** 1801: 389 (*Bostrichus*). Holotype ♀; type labeled Essiquibo [Guyana], published as America meridionali; UZMC, Copenhagen.

Figures: Schedl 1962j: 290.

Distribution: Africa (introduced: Angola/ Cameroon/ Congo/ Fernando Poo/ Gabon/ Ghana/ Ivory Coast/ Nigeria/ Sao Tome Island/ Zaire), Antilles Islands (Trinidad), South America (Brazil/ Cayenne/ Guyana/ Venezuela).

Hosts: *Alexa imperatricia*, *Brownia* sp., *Cassia fistula*, *Hymenostegia afzelii*, *Sterculia* sp., *Theobroma cacao*. Schedl 1962j: 289 lists others.

References: (**hb**) Beaver 1976a: 16. (**ds**) Beaver 1976a: 16; Browne 1965: 188; Gemminger & Harold 1872: 2690; Hagedorn 1910d: 52; Kleine 1913b: 127; Roberts 1969: 131; Schedl 1965e: 354, 1966c: 227, 1970f: 581, 1971g: 193, 1972e: 283, 1972g: 44, 1973d: 157, 1976a: 54, 1977d: 279, 1978c: 291. (**tx**) Fabricius 1801: 384, 389; Ferrari 1867a: 65; Hagedorn 1910a: 104; Schedl 1962j: 318, 1964k: 217; Wood, S. L. 1974a: 28.

solitarius Hagedorn 1905: 415 (*Xyleborus*). Holotype ♀; Camopi, Guyanae; MNHN, Paris (?). Synonymy: Wood 1974a: 28.

References: (**hb**) Browne 1963a: 244; Schedl 1961j: 289. (**ds**) Blackwelder 1947: 780; Browne 1963a: 244; Ghesquiere 1933a: 31, 36, 1933b: 781, 786; Kleine 1928: 307; Mayne & Donis 1962: 322; Nonveiller 1984: 42; Pedrosa-Macedo & Schonherr 1985: 40; Schedl 1962j: 289, 1964f: 618, 1966f: 90; Thompson, G. H. 1963: 73; Wichmann 1954: 521. (**tx**) Eggers 1922b: 174, 1927a: 199, 1933b: 2, 29, 35; Hagedorn 1904: 546, 1905: 415; Pedrosa-Macedo & Schonherr 1985: 40; Sampson 1912: 245–246; Schedl 1939j: 565, 1942a: 189, 1948f: 268–269, 1950i: 178, 1952k: 52, 161, 1953g: 243, 1954d: 873, 1954e: 54, 1957d: 84, 1962j: 289–293, 1979c: 232; Wood, S. L. 1974a: 28.

urichi Sampson 1912: 245 (*Xyleborus*). Holotype ♀; Trinidad; BMNH, London. Synonymy: Wood 1974a: 28.

References: (**ds**) Cotterell 1927: 98–112; Kleine 1913b: 163, 1914b: 344. (**tx**) Eggers 1922b: 174, 1927a: 199, 1933b: 2, 29; Sampson 1912: 245; Schedl 1962j: 289; Wood, S. L. 1974a: 28.

crenatus Eggers 1920: 42 (*Xyleborus*). Lectotype ♀; Kangu; USNM, Washington, designated by Anderson & Anderson 1971: 10. Synonymy: Wood 1974a: 28.

References: (**tx**) Anderson, W. H. & Anderson 1971: 10; Eggers 1920: 42–43, 1922b: 174, 1927a: 199, 1933b: 2, 29; Schedl 1962j: 289, 1979c: 68; Wood, S. L. 1974a: 28.

***flavus* (Fabricius)** 1801: 394 (*Hylesinus*). Syntypes 2♂, 2♀; types labeled Essiquibo [Guyana], published as America meridionali; UZMC, Copenhagen.

Distribution: South America (Brazil/ Guyana/ Venezuela).

Hosts: *Qualea ingens*, *Theobroma cacao*, *Xylopia sericea*.

Notes: (1) Wood 1974a: 28 (to *Dryocoetoides*).

References: (**hb**) Beaver 1976a: 17. (**ds**) Beaver 1976a: 17. (**tx**) Eggers 1929e: 43, 1934b: 27–29; Fabricius 1801: 394; Schedl 1950i: 147, 178, 1952k: 161, 1954b: 45; Wood, S. L. 1974a: 28.

***granulicauda* (Eggers)** 1931a: 22 (*Xyleborus*). Holotype ♀; Franzos. Guyana (Comopi); Hamburg Museum, lost, cotype in Eggers Collection, in NHMW, Wien.

Distribution: South America (Cayenne/ Suriname/ Venezuela).

References: (**ds**) Blackwelder 1947: 779; Schedl 1970f: 582. (**tx**) Eggers 1931a: 22, 1933b: 2–3, 1941a: 104; Schedl 1933: 3, 1979c: 111.

rufithorax nigricollis Hagedorn 1905b: 2 (*Xyleborus*). Holotype ♀; Camopi Guyanae; MNHN, Paris? Synonymy: Eggers 1933b: 3.

References: (**tx**) Eggers 1931b: 1–3, 1933b: 3; Hagedorn 1905b: 2.

***inaffectatus* (Schedl)** 1972g: 71 (*Xyleborus*). Holotype ♀; Brasilien, Represa, Rio Grande, Guanabara; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1972g: 71, 1979c: 123.

***indolatus* Wood** 1974a: 31. Holotype ♀; 30 km E Palmar, Bolivar, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Parinari excelsa*.
References: (**tx**) Wood, S. L. 1974a: 31.

***insculptus* Wood** 1974a: 30. Holotype ♀; 8 km S Colonia (near Buenaventura), Valle de Cauca, Colombia; Wood Collection.
Distribution: South America (Colombia).
Hosts: *Humiristrum exselsum*.
References: (**tx**) Wood, S. L. 1974a: 30.

***maronicus* (Eggers)** 1933b: 35 (*Xyleborus*). Holotype ♀; Franz. Guyana (Charvein); MNHN, Paris.
Distribution: South America (Cayenne).
References: (**ds**) Blackwelder 1947: 780. (**tx**) Eggers 1933b: 35–36, 1934b: 27–29; Schedl 1950i: 178.

***monachus* (Blandford)** 1898: 204 (*Xyleborus*). Lectotype ♂; Cerro Zunil, Guatemala; BMNH, London, designated by Wood 1982b: 764.
Distribution: North America (Guatemala/ Chiapas, Veracruz in Mexico), South America (Colombia/ Venezuela).
Hosts: *Inga* sp., *Tabebuia* sp.
Notes: (1) Wood 1974a: 28 (to *Dryocoetoides*).
References: (**ds**) Blackwelder 1947: 780; Hagedorn 1910d: 106; Kleine 1913b: 161, 1914b: 371; Wood, S. L. 1982b: 764. (**tx**) Blandford 1898: 204; Hagedorn 1910a: 155; Wood, S. L. 1974a: 28, 1982b: 764.

***obtusitruncatus* (Schedl)** 1948f: 271 (*Xyleborus*). Lectotype ♀; Brazil, Nova Teutonia; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 176.
Distribution: South America (Brazil).
References: (**ds**) Pedrosa-Macedo & Schonherr 1985: 34. (**tx**) Pedrosa-Macedo & Schonherr 1985: 34; de Ruette 1970: 115; Schedl 1948f: 271, 1979c: 176.

***paradoxus* (Schedl)** 1972g: 71 (*Xyleborus*). Holotype ♀; Brasilien, Jacareacanga, Para; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1972g: 71, 1979c: 184.
solitaripennis Schedl 1976a: 77 (*Xyleborus*). Holotype ♀; Maturaca AM, alto Rio Cauaburi; Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 172.
References: (**tx**) Schedl 1976a: 77; Wood, S. L. 1989: 172.

***pileatus* Wood** 1974a: 29. Holotype ♀; 40 km SE Socopo, Barinas, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Inga* sp.
References: (**tx**) Wood, S. L. 1974a: 29.

***pseudosolitarius* (Eggers)** 1933b: 28 (*Xyleborus*). Holotype ♀; Franz. Guyana (Cayenne); MNHN, Paris.
Distribution: Antilles Islands (Dominican Republic/ Puerto Rico), South America (Brazil/ Cayenne/ Venezuela).
Hosts: *Cassia fistula*, *Eucalyptus excelsum*, *Gleditsia* sp., *Hirtella glandulosa*, *Inga vera*.
Notes: (3) Schedl 1950i: 179 (described male).
References: (**hb**) Beaver 1976a: 17. (**ds**) Beaver 1976a: 17; Blackwelder 1947: 780; Schedl 1973d: 159, 1976a: 55. (**tx**) Eggers 1933b: 2, 28–29, 33, 35; Schedl 1950i: 179; Wood, S. L. 1974a: 28, 1989: 172.
pseudosolitarius schizolobius Schedl 1950: 179 (*Xyleborus*). Lectotype ♀; Brazil, Rio Claro; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 202. Synonymy: Wood 1989: 172.
References: (**tx**) Schedl 1950i: 179, 1979c: 202; Wood, S. L. 1989: 172.

***rusticus* Wood** 1974a: 30. Holotype ♀; 30 km E Palmar, Bolivar, Venezuela; Wood Collection.
Distribution: South America (Brazil/ Venezuela).
Hosts: *Hirtella* sp., *Pouteria* sp.
References: (**hb**) Beaver 1976a: 17. (**ds**) Beaver 1976a: 17. (**tx**) Wood, S. L. 1974a: 30.

***semicostatus* (Schedl)** 1948f: 268 (*Xyleborus*). Holotype ♀; Brasil, Corumba, Alto Paraguay; Schedl Collection, in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1948f: 268–269, 1979c: 224.

***severus* Wood** 1974a: 30. Holotype ♀; 30 km E Palmar, Bolivar, Venezuela; Wood Collection.
Distribution: South America (Brazil/ Venezuela).
Hosts: *Eschweilera subglandulosa*, *Pouteria* sp., *Pseudoolmedia laevigata*.
References: (**tx**) Wood, S. L. 1974a: 30.

***solitariformis* (Schedl)** 1976g: 77 (*Xyleborus*). Holotype ♀; Xingu, Mato Grosso, Brazil; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1976g: 77.

***solitarinus* (Schedl)** 1950i: 178 (*Xyleborus*). Lectotype ♀; Brazil, Rio Claro; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 232.
Distribution: South America (Brazil).
Hosts: *Eucalyptus* sp.
References: (**ds**) Schedl 1966f: 90, 1967d: 3, 1972g: 45, 1973d: 159, 1976a: 55. (**tx**) Schedl 1939j: 565, 1950i: 178, 1979c: 232.

***truncatellus* (Schedl)** 1948f: 272 (*Xyleborus*). Syntypes ♀; Brazil, Nova Teutonia; Schedl Collection in NHMW, Wien, and Plaumann Collection.

Figures: Pedrosa-Macedo & Schonherr 1985: 43.
Distribution: South America (Brazil).
Notes: (1) Schedl 1979c: 257 (citation of holotype invalid).
References: (**ds**) Pedrosa-Macedo & Schonherr 1985: 43; Schedl 1967d: 4. (**tx**) Pedrosa-Macedo & Schonherr 1985: 43; de Ruette 1970: 115; Schedl 1948f: 272, 1950i: 147, 1979c: 256.

***velutinus* Wood** 1974a: 29. Holotype ♀; 30 km E Palmar, Bolivar, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: Pandanga.
References: (**tx**) Wood, S. L. 1974a: 29.

***verrucosus* Wood** 1974a: 28. Holotype ♀; 30 km E Palmar, Bolivar, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Inga* sp., Rosada (Moraceae).
References: (**tx**) Wood, S. L. 1974a: 28.

***vexans* (Schedl)** 1972g: 72 (*Xyleborus*). Holotype ♀; Brasilien, S. Caraca, S. Barbara, M. Gerais, 1450 m; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1972g: 72, 1979c: 266.

Genus *Leptoxyleborus* Wood

LEPTOXYLEBORUS WOOD 1980c: 94. Type-species: *Phloeotrogus sordicauda* Motschulsky, original designation.
References: (**hb**) Wood, S. L. 1986a: 82. (**ds**) Wood, S. L. 1986a: 82. (**tx**) Wood, S. L. 1980c: 94, 1986a: 82.

***ceramensis* (Schedl)** 1937e: 549 (*Xyleborus*). Holotype ♀; Ceram [Moluccas Islands]; Schedl Collection in NHMW, Wien.
Distribution: Indonesia (Moluccas Islands).
References: (**tx**) Schedl 1937e: 549, 1979c: 55.

***concisus* (Blandford)** 1894d: 107 (*Xyleborus*). Holotype ♀; Japan [type without locality data]; BMNH, London.
Figures: Nobuchi 1978a:pl. 2.
Distribution: Asia (Burma/ Andaman Islands, Assam, Bengal in India/ Japan/ Malaya/ Sri Lanka/ Taiwan), Indonesia (Borneo, Java, Sumatra), Philippine Islands.
Hosts: *Acrocarpus* spp., *Albizzia* sp., *Amoora wallichi*, *Anthocephalus* sp., *Artocarpus chaplasha*, *A. elastica*, *A.* spp., *Balanocarpus heimii*, *Calamus* sp., *Canarium* sp., *Chisocheton glomeratus*, *Cinchona* sp., *Daemonorops* sp., *Dipterocarpus baudii*, *D. kunstleri*, *D.* sp., *Endospermum malaccense*, *Fagara* sp., *Fagraea gigantea*, *Ficus* sp., *Homalanthus* sp., *Hopea ferrea*, *Nipa* sp., *Parinari* sp., *Pasania sundaica*, *P.* sp., *Phoenix paludosa*, *Pterocarpus* sp., *Quercus* sp., *Saraca* sp., *Scaphium* sp., *Shiia* sp., *Shorea leprosula*, *S. ovalis*, *Sloetia elongata*, *Tectona grandis*, *Terminalia bialata*, *T. procera*, *Toonia sinensis*, *Xanthophyllum* spp., *Xylia xylocarpa*.
References: (**hb**) Beaver & Browne 1978: 606; Browne 1961c: 136; Kalshoven 1959c: 146. (**ds**) Beaver & Browne 1978: 606; Blandford 1894c: 579; Browne 1961a: 305, 1961c: 136–137; Hagedorn 1910d: 100; Kalshoven 1959c: 146; Kleine 1913b: 160, 1914b: 260; Murayama 1936a: 131, 1954b: 203; Nobuchi 1978a: 27; Ohno, Yoneyama, & Nakazawa 1982b: 8, 1987: 94; Ohno et al. 1987: 88, 1989: 61; Schedl 1961f: 93, 1965g: 22, 1966b: 49, 1969a: 204. (**tx**) Blandford 1894d: 107; Browne 1955: 354; Hagedorn 1910a: 153; Murayama 1934c: 299, 1936a: 131–132, 1954b: 203, 1955: 100; Nobuchi 1978a:pl. 2, 1983: 302; Schedl 1934f: 1646, 1961f: 93, 1965g: 22, 1979c: 61.

sordicaudulus Eggers 1927c: 91 (*Xyleborus*). Lectotype ♀; Philippinen: Palawan, Binaluan; USNM, Washington, designated by Anderson & Anderson 1971: 30. Synonymy: Browne 1955: 354.
References: (**cn**) Mathur & Singh 1961b: 97. (**ds**) Beeson 1930; Kleine 1934a: 175; Mathur & Singh 1961b: 97; Nunberg 1961b: 611; Schedl 1936j: 19. (**tx**) Anderson, W. H. & Anderson 1971: 30; Beeson 1930: 84, 260; Browne 1955: 354; Eggers 1927c: 91–92, 1930d: 198; Schedl 1939e: 331, 1942a: 171, 1942d: 5, 30, 1951i: 51, 1979c: 232.

marginatus Eggers 1927c: 91 (*Xyleborus*). Holotype ♀; Philippinen: Mindoro, Subaan; USNM, Washington. Synonymy: Browne 1955: 354.
Notes: (1) Schedl 1979c: 149 (invalid holotype designation, based on an Eggers cotype).
References: (**cn**) Yunus & Hua 1980: 230. (**ds**) Schedl 1936d: 4, 1936j: 20, 1971a: 281; Yunus & Hua 1980: 230. (**tx**) Anderson, W. H. & Anderson 1971: 19; Browne 1955: 354; Eggers 1927c: 91–92, 1930d: 197–198; Schedl 1939e: 331, 1942a: 171, 1951i: 41, 43, 51, 1954a: 142, 1958k: 145, 1979c: 149.

incurvus Eggers 1930d: 197 (*Xyleborus*). Holotype ♀; Bengal: Government Cinchona Plantation, Mungpoo; FRI, Dehra Dun. Synonymy: Wood 1989: 175.
References: (**cn**) Mathur & Singh 1961a: 75, 1961b: 14; Roonwal 1954: 33. (**ds**) Beeson 1930, 1961: 305; Kleine 1934a: 173; Lepesme et al. 1948: 648; Mathur & Singh 1961a: 75, 1961b: 14; Roonwal 1954: 33. (**tx**) Beeson 1930: 62–63; Eggers 1930d: 197–198; Wood, S. L. 1989: 175.

sordicaudulus peguensis Eggers 1930d: 198 (*Xyleborus*). Holotype ♀; Burma (North Pegu Division); FRI, Dehra Dun. Synonymy: Schedl 1951i: 51.
References: (**cn**) Mathur & Singh 1961b: 97. (**hb**) Browne 1936a, 1955: 354. (**ds**) Beeson 1930; Browne 1936a; Kleine 1934a: 175; Mathur & Singh 1961b: 97; Schedl 1936j: 20, 1951i: 51, 1960i: 112. (**tx**) Beeson 1930: 84, 260; Browne 1955: 354; Eggers 1927c: 91, 1930d: 198; Schedl 1951i: 51.

***depressus* (Eggers)** 1923a: 190 (*Xyleborus*). Holotype ♀; Sumatra; Eggers Collection, in NHMW, Wien.

Distribution: Asia (Malaya), Indonesia (Borneo, Sumatra).

Hosts: *Castanopsis* sp., *Elaeocarpus ferrugineus*, *E. jackianus*, *Shorea uliginosa*.

References: (**hb**) Browne 1961c: 137. (**ds**) Browne 1961c: 137. (**tx**) Eggers 1923a: 189–190; Schedl 1979c: 78.

sejugatus Schedl 1942a: 188 (*Xyleborus*). Holotype ♀; Malaya, Perak, Trolak F. R.; BMNH, London. Synonymy: Wood 1989: 175.

References: (**ds**) Browne 1961c: 138, 1981b: 599; Ohno et al. 1988a: 94; Schedl 1971c: 370. (**tx**) Schedl 1942a: 188.

***novus* (Eggers)** 1923a: 190 (*Xyleborus*). Lectotype ♀; Mentawei (Sipora); USNM, Washington, designated by Anderson & Anderson 1971: 22.

Distribution: Indonesia (Mentawei).

References: (**tx**) Anderson, W. H. & Anderson 1971: 22; Eggers 1923a: 190.

***puer* (Eggers)** 1923a: 191 (*Xyleborus*). Syntypes ♀; Mentawei: MCG, Genova, Eggers Collection (USNM, Washington or NHMW, Wien?), MNB, Berlin.

Distribution: Asia (Malaya), Indonesia (Borneo, Mentawei), New Guinea.

Hosts: *Intsia palembanica*, *Shorea* sp.

References: (**hb**) Browne 1961c: 135. (**ds**) Browne 1961a: 306, 1961c: 135, 1965a: 189; Schedl 1964c: 305, 1965g: 24. (**tx**) Eggers 1923a: 191; Schedl 1940b: 435, 1979c: 203.

***punctatissimus* (*Eichhoff*)** 1880a: 189 (*Xyleborus*). Syntypes 2 ♀; Alahan pandjang, Sumatra; RNH, Leiden.

Figures: Nobuchi 1978a:pl. 2.

Distribution: Asia (India/ Malaya), Indonesia (Borneo, Java, Sumatra).

Hosts: *Symplocos* sp., *Xanthophyllum* sp.

References: (**hb**) Browne 1961c: 135; Kalshoven 1959c: 137. (**ds**) Beaver & Browne 1978: 612; Browne 1961c: 135; Hagedorn 1910d: 109; Kalshoven 1959c: 137; Kleine 1913b: 162, 1914b: 268, 289; Nobuchi 1978a: 23; Schedl 1965g: 22, 1969a: 208, 1971f: 149. (**tx**) Eggers 1923a: 190–191, 1927b: 407; Eichhoff 1880a: 189; Hagedorn 1910a: 156; Kalshoven 1959b: 95, 1960d; Nobuchi 1978a:pl. 2; Schedl 1939e: 330, 1951i: 42.

spatulatus Blandford 1896b: 218 (*Xyleborus*). Syntypes 2 ♀; Borneo, Sarawak; BMNH, London. Synonymy: Kalshoven 1959b: 95.

References: (**hb**) Browne 1935a. (**ds**) Beeson 1961: 309; Browne 1935a; Hagedorn 1910d: 111. (**tx**) Blandford 1896b: 218; Hagedorn 1910a: 156; Kalshoven 1959b: 95; Schedl 1937e: 549, 1979c: 234.

***scabrior* (Schedl)** 1953c: 304 (*Xyleborus*). Lectotype ♀; Malaya, Kelantan, Kuala Gis.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 220.

Distribution: Asia (Malaya/ Nepal).

Hosts: *Castanopsis* sp., *Shorea* sp., *Triplochiton scleroxylon*, *Vatica* sp.

References: (**hb**) Browne 1961c: 136. (**ds**) Browne 1961c: 136, 1962c: 202; Thompson, G. H. 1963: 72. (**tx**) Schedl 1953c: 304, 1979c: 220.

***semigranulatus* (Schedl)** 1931c: 340 (*Xyleborus*). Holotype ♀; Java, Mt. Gede, 1500 m; Schedl Collection in NHMW, Wien.

Distribution: Indonesia (Borneo, Java).

Hosts: *Castanea javanica*, *Cinnamomum camphora*.

References: (**hb**) Kalshoven 1959c: 146. (**ds**) Kalshoven 1959c: 146. (**tx**) Eggers 1940d: 148; Schedl 1931c: 340–341, 1979c: 224.

artemarginatus Schedl 1975a: 456 (*Xyleborus*). Holotype ♀; Borneo; Eggers Collection, in NHMW, Wien. Synonymy: Wood 1989: 175.

References: (**tx**) Schedl 1975a: 456, 1979c: 27.

***sordicauda* (Motschulsky)** 1863: 514 (*Phloeotrogus*). Syntypes 2 ♀; types labeled India Occidental, published as Continent indien; IZM, Moscow.

Distribution: Asia (Burma/ Assam, Bengal in India), New Guinea, Philippine Islands.

Hosts: *Acrocarpus fraxinifolius*, *Stereospermum neuranthum*, *S.* sp., *Tectona grandis*, *Terminalia chebula*, *Xylia xylocarpa*.

Notes: (1) Wood 1969c: 120 (identity established).

References: (**cn**) Kalshoven 1924c; Mathur & Singh 1961a: 74, 1961b: 31. (**hb**) Kalshoven 1924c: 1–27, 1959: 146. (**ds**) Beeson 1930; Gemminger & Harold 1872: 2692; Hagedorn 1910d: 111; Kleine 1913b: 169, 1914b: 278; Mathur & Singh 1961a: 74; Schedl 1966b: 72. (**tx**) Beeson 1930: 83, 259; Eggers 1923a: 188, 201, 1925: 153, 1927c: 91, 1930d: 197; Hagedorn 1910a: 156; Mathur & Singh 1961b: 14; Motschulsky 1863: 514; Nobuchi 1983: 304; Schedl 1940b: 435; Wood, S. L. 1969c: 119–120.

attenuatus Motschulsky 1863: 514 (*Phloeotrogus*). Holotype ♀; type labeled India Occidental, printed as Continent indien; IZM, Moscow. Synonymy: Wood 1969c: 119.

References: (**ds**) Gemminger & Harold 1872: 2692; Kleine 1913b: 167, 1914b: 270. (**tx**) Hagedorn 1910a: 152; Motschulsky 1863: 514; Wood, S. L. 1969c: 119.

Genus *Theoborus* Hopkins

THEOBORUS HOPKINS 1915b: 57. Type-species: *Theoborus theobromae* Hopkins, original designation.

Keys: Wood 1982b: 770 for Central America.

References: (**hb**) Wood, S. L. 1986a: 82. (**ds**) Wood, S. L. 1982b: 770, 1986a: 82. (**tx**) Hopkins 1915b: 10, 57; Wood, S. L. 1982b: 770–776, 1986a: 82.

***coartatus* (Sampson)** 1921: 32 (*Xyleborus*). Holotype ♀; Trinidad: BMNH, London.
Distribution: Antilles Islands (Jamaica/ Trinidad), North America (Costa Rica/ Chiapas in Mexico/ Panama), South America (Brazil/ Colombia).
Hosts: *Mimosa* sp., *Theobroma cacao*.
References: (**hb**) Wood, S. L. 1982b: 776. (**ds**) Blackwelder 1947: 779; Sampson 1921: 32–33; Terra 1987: 20; Wood, S. L. 1982b: 776. (**tx**) Eggers 1932d: 298; Sampson 1921: 32–33; Schedl 1950d: 3, 1979c: 59; Terra 1987: 20; Wood, S. L. 1966b: 31, 1982b: 776.

artecuneolus Schedl 1939n: 14 (*Xyleborus*). Holotype ♀; Trinidad; BMNH, London. Synonymy: Wood 1966b: 31.
References: (**ds**) Schedl 1973d: 157. (**tx**) Schedl 1939n: 14, 1979c: 26; Wood, S. L. 1966b: 31.

***incultus* (Wood)** 1975b: 400 (*Xyleborus*). Holotype ♀; Fort Clayton, Canal Zone, Panama; Wood Collection.
Distribution: North America (Panama).
Hosts: *Cecropia* sp. branch.
References: (**ds**) Estrada & Atkinson 1988: 206; Wood, S. L. 1982b: 773. (**tx**) Wood, S. L. 1975b: 400, 1982b: 773.

***micarius* (Wood)** 1974a: 33 (*Xyleborus*). Holotype ♀; Guapiles, Limon, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: *Cordia* sp.
References: (**hb**) Wood, S. L. 1982b: 774. (**ds**) Wood, S. L. 1982b: 774. (**tx**) Wood, S. L. 1974a: 33, 1982b: 774.

***molestulus* (Wood)** 1975b: 400 (*Xyleborus*). Holotype ♀; Barro Colorado Island, Canal Zone, Panama; Wood Collection.
Distribution: North America (Panama).
References: (**ds**) Wood, S. L. 1982b: 775. (**tx**) Wood, S. L. 1975b: 400, 1982b: 775.

***pristis* (Wood)** 1974a: 32 (*Xyleborus*). Holotype ♀; Tapanti, Cartago, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica/ Panama).
Hosts: *Miconia caudata*, tree limbs.
References: (**hb**) Wood, S. L. 1982b: 773. (**ds**) Wood, S. L. 1982b: 773. (**tx**) Wood, S. L. 1974a: 32, 1982b: 773.

***ricini* (Eggers)** 1932d: 298 (*Xyleborus*). Holotype ♀; Congostaat: Stanleyville; USNM, Washington.
Figures: Nunberg 1963b:pl. 24.
Distribution: Africa (introduced into: Cameroon/ Equatorial Guinea/ Ghana/ Ivory Coast/ Sao Tome Island/ Uganda/ Zaire), Antilles Islands (Dominican Republic in Hispanola), North America (Costa Rica/ Honduras/ Veracruz in Mexico/ Florida in USA), South America (Brazil/ Colombia/ Venezuela).
Hosts: *Albizzia gummifera*, *Aptandra zenkeri*, *Citrus aurantifolia*, *Dioclea megacarpa*, *Hevea brasiliensis*, *Maesa rufescens*, *Ricinus communis*, *Swietenia* sp., *Terminalia* sp., *Tetrapleura tetraptera*, *Theobroma cacao*. Schedl 1962j: 289 adds others.
References: (**hb**) Ghesquiere 1933a: 31–34, 1933b: 781; Roberts 1969: 133; Schedl 1962j: 288. (**ds**) Schedl 1962h: 60, 1962j: 288, 1962k: 1102, 1964j: 42, 1965e: 355, 1967e: 218, 1971g: 193, 1972e: 284, 1977d: 279, 1979b: 416. (**tx**) Anderson, W. H. & Anderson 1971: 28; Eggers 1932d: 298; Nunberg 1963b: 48, pl. 24; Schedl 1941d: 380, 1948f: 270, 1952g: 52, 1962j: 48, 288–289, 1962k: 1102, 1979c: 211.

solitariceps Schedl 1954b: 45 (*Xyleborus*). Lectotype ♀; Brasilien: Parana, Rondon; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 232. Synonymy: Wood 1989: 176.
References: (**hb**) Atkinson & Equihua 1985b: 237, 1986a: 421; Wood, S. L. 1982b: 775. (**ds**) Atkinson & Equihua 1985b: 237, 1986a: 421; Atkinson et al. 1991: 160; Bright 1982b: 165, 1985c: 173; Estrada & Atkinson 1988: 206; Schedl 1966f: 90; Wood, S. L. 1982b: 775. (**tx**) Bright 1982b: 165, 1985c: 173; Schedl 1954b: 45, 1979c: 232; Wood, S. L. 1982b: 775.

***theobromae* Hopkins** 1915b: 57. Holotype ♀; West Indian: Dominica; USNM, Washington.
Distribution: Antilles Islands (Barbados/ Dominica/ Dominican Republic in Hispanola/ Guadeloupe/ Trinidad), North America (Costa Rica/ Chiapas, Veracruz in Mexico/ Panama), South America (Cayenne/ Colombia/ Venezuela).
Hosts: *Erythrina costaricensis*, *Ochroma* sp., *Theobroma cacao*.
References: (**hb**) Morales & Bhaktar 1984; Wood, S. L. 1982b: 772. (**ds**) Atkinson 1986a: 421; Blackwelder 1947: 779; Bright 1985c: 173; Kleine 1934a: 178; Leng & Mutchler 1917: 220; Wood, S. L. 1982b: 772. (**tx**) Bright 1985c: 173; Hopkins 1915b: 57; Schedl 1952k: 163; Wood, S. L. 1962: 79, 1985c: 173.

pseudococcotrypes Eggers 1941a: 105 (*Xyleborus*). Holotype ♀; Franz. Guyana (St. Jean du Maroni); MNHN, Paris. Synonymy: Wood 1962: 79.
References: (**tx**) Eggers 1941a: 105; Schedl 1979c: 201; Wood, S. L. 1962: 79.

hirtellus Schedl 1948f: 271 (*Xyleborus*). Lectotype ♀; West Indies, St. Vincent, Trinidad; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 118. Synonymy: Schedl 1952k: 163.
References: (**tx**) Schedl 1948f: 271, 1952k: 163, 1979c: 118.

***villosulus* (Blandford)** 1898b: 204 (*Xyleborus*). Holotype ♀; Rio Naranjo, San Marcos, Guatemala; BMNH, London.
Figures: Nunberg 1971: 63–64, Pedrosa-Macedo & Schonherr 1985: 21.

Distribution: North America (Guatemala), South America (Argentina/ Bolivia/ Brazil/ Cayenne/ Peru/ Venezuela).

Hosts: *Inga* sp., *Pinus elliottii*, *Theobroma cacao*.

References: (**ds**) Blackwelder 1947: 780; Hagedorn 1910d: 112; Kleine 1913b: 162, 1914b: 371; Pedrosa-Macedo & Schonherr 1985: 21; Terra 1987: 22; Wood, S. L. 1982b: 772. (**tx**) Blandford 1898b: 204; Hagedorn 1910a: 157; Pedrosa-Macedo & Schonherr 1985: 21; Schedl 1952k: 161; Terra 1987: 22; Wood, S. L. 1982b: 772.

coccotrypoides Eggers 1943a: 388 (*Xyleborus*). Holotype ♀; Bolivia (Cochabamba); MNHN, Paris. Synonymy: Wood 1976a: 349.

References: (**ds**) Nunberg 1962: 224, 1971: 58; Schedl 1976a: 54, 1979e: 58; Schonherr & Pedrosa-Macedo 1981: 55. (**tx**) Eggers 1943a: 388; Nunberg 1971: 63–64; Schedl 1979c: 59; Wood, S. L. 1976a: 349.

villosus Schedl 1948f: 270 (*Xyleborus*). Syntypes ♀; Brasil, Nova Teutonia; Schedl Collection in NHMW, Wien, and Plaumann Collection.

Notes: (1) Schedl 1979c: 268 (citation of holotype invalid).

References: (**cn**) Cranham 1966c. (**hb**) Cranham 1966c. (**ds**) Navajas 1966: 48–50; Schedl 1966f: 80, 1967d: 4, 1970e: 85, 1973d: 160. (**tx**) Schedl 1948f: 270, 1958f: 35, 1979c: 268; Wood, S. L. 1976a: 349.

Genus *Coptoborus* Hopkins

COPTOBORUS HOPKINS 1915b: 53. Type-species: *Coptoborus emarginatus* Hopkins =*Xyleborus vespatorius* Schedl, original designation.

Streptocranus Schedl 1939f: 52. Type-species: *Streptocranus mirabilis* Schedl, monobasic. Synonymy: Wood 1980c: 96.

References: (**tx**) Browne1949b: 898, 1960: 201–220, 1961c: 171; Schedl 1939f: 52, 1957d: 86; Wood, S. L. 1980c: 96, 1986a: 82–83.

Keys: Wood 1982b: 780 for Central America.

Notes: (1) New World and Old World representatives of this genus form distinct groups except that the type-species is intermediate and bridges the gap between them.

References: (**hb**) Wood, S. L. 1986a: 82–83. (**ds**) Wood, S. L. 1986a: 82–83. (**tx**) Hopkins 1915b: 10, 53; Schedl 1952k: 162–163; Wood, S. L. 1980c: 96, 1986a: 82–83.

***adjunctus* (Eggers)** 1924: 108 (*Xyleborus*). Holotype ♀; Mont Kalombo (Manyema), Congostaat; USNM, Washington.

Distribution: Africa (Angola/ Congo/ Equatorial Guinea/ Gabon/ Ghana/ Guinea/ Tanzania/ Zaire/ Zimbabwe).

Hosts: *Albizzia gummifera*.

References: (**hb**) Loyttyniemi, Beaver, & Loyttyniemi 1984; Roberts 1969: 188. (**ds**) Ferreira 1965: 1120; Schedl 1959p: 19; 1962j: 563, 1966c: 226, 1971g: 192. (**tx**) Anderson, W. H. & Anderson 1971: 3; Browne 1965a: 188; Eggers 1922b: 172, 1924: 108, 1927a; Schedl 1962j: 563, 1979c: 12.

adjunctus corruptus Schedl 1962j: 564 (*Xyleborus*). Lectotype ♀; Congo Belge: Kasai, Ngombe; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 12.

Notes: (3) An apparent aberration.

References: (**ds**) Ferreira 1966: 1112; Schedl 1967e: 215. (**tx**) Schedl 1962j: 564, 1979c: 12.

***artetenuis* (Schedl)** 1973c: 372 (*Xyleborus*). Holotype ♀; Bolivien, Guayaramerin (Beni); NHMB, Budapest.

Distribution: South America (Bolivia).

References: (**tx**) Schedl 1973c: 372.

***assiduus* (Schedl)** 1961i: 228 (*Xyleborus*). Holotype ♀; Venezuela, Mt. Duida; CAS, San Francisco, lost (?).

Distribution: South America (Venezuela).

Notes: (1) The Schedl "paratype" at NHMW, Wien, apparently represents the only known specimen from the type series; the "holotype" was not returned to the California Academy of Science, as was stated in the description, and in all probability never existed except as the "paratype."

References: (**ds**) Schedl 1960a: 78. (**tx**) Schedl 1961i: 228, 1979c: 29.

***bicolor* (Browne)** 1949b: 900 (*Streptocranus*). Holotype ♀; Malaya: Kelantan, Nal.; BMNH, London.

Distribution: Asia (Malaya).

Hosts: *Eugenia* sp., *Palaquium stellatum*.

References: (**hb**) Browne 1961c: 172. (**ds**) Browne 1986c: 662. (**tx**) Browne 1949b: 900, 1961c: 172.

***bicuspis* (Eggers)** 1940d: 153 (*Xyleborus*). Holotype ♀; Java; Drescher Collection, cotype in Eggers cotype in NHMW, Wien.

Distribution: Asia (Malaya), Indonesia (Borneo/ Java).

Hosts: *Castanopsis* sp.

Notes: (1) Schedl 1979c: 39 (invalid lectotype designation from the Eggers cotype in NHMW, Wien; a holotype existed).

References: (**ds**) Browne 1961c: 172. (**tx**) Browne 1960: 206; Eggers 1940d: 153; Schedl 1934g: 178, 1950g: 893, 1979c: 39.

recurvus Browne 1949b: 898 (*Streptocranus*). Holotype ♀; Malaya: Kelantan, Kampong Kroh; BMNH, London. Synonymy: Schedl 1950g: 893.

References: (**tx**) Browne 1949b: 898; Schedl 1950g: 893.

***bispinus* (Schedl)** 1979g: 104 (*Xyleborus*). Holotype ♀; Papua New Guinea: Morobe Distr., Bulolo, Taun L. A.; Schedl Collection in NHMW, Wien.

Distribution: New Guinea.

References: (**tx**) Schedl 1979g: 104.

***capucinulus* (Schedl)** 1942d: 27 (*Streptocranus*). Lectotype ♀; Java, Buitenzorg; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 52.
Distribution: Asia (Malaya), Indonesia (Java).
Hosts: *Canarium* sp.
Notes: (3) Schedl 1951i: 95 (described male).
References: (**hb**) Browne 1961c: 172; Kalshoven 1959c: 164. (**ds**) Browne 1961c: 172; Kalshoven 1959c: 164. (**tx**) Beaver & Browne 1978: 600; Browne 1950b: 645, 1959a: 87; Kalshoven 1959b: 97; Schedl 1942d: 27, 1951i: 95, 1979c: 52.
penangensis Browne 1950b: 645 (*Streptocranus*). Holotype ♀; Malaya: Penang; BMNH, London. Synonymy: Browne 1959a: 97, Kalshoven 1959b: 97.
References: (**tx**) Browne 1950b: 645, 1959a: 97; Kalshoven 1959b: 97.

***catulus* (Blandford)** 1898b: 215 (*Xyleborus*). Holotype ♀; Volcan de Chiriqui, Chiriqui, Panama; BMNH, London.
Distribution: North America (Panama), South America (Brazil/ Suriname/ Venezuela).
Hosts: *Guazuma ulmifolia*.
References: (**hb**) Wood, S. L. 1982b: 801. (**ds**) Atkinson & Equihua 1986a: 421; Blackwelder 1947: 779; Hagedorn 1910d: 99; Kleine 1914b: 372; Wood, S. L. 1982b: 801. (**tx**) Blandford 1898b: 215; Eggers 1927a: 190; Hagedorn 1910a: 152; Wood, S. L. 1975a: 23, 1982b: 801.
intricatus Schedl 1948f: 274 (*Xyleborus*). Holotype ♀; Brazil, St. Catharina; Schedl Collection in NHMW, Wien. Synonymy: Wood 1975a: 23.
References: (**ds**) Schedl 1960a: 78, 1966f: 77, 1967d: 3, 1978c: 291. (**tx**) Schedl 1948f: 274, 1979c: 128; Wood, S. L. 1975a: 23.

***cuneatus* (Eichhoff)** 1878b: 380 (*Xyleborus*). Holotype ♀; Varinas, Nova Grenada [presumably Barinas, Venezuela]; Schedl Collection in NHMW, Wien.
Distribution: North America (Panama), South America (Colombia/ Peru/ Venezuela).
References: (**ds**) Blackwelder 1947: 779; Hagedorn 1910d: 101; Kleine 1913b: 160, 1914b: 342; Wood, S. L. 1982b: 802. (**tx**) Eggers 1927c: 92, 1928c: 97, 1934b: 27–29; Eichhoff 1878b: 380; Hagedorn 1910a: 152; Sampson 1919: 110; Schedl 1948f: 269, 1979c: 71.

***exutus* (Wood)** 1974a: 36 (*Xyleborus*). Holotype ♀; Turrialba, Cartago, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Notes: (3) Schedl 1980d: 121 (erroneously treats this as a synonym).
References: (**ds**) Wood, S. L. 1982b: 803. (**tx**) Schedl 1980d: 121; Wood, S. L. 1974a: 36, 1982b: 803.

***forficatus* (Schedl)** 1957d: 108 (*Xyleborus*). Holotype ♀; Congo Belge: Kivu, route Tshibinda-Bunyakiri; MRCB, Tervuren.
Figures: Nunberg 1963b:pl. 15.
Distribution: Africa (Zaire).
Hosts: *Anthonotha macrophylla*, *Turraeanthus africana*.
References: (**hb**) Roberts 1969: 128; Schedl 1962j: 565. (**ds**) Schedl 1962j: 565. (**tx**) Nunberg 1963b: 33, pl. 15; Schedl 1957d: 108, 1962j: 565, 1979c: 98.

***fragilis* (Browne)** 1949b: 901 (*Streptocranus*). Holotype ♀; Malaya: Kelantan, Nal.; BMNH, London.
Distribution: Asia (Malaya).
Hosts: *Eugenia* sp., *Palaquium stellatum*.
References: (**hb**) Browne 1961c: 172. (**ds**) Browne 1961c: 172. (**tx**) Browne 1949b: 901.

***gentilis* (Schedl)** 1972g: 70 (*Xyleborus*). Holotype ♀; Brasilien, Corcovado, Guanabara; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1972g: 70, 1979c: 103.

***longicauda* (Browne)** 1960: 206 (*Streptocranus*). Holotype ♀; Malaya: Kepong; BMNH, London.
Distribution: Asia (Malaya), Indonesia (Sumatra).
Hosts: *Castanopsis sumatrana*.
References: (**hb**) Browne 1961c: 171; Parsons 1963: 351. (**ds**) Browne 1960: 206, 1961c: 171, 1962b: 206.

***longispinis* Browne** 1986a: 91 (*Streptocranus*). Holotype ♀; New Guinea: Fak fak to Nagoya, intercepted; BMNH, London.
Distribution: New Guinea.
Hosts: Penaraham log (Myristicaceae).
References: (**tx**) Browne 1986a: 91.

***melas* (Eggers)** 1927c: 93 (*Xyleborus*). Lectotype ♀; Philippinen: Luzon, Provinz Mountain, Balbalan; USNM, Washington, designated by Anderson & Anderson 1971: 20.
Distribution: Philippine Islands, Samoa.
References: (**ds**) Schedl 1966b: 61, 1972b: 267. (**tx**) Anderson, W. H. & Anderson 1971: 20; Eggers 1927c: 93, 1932d: 300; Nobuchi 1983: 303; Schedl 1958b: 104, 1979c: 151.

***mirabilis* (Schedl)** 1939f: 53 (*Streptocranus*). Lectotype ♀; Java, Mount Gede, 800 m; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 157.
Distribution: Indonesia (Java).
References: (**hb**) Kalshoven 1959c: 164. (**ds**) Kalshoven 1959c: 164. (**tx**) Schedl 1934g: 178, 1939e: 355, 1939f: 53, 1951i: 44, 84, 1979c: 157.

***neoadjunctus* (Schedl)** 1967d: 13 (*Xyleborus*). Holotype ♀; Brasilien, Nova Teutonia, Santa Catarina; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1967d: 13–14, 1979c: 164.

***neosphenos* (Schedl)** 1976a: 76 (*Xyleborus*). Holotype ♀; Vilhena, Rondonia [Brazil]; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).

References: (**tx**) Schedl 1976a: 76.

***palmeri* Hopkins** 1915b: 54. Holotype ♀; Mount Salak, Java; USNM, Washington.
Distribution: Indonesia (Java).
References: (**tx**) Hopkins 1915b: 53–54; Schedl 1952k: 163.

***pseudotenuis* (Schedl)** 1936i: 109 (*Xyleborus*). Holotype ♀; Brasilien; Schedl Collection in NHMW, Wien.
Distribution: North America (Costa Rica/ San Luis Potosi, Veracruz in Mexico/ Panama), South America (Brazil/ Venezuela).
Hosts: *Cordia* sp., *Hevea brasiliensis*, *Theobroma cacao*.
References: (**hb**) Wood, S. L. 1982b: 802. (**ds**) Atkinson & Equihua 1985b: 237, 1986a: 421; Blackwelder 1947: 780; Estrada & Atkinson 1988: 207; Ferrer 1942; Schedl 1976a: 55; Wood, S. L. 1982b: 802. (**tx**) Schedl 1936i: 109–110, 1940a: 361, 1959a: 510, 1979c: 202; Wood, S. L. 1976a: 349, 1982b: 802.

tenuis Schedl 1948f: 269 (*Xyleborus*). Holotype ♀; Cordova [presumably Veracruz, Mexico]; Schedl Collection in NHMW, Wien. Synonymy: Wood 1976a: 349.
References: (**tx**) Schedl 1934e: 209, 1936i: 108–109, 1948f: 269, 1979: 252; Wood, S. L. 1976a: 349.

exilis Schedl 1934e: 209 (*Xyleborus*). Holotype ♀; Halbinsil Osa, Costa Rica; Schedl Collection in NHMW, Wien. Wood 1982b: 802 (a probable synonym).
References: (**ds**) Blackwelder 1947: 779. (**tx**) Schedl 1934e: 209, 1979c: 93; Wood, S. L. 1982b: 802.

***superbulus* (Schedl)** 1958k: 148 (*Xyleborus*). Holotype ♀; Java, Buitenzorg, 250 m; Schedl Collection in NHMW, Wien, automatic.
Distribution: Indonesia (Java), New Guinea.
References: (**tx**) Schedl 1958k: 148.

superbus Schedl 1951i: 95 (*Xyleborus*). Holotype ♀; Java, Buitenzorg, 250 m; Schedl Collection in NHMW, Wien, preoccupied by Schedl 1942.
References: (**tx**) Schedl 1951i: 95, 1958k: 148.

***superbus* (Schedl)** 1942c: 188 (*Xyleborus*). Holotype ♀; Neu Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1942c: 188, 1970a: 216, 1979c: 247.

***terminaliae* Hopkins** 1915b: 54. Holotype ♀; Pagbilao, P. I.; USNM, Washington.
Distribution: Philippine Islands.
Hosts: *Terminalia edulis*.
References: (**tx**) Hopkins 1915b: 53–54; Schedl 1952k: 163.

***tolimanus* (Eggers)** 1928c: 97 (*Xyleborus*). Lectotype ♀; Columbia (Tolima); USNM, Washington, designated by Anderson & Anderson 1971: 34.
Figures: Nunberg 1971: 63, Terra 1987: 26.
Distribution: North America (Costa Rica), South America (Brazil/ Colombia/ Venezuela).
Hosts: *Guatteria* sp., *Protium* sp., *Theobroma cacao*.
References: (**hb**) Beaver 1976a: 27; Wood, S. L. 1982b: 803. (**ds**) Atkinson & Equihua 1986a: 421, 1988: 102; Beaver 1976a: 27; Blackwelder 1947: 780; Kleine 1934a: 175; Nunberg 1971: 58; Schedl 1966f: 90, 1970e: 85, 1972g: 45; Terra 1987: 25; Wood, S. L. 1982b: 803. (**tx**) Anderson, W. H. & Anderson 1971: 34; Eggers 1928c: 97–98; Nunberg 1971: 62–63; Schedl 1948f: 274, 1979c: 253; Terra 1987: 25–26; Wood, S. L. 1982b: 803.

***usagaricus* (Eggers)** 1922b: 172 (*Xyleborus*). Holotype ♀; S.O. Usagara, Deutsch-Ostafrika; Methner Collection.
Figures: Nunberg 1963b:pls. 13, 19, 1978: 112, 117, Schedl 1962j: 569.
Distribution: Africa (Angola/ Ghana/ Ivory Coast/ Tanzania/ Uganda/ Zaire/ Zambia/ Zimbabwe).
Hosts: *Anthonotha macrophylla*, *Antrocaryon micraster*, *Celtis* spp., *Cinchona* sp., *Drypetes leonensis*, *Macrolobium* sp., *Maesopsis eminii*, *Pentaclethra macrophylla*, *Pentadesma lebrunii*, *Solanum aculeastrum*.
References: (**hb**) Loyttyniemi, Beaver, & Loyttyniemi 1984. (**ds**) Beaver & Loyttyniemi 1985a: 70; Browne 1975b: 394; Ferreira 1965: 1126; Schedl 1959p: 22, 1962h: 61, 1962j: 566, 1962k: 1105, 1964e: 69; Wichmann 1954: 522. (**tx**) Beaver & Loyttyniemi 1985a: 70; Eggers 1922b: 172, 1924: 108–109, 1943c: 66; Nunberg 1978: 117; Schedl 1939g: 172, 1950d: 8, 1953g: 246, 1957d: 84, 1961i: 228, 1962j: 566–567.

usagaricus subadjunctus Schedl 1950d: 28 (*Xyleborus*). Holotype ♀; S. Rhodesia: Salisbury; BMNH, London. Synonymy: Wood 1989: 171.
Notes: (1) Browne 1961h: 50 treated this name in *Premnobius* where it probably does not belong.
References: (**tx**) Schedl 1950d: 28, 1962j: 570; Wood, S. L. 1989: 171.

hendrickxi Schedl 1953g: 245 (*Streptocranus*). Lectotype ♀; Congo Belge, Kivu, Mulungu; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 116. Synonymy: Wood 1989: 171.
References: (**ds**) Gardner 1957a: 33; Schedl 1962j: 568. (**tx**) Schedl 1953g: 245–246, 1957d: 113–114, 1962j: 568, 1979c: 116; Wood, S. L. 1989: 171.

monticolus Schedl 1957d: 113 (*Xyleborus*). Holotype ♀; Congo Belge: Kivu, Hembe-Bitale; MRCB, Tervuren. Synonymy: Wood 1989: 171.
References: (**hb**) Schedl 1962j: 569. (**ds**)

Schedl 1962j: 569. (**tx**) Nunberg 1963b: 39, pl. 19; Schedl 1957d: 113–114, 1962j: 569, 1979c: 159; Wood, S. L. 1989: 171.

fallaciosus Schedl 1957d: 114 (*Xyleborus*). Holotype ♀; Congo Belge: Yangambi; MRCB, Tervuren. Synonymy: Wood 1989: 171.

References: (**hb**) Schedl 1962j: 567. (**ds**) Schedl 1962j: 567. (**tx**) Nunberg 1963b: 31, pl. 13, 1978: 112; Schedl 1957d: 113–115, 1962j: 567, 1979c: 95; Wood, S. L. 1989: 171.

usagaricus hembebitalei Schedl 1962j: 567 (*Xyleborus*). Holotype ♀; Congo Belge: Hembe-Bitale; Schedl Collection in NHMW, Wien.

Notes: (1) Because most of Schedl's subspecies are no more than aberrations, the status of this name is doubtful.

References: (**tx**) Schedl 1962j: 567, 1979c: 262.

***vespatorius* (Schedl)** 1931c: 342 (*Xyleborus*). Holotype ♀; San Ignacio, Argentina; Schedl Collection in NHMW, Wien.

Figures: Nunberg 1978: 117, Terra 1987: 24.

Distribution: Antilles Islands (Trinidad), North America (Costa Rica/ Guatemala/ Veracruz in Mexico), South America (Argentina/ Brazil/ Colombia/ Venezuela).

Hosts: *Hevea brasiliensis*, *Theobroma cacao*.

Notes: (3) Declivital denticles of the holotype were chewed off by siblings, thus making identification difficult.

References: (**hb**) Wood, S. L. 1982b: 800. (**ds**) Atkinson & Equihua 1986a: 421; Blackwelder 1947: 780; Nunberg 1971: 58; Terra 1987: 22; Wood, S. L. 1982b: 800. (**tx**) Nunberg 1978: 117–118; Schedl 1931c: 342–343, 1979c: 266; Terra 1987: 22, 24; Wood, S. L. 1972e: 200, 1982b: 800.

emarginatus Hopkins 1915b: 53. Holotype ♀; Livingston, Guatemala; USNM, Washington, preoccupied by Eichhoff 1878.

Notes: (1) Schedl 1952k: 163 transferred this species to *Xyleborus* and regarded it as a junior homonym; consequently, it must be rejected under Article 59C of the Code.

References: (**ds**) Blackwelder 1947: 779. (**tx**) Hopkins 1915b: 53; Schedl 1952k: 162–163; Wood, S. L. 1972e: 200.

corniculatus Schedl 1948f: 275 (*Xyleborus*). Holotype ♀; Sta. Catharina, Brazil; Schedl Collection in NHMW, Wien. Synonymy: Wood 1972e: 200.

Notes: (3) Schedl 1961i: 228 (described male).

References: (**ds**) Steinhausen 1956: 48. (**tx**) Schedl 1948f: 275, 1952k: 162–163, 1961i: 228, 1979c: 65; Steinhausen 1956: 48; Wood, S. L. 1961c: 2, 1972e: 200.

corniculatulus Schedl 1948f: 275 (*Xyleborus*). Holotype ♀; Trinidad; Schedl Collection in NHMW, Wien. Synonymy: Wood 1972e: 200.

References: (**cn**) Iton 1960: 461. (**ec**) Iton 1960: 461. (**ds**) Schedl 1960g: 76, 1966f: 78; Wood, S. L. 1961c: 2. (**tx**) Schedl 1948f: 275, 1961a: 529, 1961i: 228, 1979c: 65; Wood, S. L. 1972e: 200.

Genus *Arixyleborus* Hopkins

ARIXYLEBORUS HOPKINS 1915b: 59. Type-species: *Arixyleborus rugosipes* Hopkins, original designation.

Xyleboricus Eggers 1923a: 212. Type-species: *Xyleboricus canaliculatus* Eggers, subsequent designation by Schedl 1936h: 64. Synonymy: Schedl 1952k: 162.

References: (**tx**) Eggers 1923a: 212; Schedl 1936h: 64, 1939e: 349, 1952k: 162.

References: (**ay**) Nobuchi 1969a: 64. (**hb**) Browne 1961c: 178–179; Wood, S. L. 1986a: 83. (**ds**) Schedl 1966b: 43; Wood, S. L. 1986a: 83. (**tx**) Browne 1962c: 201–220, 1963c: 53–59; Hopkins 1915b: 10, 59; Schedl 1952k: 161, 1962n: 697–699; Wood, S. L. 1986a: 83.

***abruptus* Schedl** 1975f: 358. Holotype ♀; Upper Manki logging area, Bulolo, Morobe District, New Guinea; Schedl Collection in NHMW, Wien.

Distribution: New Guinea.

References: (**tx**) Schedl 1975f: 358, 1979c: 9.

***camphorae* (Eggers)** 1936d: 634 (*Webbia*). Holotype ♀; Johore, Kluang; BMNH, London.

Distribution: Asia (Malaya).

Hosts: *Cinnamomum camphora*.

Notes: (3) Browne 1955: 351 (treated as a synonym of *rugosipes* Hopkins).

References: (**ds**) Beeson 1961: 301; Kalshoven 1959: 168; Schedl 1959a: 492. (**tx**) Browne 1955: 351; Eggers 1936d: 634–635; Schedl 1950g: 895, 1958k: 145, 1979c: 51.

***canaliculatus* (Eggers)** 1923a: 216 (*Xyleboricus*). Lectotype ♀; Neu Guinea S.E., Paumomu riv.; USNM, Washington, designated by Anderson & Anderson 1971: 8.

Figures: Nobuchi 1978a:pl. 1.

Distribution: Asia (Bengal in India), New Britain Island, New Guinea.

Hosts: *Castanopsis* sp.

References: (**bv**) Gray, B. 1974c. (**cn**) Wylie & Shanahan 1975. (**hb**) Gray, B. 1974c; Wylie & Shanahan 1975. (**ds**) Beeson 1938b: 291; Nunberg 1961b: 610; Schedl 1936g: 534, 1958k: 145, 1962i: 72, 1968c: 263, 1969e: 156. (**tx**) Anderson, W. H. & Anderson 1971: 8; Eggers 1923a: 216, 1927c: 106; Schedl 1936g: 534, 1936h: 62–64, 1940b: 434, 1942c: 163, 1942d: 27, 1951i: 51, 1952k: 162, 1955b: 297, 1958k: 145; Wylie & Yule 1977.

subsimilis Schedl 1970b: 362. Holotype ♀; Lolobau, New Britain to Tokyo (Japan), imported; PPST, Tokyo. Synonymy: Wood 1989: 170.

References: (**ds**) Browne 1984c: 449; Nobuchi 1978a: 8; Ohno, Yoneyama, & Nakazawa 1987: 95; Ohno, Yoskioka, Yoneyama, & Nakazawa

1988a: 92; Ohno, Yoskioka, Uchida, Yoneyama, & Tsukamoto 1989: 60. (**tx**) Nobuchi 1978a:pl. 1, 1983: 302; Schedl 1970b: 362, 1979c: 244; Wood, S. L. 1989: 170.

***cariniceps* Schedl** 1975f: 358. Holotype ♀; Wewak, Timbers Sawmill, E. Sepik Dist. [New Guinea]; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
Hosts: *Dracondomerum* sp.
References: (**tx**) Schedl 1975f: 358, 1979c: 53.

***castaneae* Schedl** 1958k: 146. Syntypes ♀; Java, Stapelplaats Bandung; RNH, Leiden, and Schedl Collection in NHMW, Wien.
Distribution: Indonesia (Borneo, Java).
Hosts: *Castanea argentea*.
References: (**hb**) Kalshoven 1959c: 169. (**ds**) Kalshoven 1959c: 169; Schedl 1965g: 23. (**tx**) Schedl 1958k: 146, 1965g: 23, 1979c: 54.

***confinis* (Eggers)** 1927c: 106 (*Webbia*). Holotype ♀; Philippinen: Mindanao, Lanao Prov., Kolambugan; USNM, Washington.
Distribution: Philippine Islands (Mindanao).
References: (**ds**) Schedl 1966b: 43. (**tx**) Anderson, W. H. & Anderson 1971: 9; Eggers 1927c: 106; Nobuchi 1983: 301; Schedl 1936h: 62, 64, 1958k: 145.

***deceptus* Schedl** 1979g: 103. Holotype ♀; New Guinea: NE, Wau, Golden Ridge; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1979g: 103.

***dipterocarpi* Browne** 1981a: 133. Holotype ♀; Bislig (Philippines) to Nagoya (Japan), imported; BMNH, London.
Distribution: Philippine Islands.
Hosts: *Dipterocarpus* sp.
References: (**tx**) Browne 1981a: 133; Eggers 1936e: 86; Nobuchi 1983: 301.

***dissimilis* (Eggers)** 1923a: 214 (*Xyleboricus*). Holotype ♀; Sipora (Sereinu) auf der Insel Mentawei; MCG, Genova.
Distribution: Indonesia (Mentawei).
References: (**tx**) Eggers 1923a: 214; Schedl 1936h: 64, 1958k: 145.

***fuliginosus* (Eggers)** 1923a: 205 (*Xyleborus*). Syntypes 2 ♀; G. Kenepai (Podok, Borneo), und Muara Sako (Sumatra); RNH, Leiden, and Eggers Collection (USNM, Washington or NHMW, Wien?).
Distribution: Indonesia (Borneo, Sumatra).
References: (**tx**) Browne 1955: 350; Eggers 1923a: 205–206; Schedl 1958k: 145.

***gedeanus* (Schedl)** 1942d: 26 (*Xyleboricus*). Lectotype ♀; Java: Mount Gede, 800 m; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 103.
Distribution: Indonesia (Java).
References: (**hb**) Kalshoven 1959c: 168. (**ds**) Kalshoven 1959c: 168. (**tx**) Schedl 1942d: 26–27, 1958k: 145, 1979c: 103.

***grandis* (Schedl)** 1942d: 27 (*Xyleboricus*). Lectotype ♀; Buitenzorg, Java; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 108.
Distribution: Indonesia (Borneo, Java).
Hosts: *Palaquium* sp.
Notes: (3) Schedl 1971c: 375 (described male).
References: (**hb**) Kalshoven 1958a: 186, 1959c: 167. (**ds**) Browne 1979c: 108; Kalshoven 1958a: 186, 1959c: 167; Ohno, Yoneyama, & Nakazawa 1987a: 89; Schedl 1971c: 368. (**tx**) Browne 1960: 202; Schedl 1942d: 27, 1971c: 375, 1979c: 108.

***granifer* (Eichhoff)** 1878b: 502 (*Xyleborus*). Syntypes ♀; Hindostan (Birma); Hamburg Museum, lost.
Distribution: Asia (Burma/ Bengal in India/ Malaya), Indonesia (Borneo).
Hosts: *Castinopsis* sp., *Dryobalanops* sp., *Eugenia* sp., *Koompassia* sp., *Pasania* sp., *Shorea ovalis*, *S.* sp.
Notes: (1) Browne 1955: 350 (to *Arixyleborus*).
References: (**hb**) Browne 1961c: 179. (**ds**) Browne 1961c: 179, 1962c: 202, 1985b: 290; Hagedorn 1910d: 105; Kleine 1913b: 160, 1914b: 278; Nobuchi 1978a: 9; Ohno, Yoneyama, & Nakazawa 1987a: 89; Schedl 1936d: 3, 1964c: 304. (**tx**) Browne 1955: 350, 1960: 202; Eggers 1923a: 205–207, 1925: 159; Eichhoff 1878a: 391, 1878b: 502; Hagedorn 1910a: 154; Nobuchi 1978a:pl. 1; Schedl 1936d: 3, 1939e: 331, 1955b: 303, 1958k: 145.

granifer borneensis Schedl 1965g: 27. Holotype ♀; O. Borneo, Pajau River and Mt. Tibang, 1400 m; NHR, Stockholm.
References: (**ds**) Schedl 1965g: 23. (**tx**) Schedl 1965g: 27, 1979c: 109.

***granulicauda* Schedl** 1975f: 359. Holotype ♀; Upper Manki logging area, Bulolo, Morobe Distr., New Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1975f: 359, 1979c: 111.

***granulifer* (Eggers)** 1923a: 206 (*Xyleborus*). Lectotype ♀; Sinabang auf Simalur, einer Nebeninsel Sumatras; USNM, Washington, designated by Anderson & Anderson 1971: 14.
Figures: Nobuchi 1978a:pl. 1.
Distribution: Asia (Burma/ Bengal in India/ Malaya/ Sri Lanka), Indonesia (Borneo, Mentawei, Sumatra), Philippine Islands.
Hosts: *Castanopsis* sp., *Dipterocarpus zeylanicus*, *Koompassia excelsa*, *Myristica dactylioides*, *Shorea leprosula*, *S. ovalis*.
Notes: (3) Schedl 1969a: 211 (described male).
References: (**cn**) Mathur & Singh 1960b: 84. (**hb**) Browne 1936a, 1961c: 180. (**ds**) Browne 1936a, 1961c: 180, 1962c: 202, 1980b: 381; Choo, Woo, & Kim 1981: 200; Mathur & Singh 1960b: 84; Nobuchi 1978a: 10, 1980a; Ohno, Yoneyama, & Nakazawa 1982a: 4, 1982b: 9, 1987a: 89; Schedl

1936d: 3, 1959a: 491, 1966g: 31, 1969a: 204, 1971a: 276, 1971f: 146. (**tx**) Anderson, W. H. & Anderson 1971: 14; Browne 1955: 350, 1960: 202; Eggers 1923a: 206–207, 1940d: 147; Nobuchi 1978a:pl. 1; Nunberg 1959a: 426, 1983: 301; Schedl 1936d: 3, 1953c: 290, 1958k: 145, 1959a: 491, 1969a: 211, 1979c: 111.

***guttifer* (Schedl)** 1955b: 297 (*Xyleboricus*). Holotype ♀; New Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1955b: 280, 297, 1958k: 145, 1979c: 114.

***hirsutulus* Schedl** 1969a: 212. Holotype ♀; Philippine Islands, Linek to Tokyo (Japan), imported; PPST, Tokyo.
Figures: Nobuchi 1978a:pl. 1.
Distribution: Philippine Islands.
Hosts: Lauan log.
References: (**ds**) Nobuchi 1978a: 10, 1980a; Ohno, Yoneyama, & Nakazawa 1987a: 89, 1987b: 95. (**tx**) Nobuchi 1978a:pl. 1, 1983: 302; Schedl 1969a: 212, 1979c: 117.

***hirtipennis* (Eggers)** 1940d: 146 (*Xyleborus*). Holotype ♀; Java (Batoerraden); F. C. Drescher Collection.
Distribution: Indonesia (Borneo, Java).
Notes: (1) Browne 1955: 350 (to *Arixyleborus*).
References: (**ds**) Schedl 1965g: 24. (**tx**) Browne 1955: 350; Eggers 1940d: 146, Schedl 1951i: 44, 1958k: 145, 1965g: 24, 1979c: 118.

***imitator* (Eggers)** 1927c: 105 (*Webbia*). Holotype ♀; Philippinen: Masbate, Aroroy; USNM, Washington.
Figures: Nobuchi 1978a:pl. 1.
Distribution: Philippine Islands.
Notes: (1) Schedl 1936h: 64 (to *Arixyleborus*).
References: (**ds**) Nobuchi 1978a: 8; Ohno, Yoneyama, & Nakazawa 1987a: 89, 1987b: 95; Schedl 1938g: 426, 1966b: 43, 1966g: 31. (**tx**) Anderson, W. H. & Anderson 1971: 15; Eggers 1927c: 105, 1936d: 634; Nobuchi 1978a:pl. 1, 1983: 302; Schedl 1936h: 62, 64, 1938g: 426, 1958k: 145, 1966g: 38, 1979c: 121.

granistriatus Eggers 1940d: 147 (*Xyleborus*). Holotype ♀; Java (Batoerraden, G. Slamet); Eggers Collection, in NHMW, Wien. Synonymy: Wood 1989: 170.
References: (**tx**) Browne 1955: 350; Eggers 1940d: 147; Schedl 1958k: 145, 1979c: 110; Wood, S. L. 1989: 170.

***iriani* Browne** 1983a: 560. Holotype ♀; Misool Island (West Irian) to Nagoya (Japan), imported; BMNH, London.
Distribution: New Guinea.
Hosts: Amugis log.
References: (**ds**) Browne 1986b: 333; Ohno, Yoneyama, & Nakazawa 1987b: 95. (**tx**) Browne 1983a: 560.

***leprosulus* Schedl** 1953c: 300. Lectotype ♀; Selangor Kepong, Malaya; Schedl Collection in NHMW, Wein, designated by Schedl 1979c: 138.
Figures: Nunberg 1961b: 629.
Distribution: Asia (Malaya).
Hosts: *Aralidium pinnatifolium*, *Castanopsis megacarpa*, *C. sumatrana*, *Dryobalanops oblongifolia*, *Shorea leprosula*.
References: (**hb**) Browne 1936a, 1961c: 182. (**ds**) Browne 1936a, 1961c: 182. (**tx**) Nunberg 1961b: 619; Schedl 1953c: 300, 1958k: 145, 1962n: 699, 1979c: 138.

aralidii Nunberg 1961b: 618. Holotype ♀; Malay Peninsula, Kelantan; BMNH, London. Synonymy: Schedl 1962n: 699, Wood 1989: 170.
References: (**tx**) Nunberg 1961b: 618, 629; Schedl 1962n: 699; Wood, S. L. 1989: 170.

***magnus* Browne** 1985a: 192. Holotype ♀; Barton (Palawan, Philippines) to Nagoya (Japan), imported; BMNH, London.
Distribution: Philippine Islands (Palawan).
References: (**ds**) Ohno, Yoneyama, & Nakazawa 1987a: 89. (**tx**) Browne 1985a: 192.

***malayensis* (Schedl)** 1954a: 150 (*Xyleboricus*). Lectotype ♂; Java, Batoerraden, Mount Slamet; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 147.
Distribution: Asia (India/ Malaya/ Sri Lanka/ Vietnam), Indonesia (Java, Sumatra).
Hosts: *Albizzia lebbeck*, *Canarium commune*, *Dryobalanops oblongifolia*, *Eugenia* spp., *Myristica fragrans*, *Swietenia mahagoni*, *Vatica lanceaefolia*.
Notes: (1) Schedl 1952k: 161 (to *Arixyleborus*). (3) Schedl 1936h: 64, 1979c: 149 (*marginatus* Eggers 1938, nomen nudum, no status).
References: (**hb**) Beaver & Browne 1978: 582; Kalshoven 1959c: 168. (**ds**) Beaver & Browne 1978: 582; Browne 1961c: 182; Kalshoven 1959c: 168; Schedl 1959a: 491, 1969a: 52, 1974c: 262. (**tx**) Schedl 1936h: 64, 1951i: 41, 1952k: 161, 1953c: 290, 300, 1954a: 144, 150, 1958k: 144–147, 1959a: 491, 1979c: 146.

***mediosectus* (Eggers)** 1923a: 215 (*Xyleboricus*). Holotype ♀; Sinabang, Insel Simalur (sudlich Sumatra); RNH, Leiden.
Figures: Nobuchi 1978a:pl. 1.
Distribution: Asia (Burma/ Cambodia/ Andaman Islands, Assam in India/ Malaya/ Sri Lanka/ Vietnam), Indonesia (Sumatra).
Hosts: *Balanocarpus heimii*, *Canarium euphyllum*, *Dipterocarpus pilosus*, *D. turbinatus*, *D. zeylanicus*.
References: (**ds**) Beaver & Browne 1978: 582; Beeson 1961: 301; Browne 1961c: 182, 1968a: 132–133, 1980c: 483, 1980d: 490; Nobuchi 1978a: 8; Ohno, Yoneyama, & Nakazawa 1987a: 89; Schedl 1959a: 492, 1959c: 167, 1969a: 205. (**tx**) Eggers 1923a: 215, 1925: 154, 1936a: 91, 1940d: 134; Nobuchi 1978a:pl. 1; Ohno, Yone-

yama, & Nakazawa 1982b: 9; Schedl 1936h: 62, 64, 1942a: 183, 1958k: 145, 1959a: 492, 1959c: 167.

angulatus Schedl 1942a: 183 (*Xyleboricus*). Lectotype ♀; Malaya, Selangor, Buloh Forest Reserve; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 20. Synonymy: Wood 1989: 170.

References: (**ds**) Browne 1961c: 182. (**tx**) Schedl 1942a: 183, 1958k: 145, 1979c: 20; Wood, S. L. 1989: 170.

***medius* (Eggers)** 1927c: 104 (*Webbia*). Lectotype ♀; Philippinen: Mindanao, Provinz Lanao, Kolambugan; USNM, Washington, designated by Anderson & Anderson 1971: 20.

Distribution: Asia (Andaman Islands in India/ Malaya/ Sri Lanka/ Vietnam), Indonesia (Borneo, Java, Sumatra), Philippine Islands (Mindoro, Negros).

Hosts: *Canarium euphyllum*, *Diospyros* sp., *Dipterocarpus* spp., *Doonia zeylanica*, *Hopea adorata*, *Shorea* spp., *Sterculia* spp., *Terminalia bralata*.

Notes: (1) Schedl 1936h: 64 (to *Xyleboricus*, =*Arixyleborus*). Specimens reported from mainland SE Asia as *rugosipes* are actually this species (SLW).

References: (**cn**) Browne 1949e; Mathur & Singh 1960b: 57, 1961a: 36; Yunus & Hua 1980: 230. (**ds**) Beeson 1961: 301; Kalshoven 1959: 168; Mathur & Singh 1960b: 57, 1961a: 36; Schedl 1936d: 2, 1936j: 19; Yunus & Hua 1980: 230. (**tx**) Anderson, W. H. & Anderson 1971: 20; Eggers 1927c: 104–105; Schedl 1936g: 2, 1936h: 62, 64, 1939e: 333, 1942a: 170, 1942d: 26, 1950f: 43, 1950g: 895, 1952k: 162, 1958i: 215, 1958k: 145, 1959a: 492, 1979c: 151.

***minor* (Eggers)** 1940d: 134 (*Xyleboricus*). Holotype ♀; Java (Kediri); Kalshoven Collection [ZMA, Amsterdam or Buitenzorg?], allotype (cotype) Eggers Collection, in NHMW, Wien.

Distribution: Asia (Malaya), Indonesia (Java).

Hosts: *Castanea tumggurut*, *Dalbergia* sp., *Dryobalanops oblongifolia*, *Palaquium maingayi*, *Shorea balanocarpoides*, *S. leprosula*.

Notes: (3) Schedl 1942d: 26 (described male).

References: (**hb**) Browne 1961c: 183; Kalshoven 1959c: 169. (**ds**) Browne 1961c: 183, 1983a: 555; Kalshoven 1959c: 169. (**tx**) Eggers 1940d: 134; Schedl 1936h: 62, 64, 1942d: 26, 1953c: 290, 1958k: 145, 1979c: 155.

***moestus* (Eggers)** 1930d: 189 (*Xyleborus*). Holotype ♀; Assam: Shilong (6,000′); FRI, Dehra Dun.

Distribution: Asia (Assam, Bengal in India).

Hosts: *Quercus lamellosa*.

References: (**ds**) Beeson 1930: 249. (**tx**) Beeson 1930: 73, 249; Browne 1955: 350; Eggers 1930d: 189–190; Schedl 1958k: 145, 1979c: 157.

***morio* (Eggers)** 1923a: 207 (*Xyleborus*). Lectotype ♀; Neu Guinea: Kaiserin Augustafluss; USNM, Washington, designated by Anderson & Anderson 1971: 21.

Distribution: New Guinea.

Notes: (1) Browne 1955: 350 (to *Arixyleborus*).

References: (**bv**) Gray, B. 1974c. (**hb**) Browne 1958c: 350; Gray, B. 1974c. (**ds**) Schedl 1969e: 156. (**tx**) Anderson, W. H. & Anderson 1971: 21; Browne 1955: 350; Eggers 1923a: 207, 1930d: 189; Schedl 1940b: 434–435, 1951i: 51, 1958k: 145.

***okadai* Browne** 1985b: 293. Holotype ♀; Taliabu Island (Moluccas) to Nagoya (Japan), imported; BMNH, London.

Distribution: Indonesia (Moluccas Islands).

Hosts: *Shorea* sp.

References: (**ds**) Ohno, Yoneyama, & Nakazawa 1987b: 95. (**tx**) Browne 1985b: 293.

***orbiculatus* (Eggers)** 1923a: 213 (*Xyleboricus*). Syntypes 2 ♀; Sinabang, Insel Simalur (sudlich Sumatra; 1 in RNH, Leiden, 1 in MCG, Genova.

Distribution: Indonesia (Simalur Island near Sumatra).

References: (**tx**) Browne 1963c: 57; Eggers 1923a: 213–214; Schedl 1936h: 64, 1958k: 145.

***pilosus* (Eggers)** 1923a: 207 (*Xyleborus*). Holotype ♀; Sumatra; MCG, Genova.

Distribution: Indonesia (Sumatra).

References: (**tx**) Browne 1955: 350; Eggers 1923a: 207, 1940d: 146; Schedl 1958k: 145.

***puberulus* (Blandford)** 1896b: 215 (*Xyleborus*). Holotype ♀; Sarawak, Borneo; BMNH, London.

Distribution: Indonesia (Borneo).

Notes: (1) Browne 1955: 351 (to *Arixyleborus*).

References: (**ds**) Browne 1981b: 598; Hagedorn 1910d: 109; Kleine 1913b: 162. (**tx**) Blandford 1896b: 215; Browne 1955: 351; Hagedorn 1910a: 156; Schedl 1958k: 145.

***pusillus* (Eggers)** 1927c: 108 (*Webbia*). Lectotype ♀; Philippinen: Luzon, Provinz Mountain, Balbalan; USNM, Washington, designated by Anderson & Anderson 1971: 27.

Distribution: Philippine Islands.

References: (**ds**) Schedl 1966b: 44. (**tx**) Anderson, W. H. & Anderson 1971: 27; Eggers 1927c: 108; Nobuchi 1983: 302; Schedl 1936h: 62, 64, 1958k: 145.

***rugosipes* Hopkins** 1915b: 59. Holotype ♀; Pagbilao, Philippine Islands; USNM, Washington.

Distribution: Philippine Islands.

Hosts: *Dipterocarpus grandiflorus*.

References: (**cn**) Ishikura 1966. (**ec**) Browne 1958b. (**hb**) Beaver & Browne 1978: 582; Browne 1958b: 350, 1961c: 181. (**ds**) Bain 1974: 16; Beaver & Browne 1978: 582; Browne 1961c: 181, 1962c: 202, 1968a: 133; Choo, Woo, & Kim 1981: 201; Ishikura 1966; Kleine 1934a: 178; Nobuchi 1978a: 9, 1980; Ohno, Yoneyama, & Nakazawa

1987a: 89, 1987b: 95; Schedl 1959a: 492, 1959c: 167, 1966b: 44, 1966g: 31, 1971a: 276, 1971c: 364, 1972a: 144. (**tx**) Browne 1955: 351, 1962c: 202, 207, 1968a: 132; Hopkins 1915b: 59; Kalshoven 1959c: 168; Nobuchi 1978a:pl.1, 1983: 301; Ohno, Yoneyama, & Nakazawa 1982b: 9; Schedl 1952k: 161–162, 1958k: 145, 1959a: 492, 1959c: 167, 1965g: 22, 1966g: 38; Wylie & Shanahan 1977.

***scabripennis* (Blandford)** 1896b: 216 (*Xyleborus*). Holotype ♀; Sarawak, Borneo; BMNH, London.
Distribution: Asia (Malaya/ Sri Lanka), Indonesia (Borneo, Java, Sumatra).
Hosts: *Eugenia* sp., *Eupatorium pallescens*, *Ficus* sp., *Hopea ferrea*, *Melanorrhoea* sp., *Palaquium gutta*, *Rhodamnia trinervis*, *Shorea* spp.
References: (**cn**) Yunus & Hua 1980: 230. (**hb**) Beaver & Browne 1978: 583; Browne 1961c: 180; Kalshoven 1959a: 169. (**ds**) Beaver & Browne 1978: 583; Browne 1961c: 180, 1965a: 178, 1980b: 381; Hagedorn 1910d: 110; Kalshoven 1959c: 169; Kleine 1913b: 162, 1914b: 289; Ohno, Yoneyama, & Nakazawa 1987b: 95; Sampson 1919: 111; Schedl 1936d: 4, 1936j: 20, 1959a: 492. (**tx**) Blandford 1986b: 216; Browne 1955: 351; Eggers 1923a: 205–207, 1930d: 189; Hagedorn 1910a: 156; Sampson 1919: 111; Schedl 1936d: 4, 1936j: 20, 1942a: 171, 1942d: 6, 1951i: 44, 77, 1954a: 142, 1958k: 145, 1959a: 492, 1979c: 221.

***seminitens* (Blandford)** 1895a: 322 (*Xyleborus*). Syntypes 2 ♀; Ceylon; 1 in BMNH, London.
Distribution: Asia (Sri Lanka).
Hosts: *Calophyllum walkeri*.
References: (**ds**) Beeson 1961: 309; Hagedorn 1910d: 110; Kleine 1913b: 162, 1914b: 274; Schedl 1959a: 511. (**tx**) Blandford 1895a: 322; Hagedorn 1910a: 156; Schedl 1959a: 511.

***sublaevis* (Eggers)** 1927c: 104 (*Webbia*). Holotype ♀; Philippinen: Mindanao, Provinz Surigao, Surigao; USNM, Washington.
Distribution: Philippine Islands (Mindanao).
Notes: (1) Schedl 1936h: 64 (to *Xyleboricus*, =*Arixyleborus*).
References: (**ds**) Schedl 1966b: 44. (**tx**) Anderson, W. H. & Anderson 1971: 32; Eggers 1927c: 104; Nobuchi 1983: 302; Schedl 1936h: 62, 64, 1958k: 145.

***sus* (Schedl)** 1973e: 93 (*Xyleborus*). Holotype ♀; Sudost Neu Guinea, Moroka, Loria; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
Hosts: *Castanopsis accuminatissima*.
References: (**tx**) Schedl 1973e: 93, 1979c: 247.
varicus Schedl 1975f: 360. Holotype ♀; Upper Manki logging area, Bulolo, Morobe District, New Guinea; Schedl Collection in NHMW, Wien. Synonymy: Schedl 1979g: 96.
References: (**tx**) Schedl 1975f: 360, 1979c: 264, 1979g: 96.

***suturalis* (Eggers)** 1936e: 91 (*Xyleboricus*). Holotype ♀; Java (Kediri); Buitenzorg Collection, Java.
Distribution: Asia (Malaya), Indonesia (Borneo, Java).
Hosts: *Adenanthera pavonina*, *Castanopsis sumatrana*, *Dipterocarpus baudii*, *Dryobalanops oblongifolia*, *Elaeocarpus petiolatus*, *Eugenia* sp., *Fagraea fragrans*, *Grewia* sp., *Nephelium* sp., *Palaquium maingayi*, *Shorea balanocarpoides*, *S. leprosula*, *S. macroptera*, *Swietenia macrophylla*.
References: (**ec**) Browne 1958b. (**hb**) Browne 1958b, 1961c: 182; Kalshoven 1959c: 169. (**ds**) Beaver & Browne 1978: 583; Browne 1961c: 182, 1962c: 202, 1980d: 492; Eggers 1936e: 91; Kalshoven 1959c: 169; Schedl 1971c: 364. (**tx**) Browne 1962c: 207, 1963c: 57, 1972b: 27, fig.3; Eggers 1936e: 91; Schedl 1942d: 5, 1953c: 290, 1979c: 248.

***talauricus* (Eggers)** 1923a: 214 (*Xyleboricus*). Lectotype ♀; Talaur Inseln (zwischen Philippinen und Celebes); USNM, Washington, designated by Anderson & Anderson 1971: 33.
Distribution: Talaud Island S of Philippine Islands.
Notes: (1) Eggers 1927b: 391 (name originally spelled *talauticus*, lapsus calami, corrected; type locality in original publication given as Talaut, but corrected by Eggers in Beeson reprint to Talaur).
References: (**hb**) Browne 1961c: 187–188. (**ds**) Schedl 1936d: 5. (**tx**) Anderson, W. H. & Anderson 1971: 33; Eggers 1923a: 214, 1927b: 391; Schedl 1936d: 5, 1936h: 62–63, 1942a: 170, 1952k: 162, 1960i: 112, 1979c: 249.

***trux* Schedl** 1975f: 359. Holotype ♀; Upper Manki logging area, Bulolo, Morobe District, New Guinea; Schedl Collection in NHMW, Wien.
Notes: (3) This appears to be a synonym of *minor*; types compared (DEB).
Distribution: New Guinea.
References: (**tx**) Schedl 1975f: 359, 1979c: 257.

***tuberculatus* (Eggers)** 1940d: 133 (*Xyleboricus*). Holotype ♀; Java (Kediri); Kalshoven Collection [ZMA, Amsterdam or Buitenzorg?; 2 cotypes in Eggers Collection, in NHMW, Wien].
Distribution: Indonesia (Java, Sumatra).
Hosts: *Cinchona* sp., *Dalbergia* sp., *Parkia speciosa*.
References: (**hb**) Kalshoven 1959c: 169. (**ds**) Kalshoven 1959c: 169. (**tx**) Eggers 1940d: 133–134; Schedl 1936h: 64, 1958k: 145.

***yakushimanus* (Murayama)** 1955: 83 (*Xyleborus*). Holotype ♀; Japan: Miyanoura, Yakushima, Kagoshima pref., 0–50 m; Murayama Collection in USNM, Washington.
Figures: Yin & Huang 1981b: 569, Yin, Huang, & Li 1984: 161.
Distribution: Asia (Fujian, Sichuan, Xizang [Tibet] in China/ Japan).
Notes: (1) Nobuchi 1985c: 28 (to *Arixyleborus*).
References: (**ds**) Murayama 1955: 83; Nobuchi

1985c: 28; Yin & Huang 1981: 569. (**tx**) Murayama 1955: 83; Yin & Huang 1981b: 569; Yin, Huang, & Li 1984: 161.

Genus *Ambrosiodmus* Hopkins

AMBROSIODMUS HOPKINS 1915b: 55. Type-species: *Xyleborus tachygraphus* Zimmermann, original designation.

Phloeotrogus Motschulsky 1863: 512. Type-species: *Phloeotrogus obliquecaudata* Motschulsky, subsequent designation by Hopkins 1914: 127, name rejected by Plenary Powers in ICZN 1979: 151. Synonymy: Wood 1966: 83.

References: (**hb**) Wood, S. L. 1986a: 83. (**ds**) Wood, S. L. 1986a: 83. (**tx**) Arnett 1960: 1044; Motschulsky 1863: 512; Wood, S. L. 1986a: 83.

Brownia Nunberg 1963b: 37. Type-species: *Xyleborus illepidus* Schedl =*Pityophthorus obliquus* LeConte, original designation. Synonymy: Wood 1980c: 96.

References: (**tx**) Nunberg 1963b: 36–37; Wood, S. L. 1980c: 96.

Notes: (1) International Commission on Zoological Nomenclature [ICZN] 1979: 151 (the name *Phloeotrogus* rejected).

References: (**tx**) Beal & Massey 1945: 61, 147; Bright 1968b: 1288, 1296; Chamberlin 1939: 439–441; Hopkins 1915b: 10, 55–56; Wood, S. L. 1986a: 83.

***addendus* (Schedl)** 1964e: 70 (*Xyleborus*). Holotype ♀; Cote d'Ivoire, Foret du Banco; MNHN, Paris.

Figures: Nunberg 1963b: pl. 1.

Distribution: Africa (Ivory Coast).

References: (**tx**) Schedl 1964e: 70, 1979c: 11.

***adustus* (Eggers)** 1932d: 295 (Xyleborus). Holotype ♀; Congostaat (Haut-Uele, Abimva); MRCB, Tervuren.

Distribution: Africa (Zaire).

References: (**tx**) Eggers 1932d: 295–296; Nunberg 1963b: 8, pl. 1; Schedl 1962j: 171.

***aegir* (Eggers)** 1922b: 171 (*Xyleborus*). Syntypes ♀; Deutsch-Ostafrika; Hamburg Museum, lost, MNB, Berlin, and Eggers Collection (USNM, Washington or NHMW, Wien?).

Figures: Nunberg 1963b:pl. 2, Schedl 1962j:171.

Distribution: Africa (Burundi/ Cameroon/ Kenya/ Equatorial Guinea/ Liberia/ Nigeria/ Ruanda/ Tanzania/ Uganda/ Zaire), Madagascar.

Hosts: *Acacia* sp., *Beilschmiedia louisii*, *Cassia laevigata*, *Cinchona ledgeriana*, *Coffea* sp., *Entandrophragma* sp., *Eucalyptus* spp., *Grevillea* spp., *Hagenia* sp., *Irvingia grandifolia*, *Lippia* sp., *Pachystela* sp., *Persea americana*, *Veronia lasiopus*.

References: (**cn**) Ritchie 1935: 95–103. (**hb**) Schedl 1962j: 171. (**ds**) Browne 1973a: 281; Gardner 1957a: 32; Mayne & Donis 1962: 315; Roberts 1969: 129; Schedl 1938d: 451, 1962j: 171–172, 1965g: 20, 1965h: 112, 1967e: 215, 1969d: 6, 1970h: 180, 1971e: 4, 1977a: 130, 1982: 279; Wichmann 1954: 522. (**tx**) Eggers 1922b: 171, 1923a: 130, 181, 1932d: 297, 1935c: 309; Nunberg 1963b: 9–10, pl. 2; Powell, W. 1980: 29; Schedl 1937b: 402, 1948c: 665, 1950d: 8, 1952i: 16–17, 1952j: 2, 1953d: 69, 1955f: 260 1957d: 84, 1957e: 881, 1962j: 171–172, 1969i: 137, 1977b: 130, 1979c: 13.

holtzi Eggers 1922: 171 (*Xyleborus*). Holotype ♀; Aruscha (Deutsch-Ostafrika); Eggers Collection, in NHMW, Wien. Synonymy: Schedl 1962j: 172.

References: (**tx**) Eggers 1922b: 171; Schedl 1950d: 8, 1952i: 16, 1962j: 172, 1979c: 119.

scabridus Schedl 1952i: 16 (*Xyleborus*). Holotype ♀; Congo Belge: Kivu, Mulungu; MRCB, Tervuren. Synonymy: Schedl 1962j: 172.

References: (**ds**) Mayne & Donis 1962: 322; Schedl 1952i: 16, 1955f: 260, 1962j: 172, 1971g: 193. (**tx**) Schedl 1952i: 16, 1979c: 220.

***albizzianus* (Schedl)** 1950d: 30 (*Xyleborus*). Lectotype ♀; Congo Belge: Mulungu, Kivu; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 16.

Distribution: Africa (Ghana/ Ivory Coast/ Kenya/ Nigeria/ Ruanda/ Uganda/ Zaire).

Hosts: *Acacia* sp., *Acalypha* sp., *Acridocarpus* sp., *Albizzia gummifera*, *Baikiaea* sp., *Bosqueia* sp., *Celtis* sp., *Eucalyptus* sp., *Euphorbia teke*, *Hevea* sp., *Lasiodiscus* sp., *Teclea nobilis*.

References: (**cn**) Mayne & Donis 1951: 334; Thompson, G. H. 1960. (**ec**) Mayne & Donis 1951: 334. (**hb**) Loyttyniemi, Beaver, & Loyttyniemi 1984; Roberts 1969: 130. (**ds**) Beaver & Loyttyniemi 1985a: 68; Browne 1973a: 281, 1980c: 486; Gardner 1957a: 32; Mayne & Donis 1962: 315; Schedl 1962j: 174; Thompson, G. H. 1960, 1963: 70. (**tx**) Beaver & Loyttyniemi 1985a: 68; Schedl 1950d: 30, 1954e: 51, 1955i: 212, 1962j: 174, 1979c: 16.

***alsapanicus* (Schedl)** 1951i: 59 (*Xyleborus*). Syntypes ♀; Philippinen, Luzon, Vixcaya, Mt. Alsapan; Schedl Collection in NHMW, Wien.

Distribution: Philippine Islands.

Notes: (1) Schedl 1979c: 16 (citation of holotype invalid).

References: (**ds**) Schedl 1966b: 46. (**tx**) Nobuchi 1983: 302; Schedl 1951i: 59, 1979c: 16.

***anepotulus* (Eggers)** 1940d: 138 (*Xyleborus*). Holotype ♀; Java, Preanger (Tangkoeban Prahoe); Drescher Collection, cotype in Eggers Collection, in NHMW, Wien.

Distribution: Indonesia (Java).

References: (**hb**) Kalshoven 1959c: 137. (**ds**) Kalshoven 1959c: 137. (**tx**) Eggers 1939c: 119, 1940d: 138; Schedl 1951i: 43, 1952c: 65, 1954a: 138, 1979c: 20.

***apicalis* (Blandford)** 1894d: 105 (*Xyleborus*). Holotype ♀; Japan [without locality]; BMNH, London.

Figures: Nobuchi 1966d:pl. 4, Yin, Huang, & Li 1984:71.

Distribution: Asia (Bhutan/ Burma/ Anhui, Guangxi, Sichuan, Xizang [Tibet] in China/ Bengal in India/ Japan/ Korea).

Hosts: *Alnus hirsuta, A. japonica, A. siberica, Castanea crenata, Castanopsis* sp., *Ilex* sp., *Juglans* sp., *Machilus* sp., *Malus pumila, Pinus* sp., *Populus* sp., *Prunus* sp., *Quercus lamellosa, Schima* sp., *Symplocos* sp., *Ulmus* spp. *Vitis vinifera*.

References: (**cn**) Anonymous 1980g; Shiraki 1952; Yuasa 1935: 204. (**ds**) Anonymous 1980g; Cho 1955; Choo 1983: 103; Choo & Woo 1985: 166; Hagedorn 1910d: 99; Hill, D. S. 1987: 341; Kleine 1913b: 160, 1914b: 261, 277, 1934a: 172; Ko 1969: 283; Krivolutskaya & Kupyanskaya 1970; Murayama 1929b: 2, 1930b: 19, 1936a: 130, 1937b: 374, 1955: 104; Nobuchi 1966d: 26; Shiraki 1952; Yin & Huang 1981: 568; Yin, Huang, & Li 1984: 171; Yuasa 1935: 204. (**tx**) Blandford 1894d: 105; Choo 1983: 103; Eggers 1923a: 179; Hagedorn 1910a: 152; Murayama 1930b: 19–31, 1934c: 299, 1936a: 130, 1937b: 374, 1955: 104; Niisima 1909: 155, 1913a: 4; Nobuchi 1966d: 26, pl. 4, 1985c: 23; Nunberg 1959a: 414; Schedl 1934f: 1645; Yin & Huang 1981: 568–569. (**ms**) Mastumura 1931.

cristatus Hagedorn 1908: 377 (*Xyleborus*). Syntypes 3 ♀; Kurseong et Barway (Himalaya); IRSNB, Brussels, preoccupied by Fabricius 1801.

References: (**cn**) Mathur & Singh 1961a: 84; Roonwal 1954: 59. (**ds**) Beeson 1930: 55, 231, 1961: 303; Hagedorn 1910d: 101; Kleine 1913b: 160, 1934a: 173; Mathur & Singh 1961a: 84; Roonwal 1954: 59. (**tx**) Beeson 1930; Eggers 1923a: 179, 1930d: 180, 1939b: 12; Hagedorn 1908: 377, 1910a: 153; Schedl 1953c: 300, 1964: 217.

fabricii Schedl 1964k: 217 (*Xyleborus*). Syntypes 3 ♀; Kurseong et Barway (Himalaya); IRSNB, Brussels, automatic. Synonymy: Wood 1989: 169.

References: (**ds**) Schedl 1964k: 217, 1965g: 22, 1975c: 383; Wood, S.L. 1989: 169.

***artegranulatus* (Schedl)** 1937b: 400 (*Xyleborus*). Lectotype ♀; Madagaskar (Sikora); Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 27.

Distribution: Madagascar.

Hosts: *Leptolaena multiflora, Palisandre rouge, Trema orientalis*.

References: (**ds**) Schedl 1977b: 132. (**tx**) Schedl 1937b: 400–401, 1955d: 272, 1977b: 132, 1979c: 27.

***asperatus* (Blandford)** 1895a: 321 (*Xyleborus*). Holotype ♀; Ceylon, Dikoya; BMNH, London.

Figures: Nunberg 1978:108.

Distribution: Asia (Guizhou, Xizang [Tibet] in China/ Bengal, Tamil Nadu in India/ Malaya/ Sri Lanka), Indonesia (Java, Sumatra).

Hosts: *Citrus aurantium, Elaeocarpus petiolatus, Litsea zeylonica, Symplocos loha*.

References: (**cn**) Green 1912a: 38; Roonwal 1954: 19. (**hb**) Browne 1961c: 126–127; Kalshoven 1959c: 137; Speyer 1923: 19. (**ds**) Beeson 1929: 236, 1930: 39, 51, 215; Green 1912a: 38; Hagedorn 1910d: 99; Kalshoven 1959c: 138; Kleine 1913b: 160, 1914b: 274, 1934a: 172; Roonwal 1954: 19; Schedl 1959a: 493. (**tx**) Blandford 1895a: 321; Green 1912a: 38; Hagedorn 1910a: 152; Nunberg 1978: 107–108; Sampson 1911: 382–383; Schedl 1958k: 151, 1959a: 493.

nepotulus Eggers 1923: 179 (*Xyleborus*). Holotype ♀; Brastagi an der Ostkuste Sumatras; Eggers Collection, in NHMW, Wien. Synonymy: Schedl 1958k: 151.

References: (**tx**) Eggers 1923a: 179–180, 1930d: 178, 1936e: 86–88, 1939c: 119, 1940d: 138, 1941b: 222–223; Schedl 1939f: 47, 1952c: 65, 1958k: 151, 1979c: 165.

citri Beeson 1930: 215 (*Xyleborus*). Syntypes ♀; Tista Valley, Darjeeling, Bengal, India; FRI, Dehra Dun. Synonymy: Wood 1989: 169.

References: (**ds**) Beeson 1930: 215. (**tx**) Beeson 1930: 215; Schedl 1959a: 494, 1979c: 58.

nepotulomorphus Eggers 1936e: 88 (*Xyleborus*). Holotype ♀; Java (G. Slamet); ZMA, Amsterdam. Synonymy: Schedl 1958k: 151.

References: (**cn**) Yunus & Hua 1980: 230. (**ds**) Yunus & Hua 1980: 230. (**tx**) Eggers 1936e: 88–89, 1939c: 119, 1940d: 138; Kalshoven 1959: 137; Nunberg 1959a: 432; Schedl 1942d: 4–5, 1950g: 895, 1951i: 42, 1954a: 142, 1958k: 151–152, 1959a: 111, 1979c: 165.

cristatuloides Schedl 1971a: 284 (*Xyleborus*). Holotype ♀; Sabaragamuwa Prov., Sri Lanka, 2500 ft., 5 miles NNW Belangoda; University of Lund Collection. Synonymy: Wood 1989: 169.

References: (**tx**) Schedl 1971a: 284, 1979c: 69; Wood, S. L. 1989: 169.

***bispinosulus* (Schedl)** 1961c: 73 (*Xyleborus*). Holotype ♀; Java: G. Slamet; Schedl Collection in NHMW, Wien.

Distribution: Indonesia (Java).

References: (**tx**) Schedl 1961c: 73, 1979c: 41.

***bostrichoides* (Schedl)** 1956a: 33 (*Xyleborus*). Holotype ♀; Angola: Malange; CAS, San Francisco.

Distribution: Africa (Angola/ Ghana).

Hosts: *Albizzia gummifera, Cassia siamea*.

References: (**ds**) Ferreira 1965: 1120; Schedl 1962j: 175. (**tx**) Schedl 1956a: 33, 1962j: 175, 1979c: 44.

***brunneipes* (Eggers)** 1940d: 138 (*Xyleborus*). Holotype ♀; Java: Batoerraden (G. Slamet); Drescher Collection, cotypes in Eggers Collection, in NHMW, Wien.

Distribution: Asia (Malaya), Indonesia (Java).

Hosts: *Calamus* sp., *Daemonorops* sp.

References: (**hb**) Beaver & Browne 1978: 605; Kalshoven 1959c: 158. (**ds**) Beaver & Browne 1978: 605; Browne 1985a: 190; Kalshoven 1935a: 14, 1959c: 138. (**tx**) Eggers 1940d: 138–139; Schedl 1942d: 6, 1958k: 148, 1979c: 48.

***camphorae* (Hagedorn)** 1908: 378 (*Xyleborus*). Syntypes ♀; Mauritius; Hamburg Museum, lost, H. E. Andrews Collection, 1 in Schedl Collection in NHMW, Wien.
Distribution: Africa (Ghana/ Kenya/ Mauritania/ Mauritius Island), Madagascar.
Hosts: *Acacia* sp., *Alchornea* cf *coriacea*, *Celtis zenkeri*, *Cinchona succerubra*, *Garcinia verucosa*, *Laurus comphora*, *Pinus insularis*.
References: (**cn**) Anonymous 1953j: 25; Kleine 1932a: 305. (**ec**) Anonymous 1953j: 25. (**hb**) Kleine 1928: 307, 1932a: 305–307; Schedl 1977b: 132. (**ds**) Gardner 1957a: 32; Hagedorn 1910d: 99; Jones, Roberts, & Baker 1959: 13–14; Kleine 1913b: 160, 1932a: 305, 1934a: 172; Schedl 1962j: 176, 1969d: 11, 1970d: 233, 1977b: 132; Webb & Jones 1957: 25–26, 39, 43; Wichmann 1954: 518. (**tx**) Eggers 1923a: 181, 1931a: 20; Hagedorn 1908: 378, 1910a: 152, 1913b: 16–17; Schedl 1941d: 380, 1951j: 23, 1955i: 212, 1962j: 176, 1969d: 11, 1977b: 132; Wylie & Yule 1977.

***catharinensis* (Eggers)** 1928c: 98 (*Xyleborus*). Syntypes 5 ♀; Brasil (Joinville, Sta. Catharina); SMTD, Dresden, and Eggers Collection, 1 Eggers syntype in NHMW, Wien.
Figures: Pedrosa-Macedo & Schonherr 1985:28.
Distribution: South America (Brazil).
Hosts: *Cedrela fissilis*, *Pinus elliottii*.
References: (**ds**) Blackwelder 1947; Pedrosa-Macedo & Schonherr 1985: 28; Schedl 1976a: 53; Schonherr & Pedrosa-Macedo 1981: 55. (**tx**) Eggers 1928c: 98, 1931a: 19; Pedrosa-Macedo & Schonherr 1985: 28; Schedl 1979c: 54.

***coffeiceus* (Schedl)** 1951b: 376 (*Xyleborus*). Holotype ♀; Surinam, Pl. Jagtlust; Schedl Collection in NHMW, Wien.
Figures: Schedl 1951b: 377.
Distribution: South America (Suriname).
References: (**cn**) Dinther 1961; Kalshoven 1963: 235. (**tx**) Schedl 1951b: 376–377, 1979c: 59.

***colossus* (Blandford)** 1896b: 207 (*Xyleborus*). Holotype ♀; New Guinea, Humboldt; BMNH, London.
Distribution: New Guinea.
References: (**ds**) Hagedorn 1910d: 100; Kleine 1914b: 296. (**tx**) Blandford 1896b: 207; Hagedorn 1910a: 152; Schedl 1942c: 182, 1942d: 28, 1979c: 60.
szentivanyi Schedl 1968e: 267 (*Xyleborus*). Holotype ♀; Papuan Highlands Livestock and Rubber Experiment Station, Bisianumu, Central District, 480 m; Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 169.
References: (**tx**) Schedl 1968e: 267, 1979c: 248; Wood, S. L. 1989: 169.

***compressus* (Lea)** 1893: 321 (*Xylopertha*). Syntypes ♀; Tamworth and Sidney; not located.
Figures: Bain 1976:183.
Distribution: Australia (New South Wales, Queensland).
Hosts: *Araucaria* spp., *Argyrodendron* sp., *Castanospermum* sp., *Endiadra palmerstonii*, *Eucalyptus* spp., *Flindersia* sp.
References: (**cn**) Froggatt 1926a, 1927; Kershaw 1973; Moore 1959: 188. (**hb**) Froggatt 1926a, 1927. (**ds**) Bain 1973b, 1976; Brimblecombe 1953: 28; Martyn et al. 1975: 26; Moore 1959: 188, 1961: 92; Schedl 1936g: 532, 1959d: 67, 1965g: 25, 1979a: 158. (**tx**) Bain 1976: 183; Lea 1893: 321, 1904: 106, 1910: 138; Nunberg 1959a: 420; Schedl 1936g: 532–533, 1942c: 163, 1955b: 278, 1959d: 67, 1965g: 25.

***consimilis* (Eggers)** 1923a: 180 (*Xyleborus*). Holotype ♀; Sarawak auf Borneo; MCG, Genova.
Distribution: Asia (Tamil Nadu in India), Indonesia (Borneo).
References: (**ds**) Schedl 1975a. (**tx**) Eggers 1923a: 179–180, 1939c: 119.

***conspectus* (Schedl)** 1964g: 247 (*Xyleborus*). Holotype ♀; Sarawak: Semengoh; BMNH, London.
Distribution: Asia (Malaya), Indonesia (Borneo).
Hosts: Rattan.
References: (**ds**) Beaver & Browne 1978: 606. (**tx**) Schedl 1964g: 247, 1979c: 64.

***cristatulus* (Schedl)** 1953c: 300 (*Xyleborus*). Lectotype ♀; Malaya, Selangor Kepong; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 69.
Distribution: Asia (Fujian in China/ Malaya).
References: (**hb**) Browne 1961c: 150. (**ds**) Browne 1961c: 150; Schedl 1959a: 501. (**tx**) Browne 1962c: 204; Schedl 1953c: 300, 1959a: 501, 1979c: 69.

***declivispinatus* (Schedl)** 1969b: 216 (*Xyleborus*). Holotype ♀; New Guinea, Karamui, Chimbu District; CSIRO, Canberra.
Distribution: New Guinea.
Hosts: Derebe log, *Ficus* sp.
References: (**tx**) Schedl 1969b: 216–217, 1979c: 76.
tectus Schedl 1972h: 63 (*Xyleborus*). Holotype ♀; Pimaga, S. H. Dist., New Guinea; CSIRO, Canberra. Synonymy: Wood 1989: 169.
References: (**tx**) Schedl 1972h: 63, 1979c: 250; Wood, S. L. 1989: 169.

***desectus* (Eggers)** 1923a: 167 (*Xyleborus*). Lectotype ♀; Los Banos (Luzon); USNM, Washington, designated by Anderson & Anderson 1971: 11.
Distribution: Asia (Malaya/ Vietnam), Indonesia (Java), Philippine Islands.
Notes: (3) Eggers 1923a: 168 (*vaspatorius* Hagedorn, nomen nudum, synonymy).
References: (**cn**) Yunus & Hua 1980: 230. (**hb**) Browne 1961c: 107; Kalshoven 1959c: 159. (**ds**) Kalshoven 1959c: 159; Schedl 1962b: 186, 1966b: 50. (**tx**) Anderson, W. H. & Anderson 1971: 11;

Eggers 1923a: 167–168; Nobuchi 1983: 302; Nunberg 1959a: 423; Schedl 1933d: 201, 1939c: 350, 1942a: 188.

desectus arduus Schedl (*Xyleborus*) 1942a: 188. Syntypes, sex?; Kuala Lumpur, Malaya; Schedl Collection in NHMW, Wien.
Notes: (1) Schedl 1979c: 78 (citation of holotype invalid).
References: (**tx**) Schedl 1942a: 188, 1979c: 78.

***devexulus* (Wood)** 1978b: 398 (*Xyleborus*). Holotype ♀ Homestead, Florida [USA]; Wood Collection, automatic.
Distribution: Antilles Islands (Dominican Republic in Hispanola/ Puerto Rico), North America (S Florida).
Hosts: *Carya* sp., *Cedrela mexicana*.
References: (**bv**) Atkinson, Foltz, & Connor 1988. (**hb**) Atkinson, Foltz, & Connor 1988; Deyrup & Atkinson 1987a: 65. (**ds**) Bright 1985c: 173; Deyrup & Atkinson 1987a: 65; Drooz 1985: 374; Wood, S. L. 1982b: 805. (**tx**) Bright 1985c: 173; Wood, S. L. 1978b: 398, 1982b: 805.

devexus Wood 1977b: 219 (*Xyleborus*). Holotype ♀; Homestead, Florida; Wood Collection, preoccupied by Schedl 1977.
References: (**tx**) Wood, S. L. 1977b(December): 219, 1978b: 398.

woodi Schedl 1979j: 127 (*Xyleborus*). Holotype ♀; Homestead, Florida; Wood Collection, automatic.
Notes: (1) This unneeded replacement name has no status in nomenclature.
References: (**tx**) Schedl 1979j: 127.

***devexus* (Schedl)** 1977e: 45 (*Xyleborus*). Holotype ♀; Metapan, El Salvador; Schedl Collection in NHMW, Wien.
Distribution: North America (El Salvador).
Hosts: *Quercus* sp.
References: (**ds**) Wood, S. L. 1982b: 805. (**tx**) Schedl 1977e(November): 45; Wood, S. L. 1982b: 805.

***dihingensis* (Eggers)** 1930d: 189 (*Xyleborus*). Holotype ♀; Assam (Upper Dihing Reserve, Lakhimpur); FRI, Dehra Dun.
Distribution: Asia (Assam in India).
Hosts: *Artocarpus lakoocha*, *Pterocarpus marsupium*.
Notes: (1) Originally named as a geographical race of *rufobrunneus*.
References: (**tx**) Eggers 1930d: 189, 198; Schedl 1979c: 80.

***diversipennis* (Schedl)** 1951j: 23 (*Xyleborus*). Lectotype ♀; Madagascar, Tsimbazaza; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 83.
Distribution: Madagascar.
Hosts: *Mangifera indica*.
Notes: (3) Schedl 1953d: 96 (described male).
References: (**hb**) Paulian 1951: 29. (**ds**) Mayne & Donis 1962: 318; Paulian 1951: 29; Schedl 1977b: 134. (**tx**) Schedl 1951j: 23, 1953d: 69, 96–97, 1977b: 134.

***eichhoffi* (Schreiner)** 1882: 248 (*Xyleborus*). Holotype ♀; Guineae ora Afric.; USNM, Washington.
Figures: Nunberg 1963:pl. 13, figs. 1–4.
Distribution: Africa (Angola/ Botswana/ Burundi/ Cameroons/ Central African Republic/ Congo/ Equatorial Guinea/ Ghana/ Guinea/ Ivory Coast/ Kenya/ Malawi/ Mozambique/ Nigeria/ Ruanda/ Somalia/ Spanish Guinea/ South Africa/ Tanzania/ Togo/ Uganda/ Zaire/ Zambia/ Zimbabwe).
Hosts: *Acacia* sp., *Acridocarpus* sp., *Albizzia* spp., *Beilschmiedia* sp., *Brachystegia* sp., *Celtis* spp., *Croton* sp., *Diospyros* sp., *Ficus* sp., *Gossweilerodendron* sp., *Gossypium hirsutum*, *Khaya* sp., *Klaineana* sp., *Lecanodiscus* sp., *Mammea* sp., *Mitragyna* sp., *Musanga* sp., *Napoleana* sp., *Olea* sp., *Podocarpus latifolius*, *Pycanthus* sp., *Sclerocarya* sp., *Turraeanthus* sp.
Notes: (3) Schedl 1957e: 881 (described male).
References: (**cn**) Anonymous 1970c: 14. (**hb**) Beaver & Loyttyniemi 1985a: 68; Browne 1963a: 241; Loyttyniemi, Beaver, & Loyttyniemi 1984: Schedl 1962j: 177. (**ds**) Anonymous 1970c: 14: Beaver & Loeyttyniemi 1985a: 68; Browne 1963a: 241, 1973a: 281, 1980a: 373, 1980d: 493; Cachan 1957: 15, 43–53; Fairmaire 1892b; Ferreira 1965: 1122; Gardner 1957: 33; Hagedorn 1910d: 103; Jones, Roberts, & Baker 1959: 13, 48–56; Kleine 1913b: 161, 1914b: 308; Lee 1971: 31; Nunberg 1961a: 330, 1963: 30; Roberts 1969: 132; Schedl 1939g: 170, 1952j: 4, 1959p: 20, 1962b: 60, 1962j: 177, 1962k: 1100, 1964e: 69, 1965e: 354, 1965h: 112, 1966a: 276, 1967e: 216, 1968b: 144, 1969d: 4, 1971e: 2, 1971f: 148, 1971g: 193, 1972e: 283, 1972k: 296, 1977d: 279, 1979b: 416, 1982: 279. (**tx**) Beaver & Loyttyniemi 1985a: 68; Eggers 1920: 125, 1927a: 198; Fairmaire 1892b; Hagedorn 1910a: 153, 1913: 256; Powell, W. 1980: 29; Schaufuss 1891: 25–27; Schedl 1937c: 13, 1950d: 8, 1957d: 16–17, 1957e: 881, 1962j: 177, 1962k: 1100, 1979c: 88; Schreiner 1882: 248.

congonus Hagedorn 1908: 379 (*Xyleborus*). Syntypes 2 ♀; Kinchassa (Waelbroek) Congo; IRSNB, Brussels. Synonymy: Schedl 1957d: 17.
References: (**ds**) Hagedorn 1910d: 100; Kleine 1913b: 160, 1914b: 314; Mayne & Donis 1962: 317. (**tx**) Hagedorn 1908: 379, 1910a: 153; Schedl 1939g: 170, 1950d: 12, 1952j: 4, 1957d: 17, 1962j: 177.

***facetus* (Schedl)** 1965f: 12 (*Xyleborus*). Holotype ♀; Uganda, Nyabyeya; BMNH, London.
Distribution: Africa (Uganda).
Hosts: *Albizzia* sp.
References: (**ds**) Schedl 1967e: 216. (**tx**) Schedl 1962j: 180, 1965f: 12, 1979c: 94.

***ferus* (Wood)** 1986c: 269 (*Ambrosiosmus*). Holotype ♀; Jalapa, Veracruz, Mexico; Wood Collection.

Distribution: North America (Veracruz in Mexico).

Hosts: *Quercus* sp.

References: (**tx**) Wood, S. L. 1986c: 269.

***fraterculus* (Schaufuss)** 1905: 19 (reprint p. 10) (*Xyleborus*). Syntypes ♀; Madagascar; Hamburg Museum, lost, except 1 in Schedl Collection [obtained from Eggers Collection?] in NHMW, Wien.

Distribution: Madagascar.

Hosts: *Mangifera indica, Pinus* sp.

References: (**hb**) Paulian 1951: 29. (**ds**) Hagedorn 1910d: 104; Kleine 1913b: 161, 1914b: 326; Paulian 1951: 29; Schedl 1970d: 233. (**tx**) Anderson, W. H. & Anderson 1971: 13; Hagedorn 1910a: 154, 1913b: 256; Schaufuss 1905: 10, 19; Schedl 1937b: 400, 1939g: 173, 1951j: 20, 1953d: 69, 1961e: 144, 1970d: 233, 1977b: 134, 1979c: 100.

***funebris* (Schedl)** 1976a: 73 (*Xyleborus*). Holotype ♀; Brasilien; Schedl Collection in NHMW, Wien.

Distribution: South America (Brazil).

Hosts: *Quercus* sp., *Pinus ochoterenai.*

References: (**ds**) Schedl 1976a: 73, 1977e: 43.

***funereus* (Lea)** 1910: 139 (*Xyleborus*). Syntypes ♀; Queensland: Cairns; SAM, Adelaide?

Figures: Nobuchi 1978a:pl. 3.

Distribution: Australia (Queensland), Indonesia (Celebes, Java, Sumatra), New Guinea.

Hosts: *Sterculia alata.*

References: (**hb**) Kalshoven 1959c: 139. (**ds**) Blackwelder 1947: 779; Brimblecombe 1953: 29; Ferrer 1942; Kalshoven 1959c: 139; Nobuchi 1978a: 30; Ohno, Yoneyama, & Narazawa 1987: 94; Ohno et al. 1988a: 94; Schedl 1933e: 108, 1961c: 71, 1966b: 94, 1969a: 207, 1971c: 368, 1971f: 148. (**tx**) Lea 1910: 139; Nobuchi 1978a:pl. 3, 1983: 302; Schedl 1939f: 45, 1940a: 365, 1951i: 50, 1954a: 141, 1955b: 281, 1958h: 498, 1961e: 71.

nepos Eggers 1923a: 198 (*Xyleborus*). Lectotype ♀; Java; USNM, Washington, designated by Anderson & Anderson 1971: 198. Synonymy: Schedl 1933e: 103.

References: (**cn**) Mathur & Singh 1961a: 69. (**ds**) Beeson 1930: 74, 250, 1961: 308; Kalshoven 1959: 139; Kleine 1934a: 174; Mathur & Singh 1961a: 69; Schedl 1938g: 426. (**tx**) Anderson, W. H. & Anderson 1971: 21; Beeson 1930; Eggers 1923a: 179, 198–200, 1927b: 407, 1930d: 192; Schedl 1933e: 103, 1939f: 45, 1940a: 365, 1951i: 50, 1979c: 165; Wood, S. L. 1975a: 23.

nepos robustus Schedl 1933e: 103 (*Xyleborus*). Syntypes ♀; Mt. Maquiling, Laguna, Luzon [Philippines]; Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 169–170.

Notes: (1) Schedl 1979c: 165 (citation of holotype invalid).

References: (**ds**) Schedl 1966b: 56. (**tx**) Schedl 1933e: 103, 1958h: 498, 1979c: 165; Wood, S. L. 1989: 169–170.

signatus Schedl 1948f: 278 (*Xyleborus*). Holotype ♀; Mexico; Schedl Collection, in NHMW, Wien. Synonymy: Wood 1975a: 23.

Notes: (3) The holotype of this species was either mislabeled or represents an interception that is not established in Mexico.

References: (**tx**) Schedl 1948f: 278, 1979c: 228; Wood, S. L. 1975a: 23.

***funestus* (Schedl)** 1979g: 107 (*Xyleborus*). Holotype ♀; Papua New Guinea; Schedl Collection in NHMW, Wien.

Distribution: New Guinea.

References: (**tx**) Schedl 1979g: 107.

***hagedorni* (Iglesias)** 1914b: 128 (*Xyleborus*). Syntypes ♂ ♀; Butontan, S. Paulo; MZUSP, Sao Paulo.

Figures: Pedrosa-Macedo & Schonherr 1985:31.

Distribution: North America (Costa Rica/ Guatemala/ Honduras/ Oaxaca, Veracruz in Mexico/ Panama), South America (Brazil/ Colombia/ Venezuela).

Hosts: *Acacia* sp., *Cedrela mexicana*, *Mangifera indica*, *Ochroma* sp., *Pinus elliottii, Terminalia* sp., *Theobroma cacao.*

References: (**cn**) Azavedo 1924b: 180–181; Costa Lima 1956; Mathur & Singh 1961a: 84, 1961b: 14. (**hb**) Costa Lima 1956. (**ds**) Blackwelder 1947: 780; Costa Lima 1936, 1956; Kleine 1934a: 173; Mathur & Singh 1961a: 84, 1961b: 14; Schedl 1967d: 3, 1970e: 83, 1972g: 45, 1976a: 54; Schonherr & Pedrosa-Macedo 1981: 56. (**tx**) Costa Lima 1956; Iglesias 1914b: 128, 131; Pedrosa-Macedo & Schonherr 1985: 31; Schedl 1979c: 115.

guatemalensis Hopkins 1915b: 56 (*Ambrosiodmus*). Holotype ♀; Trece Aguas, Alta Verapaz, Guatemala; USNM, Washington. Synonymy: Wood 1989: 170.

References: (**hb**) Atkinson & Equihua 1986a: 421; Wood, S. L. 1982b: 808. (**ds**) Atkinson & Equihua 1985b: 237, 1986a: 421; Blackwelder 1947: 779; Estrada & Atkinson 1988: 206; Schedl 1961c: 2; Wood, S. L. 1961c: 2, 1982b: 808. (**tx**) Hopkins 1915b: 55–56; Wood, S. L. 1961c: 3, 1972e: 198, 1982b: 808, 1989: 170.

anisandrus Schedl 1954b: 44 (*Xyleborus*). Syntypes ♀; Rio Claro, Brazil; Schedl Collection in NHMW, Wien. Synonymy: Wood 1972e: 198.

References: (**tx**) Schedl 1954b: 44; Wood, S. L. 1972e: 198.

***incertus* (Schedl)** 1969b: 217 (*Xyleborus*). Holotype ♀; New Guinea, Jimi Valley Rain Forest; CSIRO, Canberra.

Distribution: New Guinea.

Hosts: *Harpullia* sp.

References: (**tx**) Schedl 1969b: 217–218, 1979c: 123.

***inferior* (Schedl)** 1976a: 74 (*Xyleborus*). Holotype ♀; Serra Lombart (Limao), Amapa [Brazil]; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1976a: 74.

***innominatus* (Schedl)** 1970d: 236 (*Xyleborus*). Holotype ♀; Madagascar, Perinet; Schedl Collection in NHMW, Wien.
Distribution: Madagascar.
Hosts: *Alchornia* cf. *coriacea, Eucalyptus* sp., *Foetidia clusioides, Ocotea* sp., *Pinus insularis*.
References: (**ds**) Schedl 1977b: 135. (**tx**) Schedl 1970d: 236, 1977b: 135, 1979c: 124.

***inoblitus* (Schedl)** 1939g: 173 (*Xyleborus*). Lectotype ♀; not stated, Schedl (1962j: 182) gives Insel Ukerewe; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 124.
Distribution: Africa (Cameroon/ South Africa/ Ukerewe Island in Tanzania).
References: (**ds**) Schedl 1964f: 618. (**tx**) Schedl 1939g: 173, 1941d: 402, 1950d: 3, 1954e: 79, 1957b: 150–151, 1962j: 182, 1965f: 12, 1979c: 124.

***inopinatus* (Schedl)** 1970e: 94 (*Xyleborus*). Holotype ♀; Nied. Guayana, Para Dist. [Suriname]; Schedl Collection in NHMW, Wien.
Distribution: South America (Suriname).
References: (**tx**) Schedl 1970e: 94–95, 1979c: 125.

***klapperichi* Bright** 1985c: 178. Holotype ♀; Dominican Republic; CNCI, Ottawa.
Distribution: Antilles Islands (Dominican Republic in Hispanola).
References: (**tx**) Bright 1985c: 178.

***lantanae* (Eggers)** 1930d: 180 (*Xyleborus*). Holotype ♀; Sagar, Mysore, Karnataka; FRI, Dehra Dun.
Figures: Kumar & Chandra 1977:44.
Distribution: Asia (Burma/ Assam, Bengal in India).
Hosts: *Albizzia lebbek, Anogeissus acuminata, Beischmiedia sikkimensis, Gmelina arborea, Lantana* sp., *Michelia champaca, Shorea scutulata*.
References: (**cn**) Mathur & Singh 1960b: 17, 1961a: 52; Roonwal 1954: 47. (**ds**) Beeson 1930; Kleine 1934a: 174; Mathur & Singh 1960b: 17, 1961a: 52; Roonwal 1954: 47. (**tx**) Beeson 1930: 68, 244; Eggers 1930d: 180–181; Kumar & Chandra 1977: 35, 44.

***latecompressus* (Schedl)** 1936g: 532 (*Xyleborus*). Lectotype ♀; N. S. Wales: Upper Williams R., Australia; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 136.
Distribution: Australia (New South Wales, Victoria).
References: (**ds**) Brimblecombe 1953: 29; Schedl 1936g: 532, 1975h: 352, 1979a: 158. (**tx**) Schedl 1936g: 532–533, 1979c: 136.

***latisulcatus* (Eggers)** 1940d: 142 (*Xyleborus*). Holotype ♀; Java (Batoerraden, G. Slamet); USNM, Washington.
Distribution: Indonesia (Java).
References: (**tx**) Anderson, W. H. & Anderson 1971: 17; Eggers 1940d: 142; Schedl 1951i: 43, 1979c: 137.

***lecontei* Hopkins** 1915b: 56. Holotype ♀; Keene, Florida [USA]; USNM, Washington.
Figures: Bright 1972d:95.
Distribution: Antilles Islands (Bahama Islands/ Cuba/ Guadeloupe/ Dominican Republic in Hispanola/ Puerto Rico), North America (Florida, Louisiana in USA).
Hosts: *Bishofia javanica, Carya* sp., *Cedrela mexicana, Coffea* sp., *Dacryodes* sp., *Diphysia robinoides, Ichthyomethia communis, Persea borbonea, Pinus occidentalis, Pleiogynum* sp., *Terminalia* sp., *Zanthoxylum flavum*.
References: (**bv**) Atkinson, Foltz, & Connor 1988. (**cn**) Anonymous 1962j; Vasquez 1988. (**hb**) Atkinson, Foltz, & Connor 1988; Baker, W. L. 1972: 269; Beal & Massey 1945: 55–56; Chamberlin 1939: 340; Deyrup & Atkinson 1987a: 65; Wood, S. L. 1982b: 807. (**ds**) Anonymous 1962j; Baker, W. L. 1972: 269, 271; Beal & Massey 1945: 55–56; Blatchley & Leng 1916: 614; Bright 1968b: 1302–1303, 1972d: 76, 1985c: 173; Chamberlin 1939: 340; Chapin & Oliver 1986; DeLeon 1942a; Deyrup & Atkinson 1987a: 65; Drooz 1985: 374; Leng 1920: 341; Martorell 1945: 470; Vasquez 1988; Wolcott 1948: 384; Wood, S. L. 1982b: 807; Woodruff 1962. (**tx**) Beal & Massey 1945: 55–56, 147–148; Blatchley & Leng 1916: 614; Bright 1968b: 1302, 1972d: 76, 95, 1985c: 173; Chamberlin 1939: 340; Hopkins 1915b: 56; Wood, S. L. 1972e: 199, 1982b: 807.

gundlachi Eggers 1931a: 20 (*Xyleborus*). Holotype ♀; Cuba; MNB, Berlin. Synonymy: Wood 1972e: 199.
References: (**ds**) Blackwelder 1947: 780; Schedl 1966f: 87, 1970e: 84. (**tx**) Eggers 1931a: 20, 30–31, 1940a: 108; Schedl 1954b: 44; Wood, S. L. 1972e: 199.

***lewisi* (Blandford)** 1894d: 104 (*Xyleborus*). Syntypes 9 ♀; Japan: Nikko, Hakono, Miyanoshita; BMNH, London.
Figures: Nakane et al. 1963: 384, Nobuchi 1967: pl. 1.
Distribution: Asia (Burma/ Guangdon, Sichuan, Xizang [Tibet], Yunnan in China/ Assam, Bengal, Tamil Nadu in India/ Japan/ Korea/ Malaya/ Sri Lanka/ Taiwan/ Vietnam), Indonesia (Borneo, Java, Sumatra), Philippine Islands.
Hosts: *Acer* spp., *Ailanthus altissima, Alnus* sp., *Amoora wallichii, Castanopsis cuspidata, C. indica, Cinnamomum camphora, C. obtusifolium, Evodia* sp., *Ficus carica, Hopea parviflora, Mesua myriocarpa, Phoebe laneolata, Poinceana alata, Populus* sp., *Prunus* sp., *Pueraria thunbergiana, Quercus stenophylla, Rhus sylvestris, Salix* sp., *Terminalia myriocarpa, Vatica laneaefolia*.

Notes: (3) Schedl Collection contained *pellitus*, nomen nudum, a synonym.

References: (**ay**) Murayama 1933a: 2. (**cn**) Murayama 1954a: 17; Shiraki 1957. (**ec**) Inouye et al. 1955: 98. (**hb**) Inouye et al. 1955: 98. (**ds**) Blandford 1895a; Browne 1966: 249, 1980c: 483; Cho 1957; Choo 1983: 106; Choo & Woo 1985: 166; Hagedorn 1910d: 106; Kleine 1913b: 101, 1914b: 261, 1934a: 174; Ko 1969: 285; Murayama 1929b: 2, 1930b: 19, 1933b: 7, 1934d: 509, 1936a: 134, 1937b: 372, 375, 1949c: 103, 1950b: 296, 1953a: 20, 1953c: 159, 1954a: 17, 1954b: 179, 1955: 100, 104; Nakane et al. 1963: 384; Nobuchi 1967: 22; Ohno, Yoneyama, & Nakazawa 1987a: 88; Schedl 1975a; Shiraki 1952; Yin & Huang 1981: 566. (**tx**) Blandford 1894d: 104, Browne 1961c: 109, 1966: 249; Eggers 1932d: 287, 1939c: 114; Hagedorn 1904d, 1910a: 155; Murayama 1930b: 19–31, 1933a: 2, 1934c: 299, 1934d: 509–512, 1936a: 134–135, 1937b: 372, 374–375, 1950b: 1296, 1953a: 20, 1955: 100, 104; Nakane et al. 1963: 384; Niisima 1910a: 11; Nobuchi 1967:pl. 1, 1983: 303, 1985c: 25; Schedl 1934f: 1646, 1962p: 208, 1979c: 138; Yin & Huang 1981: 566.

tegalensis Eggers 1923a: 181 (*Xyleborus*). Syntypes 3 ♀; Simpar Tegal (Java) und Rimbe Pengadang (Sumatra); 1 syntype in RNH, Leiden, 1 in SMTD, Dresden, 1 in Eggers Collection, this Eggers syntype in NHMW, Wien. Synonymy: Schedl 1950g: 894.

Notes: (3) Schedl 1951i: 60 (described male).

References: (**ay**) Gardner 1934b: 1–17. (**cn**) Mathur & Singh 1961b: 34; Roonwal 1954: 66. (**hb**) Kalshoven 1959c: 136. (**ds**) Beeson 1930: 86, 262; Browne 1961c: 108–109; Kalshoven 1959c: 136; Mathur & Singh 1961b: 34; Roonwal 1954: 66; Schedl 1936d: 5, 1961c: 70, 1962b: 185, 1965g: 22, 1974c: 262, 1975a. (**tx**) Beeson 1930; Eggers 1923a: 181, 1927b: 390, 407; Gardner 1934b; Schedl 1936d: 5, 1937e: 544, 1942d: 4, 1950g: 894–895, 1951i: 42, 60, 1954a: 143, 1954c: 154, 1962p: 208, 1965g: 22, 1979c: 251.

lewekianus Eggers 1923a: 181 (*Xyleborus*). Holotype ♀; Nilgiri Hills (Indien); Hamburg Museum, lost. Synonymy: Wood 1989: 170.

References: (**cn**) Mathur & Singh 1960b: 58. (**ds**) Mathur & Singh 1960b: 58; Schedl 1973c: 379. (**tx**) Eggers 1923a: 181.

***loebli* (Schedl)** 1979b: 413 (*Xyleborus*). Holotype ♀; Cote d'Ivoire, Man-Orstom; Schedl Collection in NHMW, Wien.

Distribution: Africa (Ivory Coast).

References: (**tx**) Schedl 1979b: 413.

***mahafali* (Schedl)** 1953d: 96 (*Xyleborus*). Lectotype ♀; Madagascar, Mt. d'Ambre; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 145.

Distribution: Madagascar.

Hosts: *Elaeocarpus sericens, Harongana madagascarensis, Homalium planiflorum, Leptolaena, multiflora, Neodypsis baroni, Terminalia mantaly, Trema orientalis.*

References: (**hb**) Schedl 1977b: 136. (**ds**) Schedl 1977b: 136. (**tx**) Schedl 1953d: 96, 1962j: 185, 1977b: 136, 1979c: 145.

***mamibillae* (Browne)** 1970: 573 (*Xyleborus*). Holotype ♀; Nigeria: Mambilla Plateau, Gyel Nyaki at 5000 ft.; BMNH, London.

Distribution: Africa (Nigeria).

References: (**tx**) Browne 1970: 573–574; Roberts 1969: 132.

***minor* (Stebbing)** 1909b: 20 (*Phloeosinus*). Syntypes 2 ♀; Assam: labeled Kochujan, printed as Goalpara Sal Forests; FRI, Dehra Dun.

Distribution: Asia (Bangladesh/ Bhutan/ Burma/ Assam, Bengal, Maharashtra, Uttar Pradesh in India/ Nepal/ Thailand/ Vietnam).

Hosts: *Bombax malabaricum, Dipterocarpus obtusifolius, Salmalia malabarica, Shorea robusta, Tectona, grandis, Terminalia myriocarpa.*

Notes: (3) Schedl 1964k: 314 (*himalayensis* Eggers, nomen nudum, synonymy).

References: (**cn**) Chandra 1981; Mathur & Singh 1961a: 13, 1961b: 14; Roonwal 1954: 51; Roonwal, Chatterjee, & Thapa 1961b: 7; Stebbing 1914: 549. (**ec**) Stebbing 1914: 549. (**hb**) Beaver & Browne 1975: 298; Chandra 1981; Stebbing 1909b: 20, 1914: 549; Zocchi 1956: 141. (**ds**) Beaver & Browne 1975a: 298; Beeson 1922: 495–496, 1930: 70–73, 246; Browne 1981a: 126; Kleine 1912b: 183, 1914b: 277; Mathur & Singh 1961a: 13, 1961b: 14; Roonwal 1954: 51; Roonwal, Chatterjee, & Thapa 1961b: 7; Schedl 1973b: 211, 1975c: 383. (**tx**) Beeson 1922: 496, 1930: 246; Schedl 1950g: 893, 1962p: 208, 1964k: 314; Sokanovskii 1960: 675; Stebbing 1907: 39, 1909b: 20, 1909b: 20, 1914: 549; Zocchi 1956: 141.

crassus Hagedorn 1910b: 8 (*Xyleborus*). Holotype ♀; Sumatra; Hamburg Museum, lost. Synonymy: Schedl 1962p: 208 (apparently either an error in labeling or in synonymy, since this species is not known to occur in Sumatra).

References: (**ds**) Hagedorn 1910d: 101; Kleine 1913b: 160, 1914b: 286; Schedl 1964g: 242. (**tx**) Eggers 1925: 159; Hagedorn 1910a: 153, 1910b: 8; Schedl 1962p: 208, 1964g: 242.

***natalensis* (Schaufuss)** 1891: 20 (*Xyleborus*). Holotype ♀; Natal; Hamburg Museum lost.

Distribution: Africa (Angola/ Ghana/ Guinea/ South Africa/ Tanzania/ Zaire), Madagascar.

Hosts: *Eucalyptus* sp., *Polyporus* sp., *Prunus salasii*, *Pterocarpus* sp.

References: (**ds**) Beeson 1930: 246; Hagedorn 1910b: 107; Kleine 1913b: 162, 1914b: 319, 326. (**tx**) Eggers 1923a: 181, 1932d: 295–297; Hagedorn 1910a: 155, 1913b: 256; Schaufuss 1891: 20; Schedl 1957b: 150–151, 1962j: 182, 1962k: 1101.

***neglectus* (Schedl)** 1957d: 16 (*Xyleborus*). Lectotype ♀; Bekwai, Gold Coast; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 220, automatic.
Distribution: Africa (Ghana/ Zaire).
Hosts: *Eucalyptus citriodora*, *Triplochiton scleroxylon*.
References: (**ds**) Schedl 1962b: 60, 1962j: 183, 1962k: 1101, 1964j: 42, 1967e: 218. (**tx**) Schedl 1957d: 16, 1962j: 183, 1979c: 220.
scabrior Schedl 1954e: 79 (*Xyleborus*). Lectotype ♀; Bekwai, Gold Coast; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 220, preoccupied by Schedl 1953.
References: (**tx**) Schedl 1954e: 54, 70, 79, 1957d: 16, 1962j: 183, 1962k: 1101, 1979c: 220.

***nepocranus* (Schedl)** 1939f: 45 (*Xyleborus*). Lectotype ♀; Java, Bandjar; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 165.
Distribution: Indonesia (Java).
Hosts: Rattan.
References: (**hb**) Kalshoven 1959c: 137. (**ds**) Kalshoven 1959c: 137; Schedl 1966b: 62. (**tx**) Nobuchi 1983: 303; Schedl 1939f: 45–46, 1979c: 165.

***nigripennis* (Schedl)** 1951i: 68 (*Xyleborus*). Holotype ♀; Celebes, Tominibocht; Schedl Collection in NHMW, Wien.
Distribution: Indonesia (Celebes).
References: (**tx**) Schedl 1951i: 68, 1979c: 167.

***nodulosus* (Eggers)** 1941b: 223 (*Xyleborus*). Holotype ♀; Fukien (Kuatun, 2300 m), China; Alexander Konig Museum, Bonn.
Distribution: Asia (Fujian in China).
Notes: (3) Schedl 1957d: 86 proposed the replacement name *pernodulus* Schedl for this species when in fact it was not a homonym.
References: (**tx**) Eggers 1941b: 223–224; Schedl 1957d: 85, 1965c: 72.
pernodulus Schedl 1957d.85. Holotype ♀; Fukien (Kuatun, 2300 m), China; Alexander Konig Museum, Bonn.
References: (**tx**) Browne 1962b: 50; Schedl 1957d: 85.

***obliquecaudata* Motschulsky** 1863: 513. Syntypes 4 ♀; Des Montagnes de Nura-Ellia, syntypes labeled India Occidentale; IZM, Moscow.
Distribution: Asia (Sri Lanka).
Hosts: *Kududavula* sp.
Notes: (1) Wood 1969c: 119 (syntypes examined). (3) A specimen of *Euwallacea validus* intercepted in Canada was erroneously reported by MacNay 1955 under this name.
References: (**cn**) Green 1916: 608–636; MacNay 1955: 109, 134; Mathur & Singh 1960b: 43. (**ds**) Gemminger & Harold 1872: 2692; Hagedorn 1910d: 107; Kleine 1913b: 167, 1914b: 274; Mathur & Singh 1960b: 43; Murayama 1936b: 114; Schedl 1959a: 500. (**tx**) Eichhoff 1876a: 378–379, 1878b: 351; Hagedorn 1910a: 513, 1910b; Hopkins 1914: 127; Motschulsky 1863: 513, 1866: 403; Schedl 1934g: 1646, 1959a: 500; Wood, S. L. 1969c: 119.
carinipennis Eichhoff 1868c: 152 (*Xyleborus*). Holotype ♀; Ceylon; Hamburg Museum, lost.
Synonymy: Eichhoff 1876a: 378.
References: (**ds**) Gemminger & Harold 1872: 2685. (**tx**) Eichhoff 1868c: 152, 1876a: 378–379, 1878b: 61, 351, 489; Schedl 1959a: 500.
semirufus Schedl 1959a: 499 (*Xyleborus*). Holotype ♀; Ceylon: Ramboda; BMNH, London.
Synonymy: Wood 1989: 170.
References: (**ds**) Schedl 1959a: 499. (**tx**) Schedl 1959a: 499, 1979c: 224.

***obliquus* (LeConte)** 1878a: 432 (*Pityophthorus*). Holotype ♀; Enterprise, Florida; MCZ, Cambridge.
Figures: Bright 1968b:1299.
Distribution: Africa (Cameroon/ Kenya/ South Africa/ Tanzania/ Uganda/ Zaire/ Zambia), Antilles Islands (Dominican Republic in Hispanola/ Guadeloupe/ Puerto Rico), North America (Guatemala/ Michoacan in Mexico/ District of Columbia, Florida, Georgia, Louisiana, Mississippi, North Carolina, Virginia in USA), South America (Brazil/ Colombia).
Hosts: *Acacia* sp., *Albizzia* spp., *Betula* sp., *Carya* spp., *Castania dentata*, *Celtis* spp., *Cinchona* sp., *Citrus* sp., *Croton* sp., *Entandrophragma* sp., *Eucalyptus* sp., *Ficus* sp., *Gossweilerodendron* sp., *Grevillea* sp., *Hoslundia* sp., *Lindera* sp., *Persea* sp., *Strombosia* sp.
Notes: (1) Blackman 1928b: 148 (to *Ambrosiodmus*)
References: (**cn**) Swaine 1918a: 104. (**hb**) Atkinson & Equihua 1986a: 421; Chamberlin 1939: 440; Swaine 1918a: 104. (**ds**) Atkinson & Equihua 1986a: 421, 1988: 85; Atkinson et al 1991: 160; Baker, W. L. 1972: 271; Beaver & Loyttyniemi 1985a: 68; Blatchley & Leng 1916: 633; Bright 1968b: 1301, 1981c: 157, 1985c: 173; Chamberlin 1939: 440; Chapin & Oliver 1986; Hagedorn 1910d: 73; Henshaw 1882: 268, 1885: 148; Kleine 1914b: 400; Leng 1920: 341; Schwarz 1878d: 468; Swaine 1909: 136; Weber, B. C. & McPherson 1991: 49; Wood, S. L. 1982b: 804. (**tx**) Blackman 1928b: 148; Blatchley & Leng 1916: 633; Bright 1968a: 636–639, 1968b: 1299, 1301, 1985c: 173, 177; Chamberlin 1939: 440; Hagedorn 1910a: 101; LeConte 1878a: 432, 468; Swaine 1909: 136, 1918a: 104; Wood, S. L. 1966b: 32, 1975b: 394, 1982b: 804.
gilvipes Blandford 1898b: 205 (*Xyleborus*). Holotype ♀; Zapote, Guatemala; BMNH, London.
Synonymy: Wood 1975b: 394.
References: (**ds**) Blackwelder 1947: 779; Hagedorn 1910d: 105; Kleine 1913b: 161, 1914b: 371. (**tx**) Blandford 1898b: 205; Hagedorn 1910a: 154; Schedl 1936i: 110; Wood, S. L. 1972e: 198, 1975b: 394.
linderae Hopkins 1915b: 56 (*Ambrosiodmus*).

Holotype ♀; Rosslyn, Virginia, USA; USNM, Washington. Synonymy: Bright 1968b: 1301.

References: (**hb**) Baker, W. L. 1972: 269; Beal & Massey 1945: 148–159; Chamberlin 1939: 440. (**ds**) Baker, W. L. 1972: 269; Beal & Massey 1945: 148–149; Blatchley & Leng 1916: 613; Chamberlin 1939: 440; Kleine 1934a: 177; Leng 1920: 341. (**tx**) Beal & Massey 1945: 148–149; Blatchley & Leng 1916: 613; Bright 1968b: 1301; Chamberlin 1939: 440; Hopkins 1915b: 55–56.

brasiliensis Eggers 1928c: 96 (*Xyleborus*). Lectotype ♀; Blumenau, Santa Catarina, Brazil; USNM, Washington, designated by Anderson & Anderson 1971: 7. Synonymy: Wood 1975b: 394.

References: (**cn**) Costa Lima 1956. (**hb**) Costa Lima 1956. (**ds**) Blackwelder 1947: 779; Costa Lima 1956; Pedrosa-Macedo & Schonherr 1985: 27; Roba 1935: 340; Schedl 1966f: 87, 1967d: 3, 1970e: 83, 1972g: 44, 1976a: 53; Wood, S. L. 1961c: 1. (**tx**) Anderson, W. H. & Anderson 1971: 7; Costa Lima 1956; Eggers 1928c: 96, 1941a: 101; Pedrosa-Macedo & Schonherr 1985: 27; Schedl 1979c: 45; Wood, S. L. 1961c: 1, 1975b: 394.

mexicanus Eggers 1931a: 19 (*Xyleborus*). Holotype ♀; Maravatio [presumably Michoacan, Mexico]; MNB, Berlin. Synonymy: Wood 1972e: 198.

References: (**ds**) Blackwelder 1947: 780; Ferrer 1942. (**tx**) Eggers 1931a: 19–20; Schedl 1940a: 361; Wood, S. L. 1972e: 198.

pseudobrasiliensis Eggers 1941a: 101 (*Xyleborus*). Holotype ♀; Guadeloupe (Courbeyre); Eggers Collection, in NHMW, Wien. Synonymy: Bright 1985c: 177.

References: (**tx**) Bright 1985c: 77; Eggers 1941a: 101; Schedl 1979c: 200.

illepidus Schedl 1941d: 402 (*Xyleborus*). Holotype ♀; Deutsch-Ostafrika; Schedl Collection in NHMW, Wien. Synonymy: Wood 1975b: 394.

References: (**ds**) Browne 1973a: 282; Gardner 1957a: 33; Mayne & Donis 1962: 319; Schedl 1962h: 60, 1962j: 181, 1962k: 1100; Wichmann 1954: 522. (**tx**) Nunberg 1963b: 36, pl. 17–18; Powell, W. 1980: 29; Schedl 1941d: 402, 1950c: 209, 1950d: 3, 8, 1952j: 3, 1953d: 96, 1955i: 212, 1961e: 144, 1962j: 181, 1962k: 1100, 1979c: 120; Wood, S. L. 1975b: 394.

melanarius Schedl 1978c: 307 (*Xyleborus*). Holotype ♀; Brasilien, Nova Teutonia, 300–500 m; Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 170.

References: (**tx**) Schedl 1978c: 307; Wood, S. L. 1989: 170.

***ocellatus* (Wood)** 1974a: 37 (*Xyleborus*). Holotype ♀; Piedras Blancas, 10 km E Medellin, Antioquia, Colombia; Wood Collection.

Distribution: South America (Colombia).

Hosts: *Clusia* sp.

References: (**tx**) Wood, S. L. 1974a: 37.

***opacithorax* (Schedl)** 1937b: 402 (*Xyleborus*). Holotype ♀; Urwald Beni (Ostafrika); Schedl Collection in NHMW, Wien.

Distribution: Africa (South Africa/ Uganda/ Zaire).

Hosts: *Celtis mildbraedii*, *Hannoa klaineana*.

References: (**hb**) Schedl 1962j: 184. (**ds**) Schedl 1962j: 184, 1965a: 21, 1967e: 218. (**tx**) Schedl 1937b: 402–403, 1962j: 184–185, 1965g: 21, 1979c: 179.

***opimus* (Wood)** 1974a: 37 (*Xyleborus*). Holotype ♀; Sebring, Florida [USA]; Wood Collection.

Distribution: North America (Florida in USA).

Notes: (3) This is probably an introduction from another continent.

References: (**ds**) Drooz 1985: 374; Wood, S. L. 1982b: 807. (**tx**) Wood, S. L. 1974a: 37, 1982b: 807.

***optatus* (Schedl)** 1973e: 92 (*Xyleborus*). Holotype ♀; Sydney, N. S. Wales, Australia; Schedl Collection in NHMW, Wien.

Distribution: Australia (New South Wales).

References: (**tx**) Schedl 1973e: 92, 1979c: 175.

***ovatus* (Eggers)** 1932d: 298 (*Xyleborus*). Holotype ♀; Congostaat (Ganda-Buku); Eggers Collection, in NHMW, Wien.

Figures: Schedl 1962j:167.

Distribution: Africa (Cameroon/ Ivory Coast/ Nigeria/ Zaire).

Hosts: *Canarium* sp., *Dialium corbisieri*, *Drypetes gossweileri*, *Pterocarpus soyauxii*, *Ricinodendron heudelotii*, *Strombosia grandiflora*, *Triumfetta* sp.

Notes: *X. tenebrosus* is a synonym (DEB).

References: (**hb**) Schedl 1962j: 166. (**ds**) Schedl 1962j: 166, 1964e: 69, 1967e: 218. (**tx**) Eggers 1932d: 298–299; Schedl 1937b: 402, 1952j: 3, 1957d: 101, 1962j: 166–167, 1979c: 181.

***paucus* Wood** 1986c: 269. Holotype ♀; Isla del Coco, Costa Rica; Wood Collection.

Distribution: North America (Isla del Coco in Costa Rica).

References: (**tx**) Wood, S. L. 1986c: 269.

***permarginatus* (Schedl)** 1933d: 200 (*Xyleborus*). Holotype ♀; Mt. Maquiling, Laguna Prov., Luzon; Schedl Collection in NHMW, Wien.

Distribution: Asia (Ryukyu Islands), Philippine Islands (Luzon).

References: (**ds**) Nobuchi 1979a: 407; Schedl 1966b: 65. (**tx**) Nobuchi 1983: 303; Schedl 1933d: 200–201, 1979c: 189.

***pertortuosus* (Schedl)** 1942a: 186 (*Xyleborus*). Holotype ♀; Philippinen, Luzon, Mt. Makiling; Schedl Collection in NHMW, Wien.

Distribution: Philippine Islands (Luzon).

References: (**tx**) Nobuchi 1983: 303; Schedl 1942a: 186, 1966b: 65, 1979c: 191.

***pithecolobius* (Schedl)** 1937c: 13 (*Xyleborus*). Lectotype ♀; Gold Coast: Eastern Province, Actinota; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 195.
Distribution: Africa (Ghana/ Sudan/ Zaire/ Zimbabwe).
Hosts: *Pithecolobium saman*.
References: (**ds**) Schedl 1962j: 185, 1967e: 218, 1968b: 145. (**tx**) Browne 1970: 569; Schedl 1937c: 13–14, 1954e: 47, 1962j: 185, 1979c: 195.

***pseudocitri* (Schedl)** 1959a: 494 (*Xyleborus*). Syntypes ♀; Ceylon: Sabargamuva, Millawitiya Estate; Schedl Collection in NHMW, Wien.
Distribution: Asia (Sri Lanka).
Notes: (1) Schedl 1979c: 201 (citation of holotype invalid).
References: (**ds**) Schedl 1959a: 495, 1971a: 281. (**tx**) Schedl 1959a: 494–495, 1979c: 201.

***pseudocolossus* (Schedl)** 1942d: 28 (*Xyleborus*). Holotype ♀; Ost-Java, Samberbajem, Res. Kediri; Schedl Collection in NHMW, Wien.
Distribution: Indonesia (Java).
References: (**tx**) Schedl 1942d: 28, 1979c: 201.

***raucus* (Schedl)** 1950c: 209 (*Xyleborus*). Holotype ♀; Mauritius, Les Mares; Schedl Collection in NHMW, Wien.
Distribution: Africa (Mauritus Island), Madagascar.
Hosts: *Coffea* sp.
References: (**ds**) Schedl 1969d: 11, 1977b: 136. (**tx**) Schedl 1950c: 209, 1977b: 137, 1979c: 210.

***restrictus* (Schedl)** 1939f: 46 (*Xyleborus*). Lectotype ♀; Mt. Gede, Tapos, G. Slamet, Java, Batoerraden; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 210.
Distribution: Asia (Malaya), Indonesia (Java).
Hosts: *Shorea* sp.
Notes: (3) This is a possible synonym of *consimilis*.
References: (**hb**) Kalshoven 1959c: 138. (**ds**) Kalshoven 1959c: 138; Schedl 1971c: 365. (**tx**) Schedl 1939f: 46–48, 1979c: 210.

***rhodesianus* (Eggers)** 1936c: 40 (*Xyleborus*). Holotype ♀; S. Rhodesia: Salisbury; BMNH, London.
Figures: Nunberg 1963b:pl. 23, figs. 6–7, pl. 24, figs. 1–2.
Distribution: Africa (South Africa/ Tanzania/ Zaire/ Zambia/ Zimbabwe).
References: (**ds**) Beaver & Loyttyniemi 1989; Schedl 1962j: 169, 1965e: 355. (**tx**) Beaver & Loyttyniemi 1989; Eggers 1936c: 40; Nunberg 1963b: 48, pl. 23–24; Powell, W. 1980: 29; Schedl 1962j: 169, 1979c: 211.

***rubricollis* (Eichhoff)** 1875: 202 (*Xyleborus*). Holotype ♀; Japan; IRSNB, Brussels.
Figures: Bright 1968b: 1299, Nakane et al. 1963: 384, Nobuchi 1966d: pl. 4.
Distribution: Asia (Bonin Islands/ Anhui, Fujian, Hebei, Hunan, Shangdong, Shanxi, Sichuan, Xizang [Tibet], Zhejiang in China/ Assam, "South India" in India/ Japan/ Korea/ Malaya/ Taiwan/ Thailand/ Vietnam), Australia (introduced), North America (introduced into: Alabama, Connecticut, Florida, Maryland, Pennsylvania, Tennessee, Virginia in USA).
Hosts: *Acacia* sp., *Carya* sp., *Castania* sp., *Cornus* sp., *Ilex* sp., *Hovea* sp., *Juglans nigra*, *Morus alba*, *Prunus* sp., *Quercus* sp., *Rhus* sp., *Terminalia myriocarpa*.
References: (**ay**) Kazud 1967; Murayama 1933a: 2; Takagi 1967. (**bv**) Choo, Woo, & Park 1988; Kovach 1986a. (**cn**) Anonymous 1974e, 1980g; Kovach 1986a; Kovach & Gorsuch 1986; Murayama 1954a: 22; Shiraki 1952; Williams, L. H. & La Fage 1979: 426; Wood, S. L. 1977a: 73. (**ec**) Banno, Nikita, & Kodama 1983: 445; Takagi 1967: 168–170; Yamashita 1966; Yoon et al. 1982. (**hb**) Beaver & Browne 1975: 612; Browne 1961c: 109; Kovach 1986a; Takahashi 1989: 403; Wood, S. L. 1982b: 806; Yamashita 1966; Yoon et al. 1982. (**ds**) Anonymous 1974e, 1980g; Baker, W. L. 1972: 271; Beaver & Browne 1978: 612; Bright 1968b: 1302; Browne 1980c: 482; Cho 1957; Choo 1983: 109; Choo & Woo 1985: 166; Choo, Woo, & Nobuchi 1983: 172, 1988a: 134; Choo, Woo, & Park 1988; Deyrup 1981b: 7; Drooz 1985: 374; Hagedorn 1910d: 110; Kirk 1970; Kleine 1913b: 162, 1914b: 261, 1934a: 175; Ko 1969: 286; Murayama 1933b: 4, 1936a: 135, 1936b: 116, 1937b: 374, 1949c: 103, 1950b: 1297, 1951a: 6, 1952a: 23, 1952b: 169, 1953a: 21, 1953c: 160, 1954a: 22, 1954b: 181, 1955: 103; Nakane et al. 1963: 384; Nobuchi 1966d: 29, 1967: 22; Nobuchi & Ono 1973: 182; Nohira & Ogawa 1986; Shiraki 1952; Wood, S. L. 1977a: 73, 1982b: 806. (**tx**) Blandford 1894d; Bright 1968b: 1299, 1302; Choo 1983: 109; Eggers 1931a: 19–20; Eichhoff 1875: 202, 1878b: 330; Hagedorn 1910a: 156; Murayama 1933a: 2, 31, 1933b: 16–18, 1934a: 4, 1934c: 300, 1936a: 135, 1937b: 374, 1950b: 1297, 1952b: 169, 1953a: 21, 1954b: 181, 1955: 103; Nakane et al. 1963: 384; Niisima 1909: 155, 1910a: 12; Nobuchi 1966d: 29, pl. 4; Schedl 1934f: 1646; Wood, S. L. 1982b: 806.

taboensis Schedl 1952c: 65 (*Xyleborus*). Holotype ♀; Formosa, Tacho (Rato); Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 170.
References: (**ds**) Nobuchi 1967: 23. (**tx**) Schedl 1952c: 65, 1979c: 249; Wood, S. L. 1989: 170.

strohmeyeri Schedl 1975e: 457 (*Xyleborus*). Holotype ♀; S'ghai (South India); Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 170.
References: (**tx**) Schedl 1975e: 457, 1979c: 238; Wood, S. L. 1989: 170.

***rugicollis* (Blandford)** 1898b: 207 (*Xyleborus*). Holotype ♀; Cerro Zunil, Guatemala, 4000–5000 ft; BMNH, London.
Distribution: North America (Guatemala).
References: (**ds**) Atkinson & Equihua 1985b: 237; Blackwelder 1947: 780; Hagedorn 1910d: 110; Kleine 1914b: 371; Wood, S. L. 1982b: 809. (**tx**) Blandford 1898b: 207; Hagedorn 1910a: 156; Wood, S. L. 1982b: 809.

***rusticus* (Wood)** 1974a: 36 (*Xyleborus*). Holotype ♀; 10 km NE Teziutlan, Puebla, Mexico; Wood Collection.
Distribution: North America (Chiapas, Puebla in Mexico).
Hosts: Logs & *Pinus* sp.
References: (**hb**) Atkinson et al. 1986: 35; Wood, S. L. 1982b: 806. (**ds**) Atkinson & Equihua 1988: 85; Atkinson et al. 1986: 35; Wood, S. L. 1982b: 806. (**tx**) Wood, S. L. 1974a: 36, 1982b: 806.

***sakoae* (Schedl)** 1961e: 144 (*Xyleborus*). Holotype ♀; Madagascar, Mt. d'Ambre, Joffreville; IRSM, Madagascar.
Distribution: Madagascar.
References: (**ds**) Schedl 1977b: 137. (**tx**) Schedl 1961e: 144, 1977b: 137, 1979c: 218.

***sandragotoensis* (Schedl)** 1961e: 148 (*Xyleborus*). Holotype ♀; Madagascar, Sandragato; IRSM, Madagascar.
Distribution: Madagascar.
References: (**tx**) Schedl 1961e: 148, 1977b: 165, 1979c: 219.

***sarawakensis* (Eggers)** 1923a: 176 (*Xyleborus*). Holotype ♀; Sarawak auf Borneo; MCG, Genova.
Distribution: Indonesia (Borneo).
References: (**hb**) Browne 1961c: 105. (**ds**) Browne 1961c: 105. (**tx**) Eggers 1923a: 176; Nunberg 1978: 116; Schedl 1939e: 330, 1942a: 187, 1953c: 290.

***scalaris* (Schedl)** 1935d: 95 (*Xyleborus*). Holotype ♀; Costa Rica, Turrialba; Schedl Collection in NHMW, Wien.
Distribution: North America (Costa Rica).
Hosts: Log
References: (**hb**) Wood, S. L. 1982b: 805. (**ds**) Blackwelder 1947: 780; Wood, S. L. 1982b: 805. (**tx**) Schedl 1935d: 95; Wood, S. L. 1982b: 805–806.

***semicarinatus* (Schedl)** 1942c: 191 (*Xyleborus*). Holotype ♀; Neu-Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1942c: 191, 1979c: 224.

***sexdentatus* (Eggers)** 1940d: 148 (*Xyleborus*). Holotype ♀; Java (Batoerraden, G. Slamet); USNM, Washington.
Distribution: Indonesia (Java).
References: (**hb**) Kalshoven 1959c: 157. (**ds**) Kalshoven 1959c: 157. (**tx**) Anderson, W. H. & Anderson 1971: 29; Eggers 1940d: 148–149; Schedl 1951i: 44, 1979c: 227.

***signiceps* (Schedl)** 1962j: 185 (*Xyleborus*). Holotype ♀; Belgisch-Kongo: Mulungu; Schedl Collection in NHMW, Wien.
Distribution: Africa (Zaire).
Hosts: *Moerua* sp.
References: (**tx**) Schedl 1962j: 185, 1979c: 228.

***signifer* (Schedl)** 1968b: 146 (*Xyleborus*). Holotype ♀; Sudan, Equatoria, Yambio; ZMUH, Helsinki.
Distribution: Africa (Sudan).
References: (**ds**) Schedl 1971e: 3. (**tx**) Schedl 1968b: 146, 1979c: 228.

***subnepotulus* (Eggers)** 1930d: 178 (*Xyleborus*). Holotype ♀; Burma (Pyonchaung Reserve, N. Toungoo); FRI, Dehra Dun.
Distribution: Asia (Burma).
Hosts: *Albizzia lebbeki*.
References: (**ds**) Beeson 1930: 85, 261, 1961: 309; Nobuchi 1967: 23. (**tx**) Beeson 1930: 85, 261; Eggers 1930d: 178, 361, 1939c: 114, 119, 1940a: 138; Schedl 1939f: 45–47.

***sulcatus* (Eggers)** 1930d: 180 (*Xyleborus*). Holotype ♀; Assam (Upper Dihing Reserve, Lakhimpur); FRI, Dehra Dun.
Distribution: Asia (Fujian in China/ Assam in India).
Hosts: *Artocarpus lakoocha*.
References: (**ds**) Beeson 1930: 86, 262, 1961: 309; Kleine 1934a: 175; Schedl 1960f: 173. (**tx**) Beeson 1930: 86, 262; Eggers 1930d: 180, 1939b: 13, 1941b: 224; Schedl 1951i: 59, 1960e: 173, 1979c: 246.

***tachygraphus* (Zimmermann)** 1868: 144 (*Xyleborus*). Holotype ♀; North Carolina [USA]; MCZ, Cambridge.
Distribution: North America (Alabama, District of Columbia, Georgia, Illinois, Maryland, Mississippi, New Jersey, North Carolina, Pennsylvania, South Carolina, Virginia, West Virginia in USA).
Hosts: *Acer* sp., *Betula* sp., *Carya* sp., *Castanea dentata*, *Cercis* sp., *Fagus* spp., *Juglans* sp., *Lirodendron* sp., *Rhus* sp.
References: (**bv**) Atkinson, Foltz, & Connor 1988; Kovach 1986a; Turnbow & Franklin 1980. (**cn**) Chittenden 1879: 79–80, 1897: 79; Doane et al. 1936; Howard 1897: 79; Hubbard 1897b: 22; Kovach 1986a; Kovach & Gorsuch 1985. (**ec**) Steinhaus 1946: 404. (**hb**) Atkinson, Foltz, & Connor 1988; Baker, W. L. 1972: 269; Beal & Massey 1945: 55–56; Chamberlin 1939: 441; Doane et al. 1936; Hubbard 1897b: 22; Kovach 1986a; Schwarz 1891b: 62–64. (**ds**) Anonymous 1926c: 520; Atkinson et al. 1991: 160; Baker, W. L. 1972: 269; Beal & Massey 1945: 55–56; Blatchley & Leng 1916: 614; Bright 1968b: 1303; Chamberlin 1939: 441; Chapin & Oliver 1986; Deyrup 1981b: 7; Deyrup & Atkinson 1987b: 68; Drooz 1985: 374; Gemminger & Harold 1872: 2686; Hagedorn 1910d: 112; Henshaw 1885: 148; Kirk 1969, 1970; Kleine 1913b: 168, 1934a: 177; Leng 1920: 341;

Leonard 1928: 520; Schwarz 1890a: 41; Swaine 1909: 156; Turnbow & Franklin 1980; Wood, S. L. 1982b: 808. (**tx**) Beal & Massey 1945: 49; Blatchley & Leng 1916: 614; Bright 1968b: 1303; Chamberlin 1939: 441; Eichhoff 1878b: 323; Hagedorn 1910a: 157; Hopkins 1915b: 56–57, 1915c: 173; Hubbard 1897b: 22; LeConte 1868: 159, 1876: 358, 360; Swaine 1909: 156, 1910b: 161–162, 165; Wood, S. L. 1982b: 808; Zimmermann 1868: 144.

***tenebrosus* (Schedl)** 1937b: 402 (*Xyleborus*). Syntypes ♀; Africa, Congo?; Schedl Collection in NHMW, Wien. Synonomy: Schedl 1962j:166.
Distribution: Africa (Zaire?).
Notes: (1) Schedl 1979c: 251 (citation of holotype invalid). (3) This is a synonym of *ovatus* Eggers (DEB).
References: (**tx**) Schedl 1937b: 402, 1952j: 3, 1957d: 101, 1966j: 166, 1979c: 251.

***tomicoides* (Eggers)** 1923a: 205 (*Xyleborus*). Holotype ♀; Suban Ajan (Sumatra); RNH, Leiden.
Distribution: Indonesia (Sumatra).
References: (**tx**) Eggers 1923a: 205; Schedl 1950g: 895.

***tortuosus* (Schedl)** 1942a: 186 (*Xyleborus*). Lectotype ♀; Malaya, Perak, Trolak F. R., und Larut Hills; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 254.
Distribution: Asia (Malaya).
References: (**hb**) Browne 1961c: 106. (**tx**) Schedl 1942a: 186, 1979c: 254.

***triton* (Schaufuss)** 1905: 9 (*Xyleborus*). Holotype ♀; Madagaskar; Hamburg Museum, lost.
Distribution: Madagascar.
References: (**ds**) Hagedorn 1910d: 112; Kleine 1913b: 163, 1914b: 326; Schedl 1970d: 234, 1977b: 137. (**tx**) Anderson, W. H. & Anderson 1971: 34; Eggers 1922b: 171; Hagedorn 1910a: 157, 1913b: 257; Schaufuss 1905: 9; Schedl 1953d: 69, 1970d: 234, 1977b: 137, 1979c: 256.

***trolaki* (Schedl)** 1939e: 350 (*Xyleborus*). Lectotype ♀; Malaya, Perak: Trolak For. Res.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 256.
Distribution: Asia (Malaya).
References: (**hb**) Browne 1961c: 107. (**ds**) Browne 1962c: 202. (**tx**) Schedl 1939e: 350–351, 1979c: 256.

***tropicus* (Hagedorn)** 1910b: 12 (*Xyleborus*). Syntypes ♀; Kamerun; MNB, Berlin.
Distribution: Africa (Angola/ Cameroon/ Congo/ Equatorial Guinea/ Gabon/ Ghana/ Ivory Coast/ Ruanda/ South Africa/ Zaire/ Zambia).
Hosts: *Albizzia* sp., *Bussea occidentalis*, *Canarium* sp., *Carapa* sp., *Celtis mildbraedii*, *Combretodendron* sp., *Cynometra* sp., *Eucalyptus* spp., *Ficus serotii*, *Garcinia* sp., *Gossweilerodendron* sp., *Gossypium hirsutum*, *Macrolobium* sp., *Myrianthus* sp., *Pentaclethra* sp., *Strombosiopsis* sp., *Sterculia* sp., *Synsepalum* spp., *Terminalia* sp., *Veronia* sp.
References: (**bv**) Schedl 1960j: 53. (**cn**) Ghesquiere 1933a: 27–35, 1933b: 777–785. (**hb**) Loyttyniemi, Beaver, & Loyttyniemi 1984; Schedl 1962j: 186; Thompson, F. G. 1963a: 245. (**ds**) Beaver & Loyttyniemi 1985a: 68; Ferreira 1965: 1126; Ghesquiere 1933a; Hagedorn 1910d: 112; Kleine 1913b: 163, 1914b: 312, 1934a: 176; Mayne & Donis 1962: 323; Roberts 1969: 134; Schedl 1959p: 22, 1960j: 40, 1961f: 84, 1962b: 61, 1962j: 186, 1962k: 1105, 1964e: 69, 1964j: 42, 1965e: 356, 1966c: 229, 1971g: 194, 1972e: 284; Thompson, F. G. 1963a: 245; Wichmann 1954: 522. (**tx**) Beaver & Loyttyniemi 1985a: 68; Eggers 1920: 125, 1927a: 198; Hagedorn 1910a: 157, 1910b: 12; Schedl 1937c: 13, 1952j: 2, 1957d: 17, 1962j: 186, 1962k: 1105.

***trux* (Schedl)** 1937b: 400 (*Xyleborus*). Lectotype ♀; Madagaskar, Sikora; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 257.
Distribution: Madagascar.
References: (**ds**) Schedl 1977b: 139. (**tx**) Schedl 1937b: 400, 1951b: 376, 1977b: 139, 1979c: 257.

***turgidus* (Schedl)** 1962j: 188 (*Xyleborus*). Holotype ♀; Deutsch-Ostafrika: Tanga; Schedl Collection in NHMW, Wien.
Distribution: Africa (Tanzania).
References: (**tx**) Schedl 1962j: 188, 1979c: 259.

***upoluensis* (Schedl)** 1951k: 152 (*Xyleborus*). Lectotype ♀; Upolu, Afiamalu; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 261.
Distribution: Samoan Islands.
Notes: This is apparently a synonym of *wilderi* (DEB).
References: (**tx**) Beaver 1976b: 542; Schedl 1951k: 138, 152, 1979c: 261.

***wilderi* (Beeson)** 1929: 235 (*Xyleborus*). Holotype ♀; Tutuila: Fagasa; BMNH, London.
Distribution: Samoan Islands.
Hosts: *Albizzia falcata*, *Elaeocarpus* sp., *Leucaena* sp.
References: (**hb**) Beaver 1976b: 542. (**ds**) Beaver 1976b: 542; Beeson 1938b: 294. (**tx**) Beeson 1929: 235–236; Schedl 1951k: 137.

Genus *Amasa* Lea

AMASA LEA 1894: 322. Type-species: *Amasa thoracica* Lea = *Tomicus truncatus* Erichson, monobasic.
Pseudoxyleborus Eggers 1930d: 206. Type-species: *Pseudoxyleborus beesoni* Eggers, monobasic. Synonymy: Wood 1984b: 223.
References: (**tx**) Browne 1961c: 172; Eggers 1930d: 206–207; Murayama 1950: 49; Schedl 1936h: 60–62; Wood, S. L. 1984b: 223.
Anaxyleborus Wood 1980b: 90. Type-species: *Tomicus truncatus* Erichson, original designation. Synonymy: Wood 1983a: 647.
References: (**tx**) Wood, S. L. 1980b: 90, 1983a: 647.

References: (**hb**) Wood, S. L. 1986a: 83. (**ds**) Wood, S. L. 1986a: 83. (**tx**) Lea 1894: 322; Wood, S. L. 1984b: 223, 1986a: 83.

***amputatus* (Blandford)** 1894c: 575 (*Xyleborus*). Holotype ♀; Japan: Higo; BMNH, London.
Figures: Nakane et al. 1963:pl. 192, Nunberg 1978: 106, Yin, Huang, & Li 1984: 178.
Distribution: Asia (Japan/ Taiwan).
Hosts: *Acer* sp., *Cinnamomum mairei*, *C.* sp., *Machilus* sp., *Pelargonium hortorum*, *Ziziphus jujuba*.
References: (**ds**) Choo & Woo 1989; Hagedorn 1910d: 98; Kleine 1913b: 160, 1914b: 261; Murayama 1952a: 18, 1953c: 155, 1954b: 174; Nakane et al. 1963: 383; Nobuchi 1967: 21; Sampson 1921: 29; Yin, Huang, & Li 1984: 178. (**tx**) Blandford 1894c: 575; Hagedorn 1910a: 152; Murayama 1934c: 299, 1934d: 505–512, 1952a: 18, 1954b: 174; Nakane et al. 1963: 383, pl. 192; Nobuchi 1985c: 23; Nunberg 1978: 105–106; Sampson 1921: 29; Schedl 1934f: 1645.

***anomalus* (Schedl)** 1955b: 298 (*Xyleborus*). Holotype ♀; Deutsch-Neu-Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1955b: 281, 298, 1979c: 21.

***aspersus* (Sampson)** 1921: 31 (*Xyleborus*). Holotype ♀; Penang; BMNH, London.
Distribution: Asia (Malaya/ Thailand), Indonesia (Borneo).
Hosts: *Eugenia* sp.
Notes: (3) Browne 1948: 904 (described male).
References: (**cn**) Browne 1952. (**ec**) Browne 1958b. (**hb**) Beaver & Browne 1978: 603; Browne 1958b, 1961c: 172. (**ds**) Beaver & Browne 1975: 297, 1978: 603; Browne 1961c: 172; Sampson 1921: 31; Schedl 1936d: 2. (**tx**) Browne 1948: 904; Sampson 1921: 31; Schedl 1936d: 2, 1936h: 62.

***banksiae* (Schedl)** 1964d: 213 (*Xyleborus*). Holotype ♀; Dwellingup, W. A. [West Australia]; BMNH, London.
Distribution: Australia (West Australia).
Hosts: *Banksia grandis*.
References: (**ds**) Schedl 1964d: 213. (**tx**) Schedl 1964d: 213, 1979c: 33.

***batoerradensis* (Schedl)** 1939f: 39 (*Pseudoxyleborus*). Lectotype ♀; Batoerraden, G. Slamet, Java; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 36.
Distribution: Asia (Malaya), Indonesia (Java).
Hosts: *Eugenia aromatica*, *Myristica fragrans*.
Notes: (1) A Schedl note in his collection lists this as a synonym of *laticaudatus*.
References: (**ds**) Beaver & Browne 1978: 603; Browne 1961c: 173; Nunberg 1961b: 610. (**tx**) Schedl 1939f: 39–40, 1979c: 36.

***beesoni* (Eggers)** 1930d: 207 (*Pseudoxyleborus*). Holotype ♀; Burma (Ataran Division, Moulmein); FRI, Dehra Dun.
Distribution: Asia (Burma/ Malaya), Indonesia (Borneo).
Hosts: *Nephelium longana*, *Xerospermum intermedium*.
References: (**ec**) Browne 1958b: 169. (**hb**) Browne 1958b: 169, 1961c: 173. (**ds**) Beeson 1961: 295; Browne 1961c: 173. (**tx**) Eggers 1930d: 207; Schedl 1936h: 60, 1939f: 39, 1940d: 134, 1942a: 171, 1979c: 36.

***bicostatus* (Sampson)** 1921: 28 (*Xyleborus*). Holotype ♀; Mt. Matang, Sarawak, Borneo; BMNH, London.
Distribution: Indonesia (Borneo).
References: (**ds**) Sampson 1921: 28. (**tx**) Sampson 1921: 28.

***calamoides* (Murayama)** 1934c: 291 (*Xyleborus*). Syntypes ♀; Nagoa Forest, Miyazaki pref., Kiushu; Murayama Collection in USNM, Washington.
Distribution: Asia (Japan).
Hosts: *Quercus gilva*.
References: (**ds**) Murayama 1954b: 202; Nobuchi 1985c: 24. (**tx**) Murayama 1934c: 291, 1954b: 202.

***circumcisulus* (Schedl)** 1954a: 140, 151 (*Xyleborus*). Lectotype ♀; Batoerraden, G. Slamet, Java; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 58.
Distribution: Indonesia (Java).
Hosts: *Eugenia lineata*.
References: (**tx**) Schedl 1954a: 140, 151, 1979c: 58.

***concitatus* (Schedl)** 1969a: 214 (*Xyleborus*). Holotype ♀; Formosa, Keelung to Tokyo (Japan), imported; PPST, Tokyo.
Figures: Nobuchi 1978a:pl. 2.
Distribution: Asia (Taiwan).
References: (**ds**) Nobuchi 1978a: 23. (**tx**) Nobuchi 1978a:pl. 2; Schedl 1969a: 214, 1979c: 61.

***consularis* (Schedl)** 1955b: 299 (*Xyleborus*). Holotype ♀; Samoa; Schedl Collection in NHMW, Wien.
Figures: Schedl 1955b: 299 (female).
Distribution: Samoan Islands.
References: (**tx**) Schedl 1955b: 286, 299, 1979c: 64.

***cylindriformis* (Schedl)** 1942c: 190 (*Xyleborus*). Holotype ♀; Neu-Guinea; Schedl Collection in NHMW, Wien.
Distribution: Fiji Islands, New Guinea.
Hosts: Myrtaceae.
References: (**tx**) Schedl 1942c: 190, 1979c: 74.
circulicauda Browne 1974a: 68 (*Xyleborus*). Holotype ♀; Fiji: Viti Levu, Galoa; BMNH, London. Synonymy: Schedl 1980d: 120.
References: (**ec**) Roberts 1977a: 253. (**hb**) Roberts 1977a: 253. (**ds**) Browne 1974a: 65,

68. (**tx**) Browne 1974a: 65, 68; Schedl 1980d: 120.

***dasyurus* (Browne)** 1950a: 645 (*Xyleborus*). Holotype ♀; Malaya: Kelantan, Pulai Chondong; BMNH, London.
Distribution: Asia (Malaya).
References: (**hb**) Browne 1961c: 160. (**ds**) Browne 1950a: 645, 1961c: 160.

***doliaris* (Schedl)** 1959a: 511 (*Xyleborus*). Holotype ♀; Ceylon: Denawake Group; Schedl Collection in NHMW, Wien.
Distribution: Asia (Sri Lanka).
References: (**ds**) Schedl 1959a: 511. (**tx**) Schedl 1959a: 511, 1979c: 83.

***eugeniae* (Eggers)** 1930d: 183 (*Xyleborus*). Holotype ♀; India: Uttar Pradesh, Lachiwala, Dehra Dun; FRI, Dehra Dun.
Distribution: Asia (Bengal, Uttar Pradesh in India/Sri Lanka), Indonesia (Borneo).
Hosts: *Eugenia jambolana*.
References: (**ay**) Gardner 1934b. (**ds**) Beeson 1930; Kleine 1934a: 173; Schedl 1959a: 511, 1971a: 281. (**tx**) Beeson 1930: 57, 233; Eggers 1930d: 183–184; Gardner 1934b; Schedl 1959a: 511, 1979c: 92.

***exactus* (Schedl)** 1964i: 246 (*Xyleborus*). Holotype ♀; Australia: Queensland, Cairns; Schedl Collection in NHMW, Wien.
Distribution: Australia (Queensland).
References: (**ds**) Kendrick & Molnar 1965: 39–43. (**tx**) Schedl 1964i: 246, 1979c: 93.

***foveicollis* (Browne)** 1950b: 646 (*Xyleborus*). Holotype ♀; Malaya: Selangor, Kepong; BMNH, London.
Distribution: Asia (Malaya).
Hosts: *Palaquium stellatum*.
References: (**ds**) Browne 1961c: 160. (**hb**) Browne 1961c: 160. (**tx**) Browne 1950b: 646.

***fulgens* (Schedl)** 1975f: 365 (*Xyleborus*). Holotype ♀; Upper Manki logging area, Bulolo, Morobe District, New Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1975f: 365, 1979c: 101.

***fuscipilosus* (Eggers)** 1940d: 137 (*Xyleborus*). Holotype ♀; Java (Preanger, Tangkoeban Prahoe); Drescher Collection, cotype in Eggers Collection, in NHMW, Wien.
Distribution: Indonesia (Java).
Notes: (1) Schedl 1979c: 102 (citation of lectotype invalid).
References: (**tx**) Eggers 1940d: 137–138; Schedl 1979c: 102.

***geminatus* (Hagedorn)** 1904d: 126 (*Xyleborus*). Holotype ♀; Dardjiling [India]; Hamburg Museum, lost.
Distribution: Asia (Bengal in India).
References: (**ds**) Hagedorn 1910d: 105; Kleine 1913b: 161, 1914b: 277. (**tx**) Beeson 1930: 40; Hagedorn 1904d: 126, 1910a: 154.

***glaucus* (Sampson)** 1921: 30 (*Xyleborus*). Holotype ♀; Penang; BMNH, London.
Distribution: Asia (Malaya).
References: (**ds**) Beaver & Browne 1978: 609; Browne 1961c: 173; Sampson 1921: 30. (**tx**) Eggers 1930d: 206; Sampson 1921: 30.

***latetruncatus* (Schedl)** 1942a: 190 (*Xyleborus*). Lectotype ♀; Malaya, Pahang, Cameron's Highland, 5000 Fuss; Schedl Collection, designated by Schedl 1979c: 136.
Distribution: Asia (Malaya).
References: (**tx**) Schedl 1942a: 190, 1979c: 136.

***laticaudatus* (Eggers)** 1923a: 168 (*Xyleborus*). Holotype ♀; M. Singalang auf Sumatra; MCG, Genova.
Distribution: Indonesia (Sumatra).
Notes: (1) A Schedl note in his collection lists *batoerradensis* Schedl as a synonym of this species.
References: (**tx**) Eggers 1923a: 168–169.

***mixtus* (Schedl)** 1979g: 108 (*Xyleborus*). Holotype ♀; Papua [New Guinea], Bulolo, Morobe District, Upper Manki L. A.; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1979g: 108.

***neotruncatus* (Schedl)** 1978c: 307 (*Xyleborus*). Holotype ♀; Brasilien, Nova Teutonia, 300–500 m, 27 degrees 11′ Br., 52 degrees 23′ L.; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
Notes: (3) Either this species is placed in the wrong genus or it represents an unreported introduction; it may be allied to *Xyleborus exaratus*.
References: (**tx**) Schedl 1978c: 307.

***nitidior* (Eggers)** 1940d: 136 (*Xyleborus*). Holotype ♀; Java (Batoerraden, G. Slamet); Drescher Collection.
Distribution: Indonesia (Java).
References: (**tx**) Eggers 1940d: 136–137; Schedl 1951i: 44, 1954a: 143.

***nobilis* (Eggers)** 1940d: 134 (*Pseudoxyleborus*). Lectotype ♀; Java (Batoerraden, G. Slamet); Eggers Collection, type and 1 cotype in NHMW, Wien, designated by Schedl 1979c: 171.
Distribution: Indonesia (Java).
Hosts: *Turpinia pomifera*.
References: (**hb**) Kalshoven 1959c: 163. (**ds**) Kalshoven 1959c: 163; Schedl 1961c: 71. (**tx**) Eggers 1940d: 134–135; Schedl 1936h: 62, 1937e: 550, 1951i: 44, 1954a: 142, 1961c: 71, 1964g: 242, 1969a: 214, 1979c: 171.

***opalescens* (Schedl)** 1937e: 550 (*Xyleborus*). Lectotype ♀; Borneo: Sarawak, Mt. Dulit, 4000 ft.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 180.

Distribution: Asia (Malaya/ Vietnam), Indonesia (Borneo).
Hosts: *Eugenia* sp., *Tristania* sp.
References: (**ds**) Browne 1961c: 173; Schedl 1964g: 242, 1974c: 262. (**tx**) Schedl 1936h: 62, 1937e: 550, 1942a: 190, 1964g: 242, 1969a: 214, 1979c: 180.

***orbicaudatus* (Eggers)** 1940d: 135 (*Xyleborus*). Holotype ♀; Java (Preanger, Tangkoeban Prahoe); Drescher Collection, 1 Eggers cotype, in NHMW, Wien.
Distribution: Indonesia (Java).
References: (**tx**) Eggers 1940d: 135–136; Schedl 1951i: 51, 1955b: 298, 1979c: 180.

***resecans* (Eggers)** 1930d: 184 (*Xyleborus*). Holotype ♀; India: Assam (Central Range, Sibsagar); FRI, Dehra Dun.
Distribution: Asia (Andaman Islands, Assam, Bengal in India).
Hosts: *Dipterocarpus pilosus*, *D. turbinatus*.
References: (**ds**) Beeson 1930. (**tx**) Beeson 1930: 77, 253; Eggers 1930d: 184.

***resectus* (Eggers)** 1927b: 391 (*Xyleborus*). Syntypes 2 ♀; Benkoelen and Soekaranda (Sumatra); RNH, Leiden, and Stettin Museum, lost, automatic.
Distribution: Asia (Sri Lanka), Indonesia (Java, Sumatra).
Notes: (3) This could be a synonym of *Xylosandrus mancus*.
References: (**hb**) Kalshoven 1959c: 159. (**ds**) Kalshoven 1959c: 159; Kleine 1934a: 175; Schedl 1971a: 218. (**tx**) Eggers 1927b: 391; Kalshoven 1959b: 94–95, 1960d.

abruptus Eggers 1923a: 169 (*Xyleborus*). Syntypes 2 ♀; Benkoelen and Soekaranda (Sumatra); RNH, Leiden, and Stettin Museum, lost, preoccupied by Sampson 1914.
References: (**hb**) Miller, N. C. E. 1941. (**tx**) Eggers 1923a: 169, 1927b: 391.

opacicauda Eggers 1940d: 136 (*Xyleborus*). Holotype ♀; Java (Batoerraden, G. Slamet); Drescher Collection [Eggers cotype in NHMW, Wien]. Synonymy: Kalshoven 1959b: 94.
References: (**ds**) Kalshoven 1959c: 159. (**tx**) Eggers 1940d: 136; Kalshoven 1959b: 94–95; Schedl 1951i: 43, 81, 1954a: 142, 1979c: 178.

***schlichi* (Stebbing)** 1914: 592 (*Xyleborus*). Syntypes ♀; India: Kachugaon, Goalpara, Assam; FRI, Dehra Dun.
Distribution: Asia (Assam, Bengal in India/ Malaya), Indonesia (Java).
Hosts: *Castanea* sp., *Castanopsis sumatrana*, *C.* sp., *Dryobalanops oblongifolia*, *Garcinia* sp., *Lithocarpus wallichianus*, *Pasania* sp., *Quercus* sp., *Shorea robusta*.
References: (**cn**) Beeson 1916b: 1–5; Mathur & Singh 1961a: 40; Pierce, W. D. 1917: 193; Stebbing 1914: 592. (**ec**) Beeson 1923; Stebbing 1914: 592. (**hb**) Beaver & Browne 1978: 613; Beeson 1916a: 223, 1919: 1–23, 1923; Stebbing 1914: 592. (**ds**) Beaver & Browne 1978: 613; Beeson 1916a, 1923, 1930: 79, 255; Mathur & Singh 1961a: 40; Pierce, W. D. 1917: 193; Schedl 1975g: 294. (**tx**) Beeson 1930: 255; Eggers 1936e: 89; Schedl 1963h: 268, 1979c: 222; Stebbing 1914: 592.

truncatus Stebbing 1907: 40 (*Acanthotomicus*). Holotype ♀; Assam: Kachugaon Forests; FRI, Dehra Dun, preoccupied by Erichson 1842.
References: (**ds**) Kleine 1913b: 132, 163, 1914b: 277. (**tx**) Nunberg 1959a: 441; Stebbing 1907: 40.

glaber Eggers 1930d: 185 (*Xyleborus*). Holotype ♀; India: Assam (Haflong, Cachar); FRI, Dehra Dun. Synonymy: Wood 1989: 169.
References: (**hb**) Kalshoven 1959c: 159. (**ds**) Kalshoven 1959a: 159; Schedl 1971c: 364. (**tx**) Eggers 1930d: 185; Schedl 1979c: 105; Wood, S. L. 1989: 169.

uniseriatus Eggers 1936e: 89 (*Xyleborus*). Holotype ♀; Java (Batoerraden, G. Slamet); ZMA, Amsterdam. Synonymy: Schedl 1963h: 268.
References: (**hb**) Browne 1961c: 160; Kalshoven 1959c: 159. (**ds**) Browne 1961c: 160; Kalshoven 1959c: 159; Schedl 1961c: 71, 1971c: 365. (**tx**) Eggers 1936e: 89; Kalshoven 1959b: 94–95, 1960d; Schedl 1942d: 6, 1951i: 80, 1953c: 290, 1963h: 268, 1979c: 261.

verax Schedl 1939f: 43 (*Xyleborus*). Lectotype ♀; Java, Mt. Gede, Tapos; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 265. Synonymy: Kalshoven 1959b: 95.
References: (**hb**) Kalshoven 1959c: 159. (**tx**) Kalshoven 1959b: 95; Schedl 1939f: 43, 1979c: 265.

brevipennis Schedl 1971c: 378 (*Xyleborus*). Holotype ♀; Sarawak: Semengoh; BMNH, London. Synonymy: Wood 1989: 169.
References: (**tx**) Schedl 1971c: 378–379; Wood, S. L. 1989: 169.

***sirambeanus* (Eggers)** 1923a: 169 (*Xyleborus*). Holotype ♀; Sumatra (Si Rambe); MCG, Genova.
Distribution: Indonesia (Sumatra).
References: (**tx**) Eggers 1923a: 158, 169–170; Schedl 1954c: 154.

***striatotruncatus* (Schedl)** 1936j: 29 (*Xyleborus*). Lectotype ♀; Malay Peninsula, Perak: Chenderoh, Batu Talam; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 237.
Distribution: Asia (Malaya), Indonesia (Borneo, Java).
Hosts: *Madhuca sp.*, *Nephelium* sp., *Scaphium* sp., *Shorea leprosula*.
References: (**hb**) Browne 1961c: 160. (**ds**) Browne 1961a: 306, 1961c: 160, 1980a: 373; Ohno et al. 1988a: 94, 1989: 64; Schedl 1936j: 29, 1971c: 365. (**tx**) Schedl 1936j: 29–30, 1936h: 61, 1951i: 44, 1954a: 143, 1955b: 309, 1979c: 237.

***tereticollis* (Schedl)** 1951i: 82 (*Xyleborus*). Holotype ♀; Sumatra; Schedl Collection in NHMW, Wien.
Distribution: Indonesia (Sumatra), New Guinea.
References: (**bv**) Gray, B. 1974c. (**hb**) Gray, B. 1974c. (**tx**) Schedl 1951i: 82, 1954a: 151, 1979c: 252.

***truncatiferus* (Schedl)** 1955b: 309 (*Xyleborus*). Holotype ♀; Fiji; Schedl Collection in NHMW, Wien.
Distribution: Fiji Islands.
References: (**cn**) Schedl 1979f: 103. (**ec**) Roberts 1977a: 265. (**hb**) Roberts 1977a: 265. (**ds**) Browne 1974a: 65; Roberts 1977a: 265. (**tx**) Schedl 1955b: 286, 298, 309, 1979c: 256.

***truncatiformis* (Eggers)** 1923a: 170 (*Xyleborus*). Holotype ♀; Moroka in Sudost Neu Guinea (1300 m); MCG, Genova.
Distribution: New Guinea.
References: (**tx**) Eggers 1923a: 170, 1940d: 138; Schedl 1964d: 213.

***truncatus* (Erichson)** 1842: 212 (*Tomicus*). Holotype ♀; Vandiemensland [Tasmania]; MNB, Berlin.
Figures: Bain 1976: 183, Zondag 1977.
Distribution: Australia (New South Wales/ Queensland/ Tasmania).
Hosts: *Alphitonia petriei*, *Eucalyptus* spp., *Leptospermum ericoides*, *Metrosideros excelsa*.
Notes: (3) Schedl 1980: 187 (described male).
References: (**cn**) Anonymous 1963h, 1966g; Brimblecombe 1956; Browne 1968: 717; Froggatt 1927; Green 1912a: 39; Kershaw 1973; Milligan 1969b: 60; Moore 1959: 186; Newman 1924: 20–24; Zondag 1977. (**ec**) Anonymous 1966g; Milligan 1969b: 60; Moore 1959: 186–193, 1962a: 8. (**hb**) Brimblecombe 1956; Browne 1968: 717; Froggatt 1927; Milligan 1973a; Zondag 1977. (**ds**) Anonymous 1963h: 47, 1963h; Browne 1968: 717; Gemminger & Harold 1872: 2692; Green 1912a: 39; Ibera 1959: 162; Kleine 1913b: 163, 1914b: 299, 1934a: 176; Kuschel 1972; Moore 1959: 186–193, 1961: 92; Sampson 1921: 29; Schedl 1936g: 528, 1936j: 29, 1962i: 74. (**tx**) Bain 1976: 183; Beeson 1938: 294; Carne et al. 1980; Eggers 1923a: 170, 1940d: 135; Eichhoff 1878b: 317; Erichson 1842: 212; Green 1912a: 39; Hagedorn 1910a: 107, 152, Lea 1904: 106; Nunberg 1959: 441; Sampson 1921: 29; Schedl 1936g: 528, 1936h: 60–61, 1942c: 163, 1951i: 82, 1957d: 35, 84, 1980b: 187; Stebbing 1907: 40; Zondag 1977.
thoracicus Lea 1893: 322. Syntypes ♀; Tamworth and Armidale [New South Wales]; not located.
Synonymy: Lea 1904: 106.
References: (**tx**) Lea 1893: 321–322, 1904: 106.

***umbratulus* (Schedl)** 1975g: 221 (*Xyleborus*). Holotype ♀; New Guinea, Dagi River, West New Britain District; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1975g: 221, 1979c: 259.

***versicolor* (Sampson)** 1921: 29 (*Xyleborus*). Holotype ♀; Penang; BMNH, London.
Figures: Wood 1960a: 56.
Distribution: Asia (Burma/ Bengal in India/ Malaya/ Sri Lanka), Indonesia (Borneo, Java), Micronesia (Caroline Islands, Ponape Island).
Hosts: *Alstonia angustifolia*, *Elaeocarpus ferrugineus*, *E.* sp., *Pternandra coerulea*, *Randia anisophylla*, *Rhodamnia trinervia*, *Shorea curtisii*, *Schoutenia accrescens*.
References: (**cn**) Mathur & Singh 1961a: 33; Yunus & Hua 1980: 231. (**hb**) Beaver & Browne 1978: 614; Browne 1961c: 159–160; Kalshoven 1959c: 159. (**ds**) Beaver & Browne 1978: 614; Browne 1961a: 305, 1961c: 159; Kalshoven 1959c: 159; Mathur & Singh 1961a: 33; Sampson 1921: 29; Wood, S. L. 1960a: 51. (**tx**) Browne 1949b: 904; Eggers 1940d: 136; Kalshoven 1959b: 94; Murayama 1934c: 292; Sampson 1921: 29; Wood, S. L. 1960a: 51, 55–56.

Genus *Euwallacea* Hopkins

EUWALLACEA HOPKINS 1915b: 54. Type-species: *Xyleborus wallacei* Blandford, original designation.
References: (**hb**) Wood, S. L. 1986a: 83. (**ds**) Wood, S. L. 1986a: 83. (**tx**) Hopkins 1915b: 54; Schedl 1952k: 162; Wood, S. L. 1986a: 83.

***andamanensis* (Blandford)** 1896b: 222 (*Xyleborus*). Holotype ♀; Andaman Islands; BMNH, London.
Figures: Nunberg 1959a:pl. 28, figs. 4–5, Wood 1960a: 58.
Distribution: Asia (Bangladesh/ Burma/ Andaman Islands, Assam, Bengal, Madhya Pradesh, Maharashtra, Tamil Nadu in India/ Malaya/ Thailand/ Vietnam), Indonesia (Borneo, Buru, Mantawei, Sumatra), New Guinea.
Hosts: *Acacia catchu*, *Alstonia* sp., *Artocarpus* spp., *Bauhinia variegata*, *Butea frondosa*, *Cordia grandis*, *Dalbergia* sp., *Dichipsis elliptica*, *Dillenia pentagyna*, *Garuga pinnata*, *Gmelina arborea*, *Holigarna arnettiana*, *Ixora parviflora*, *Parabaena sagittata*, *Pterocarpus marsupium*, *Randia uliginosa*, *Salmalia insignis*, *Sapium eugeniaefolium*, *Saraca* sp., *Shorea assamica*, *Strychnos nux-vanica*, *Symingtonia populnea*, *Symplocos theaefolia*, *Tectona grandis*, *Terminalia tomentosa*, *Tetrameles nudiflora*, *Thespesin populnea*, *Turpina* sp., *Vateria indica*, *Vitex peduncularis*, *Wrightia tinctoria*, *Xanthophyllum* sp., *Xylia xylocarpa*, *Zanthoxylem rhetsa*.
References: (**cn**) Mathur & Singh 1960b: 96, 1961a: 10; Roonwal 1954: 85. (**ec**) Batra 1963b: 217. (**hb**) Beaver & Browne 1978: 602; Browne 1961c: 127; Kalshoven 1959c: 138. (**ds**) Beaver & Browne 1978: 603; Beeson 1930: 210, 225; Browne 1961c: 127–128, 1981b: 598; Eggers 1926a: 300; Hagedorn 1910d: 99; Kalshoven 1959c: 138; Kleine 1913b: 160, 1914b, 1934a: 172; Mathur &

Singh 1961a: 10, 1961b: 96; Roonwal 1954: 85; Schedl 1969c: 52, 1975e: 450. (**tx**) Beeson 1930: 210, 225; Blandford 1896b: 222; Eggers 1926a; Hagedorn 1910a: 152; Schedl 1939e: 330, 1942d: 5, 1951i: 70, 1954a: 140, 153, 1958k: 150, 1970i: 224, 1979c: 19.

noxius Sampson 1913: 445 (*Xyleborus*). Holotype ♀; S. Malabar, Madras, India; BMNH, London. Synonymy: Beeson 1930: 251.
Notes: (3) Schedl 1951: 70 (described male).
References: (**cn**) Ballard 1921; Chandra 1981; Mathur & Singh 1960a: 22, 1960b: 6, 1961a: 13, 1961b: 14; Stebbing 1914: 598. (**ec**) Chatterjee & Chatterjee 1951; Stebbing 1914: 598. (**hb**) Beaver & Browne 1975: 299; Chandra 1981; Chatterjee & Chatterjee 1951; Stebbing 1914: 598. (**ds**) Ballard 1921; Beaver & Browne 1975: 299; Beeson 1930: 212–213, 251, 1961: 308; Bhasin, Roonwal, & Singh 1958; Browne 1984b: 287; Chatterjee & Chatterjee 1951; Kalshoven 1959: 138; Kleine 1934a: 174; Mathur & Singh 1960a: 22, 1960b: 6, 1961a: 13, 1961b: 14; Nobuchi 1978a: 32; Schedl 1975a: 451, 1975e: 451. (**tx**) Beeson 1930: 212–213, 251; Eggers 1925: 159; Nobuchi 1978a:pl. 3; Nunberg 1959a: 432, 438; Sampson 1913: 445; Schedl 1951i: 70, 1971f: 155; Stebbing 1914: 598; Wood, S. L. 1960a: 58.

siobanus Eggers 1923a: 186 (*Xyleborus*). Syntypes ♀; Insel Mentawei (Si Oban, Sipora); MCG, Genova, Eggers Collection (USNM, Washington or NHMW, Wien?), MNB, Berlin. Synonymy: Schedl 1958k: 150.
References: (**tx**) Eggers 1923a: 184–186; Nunberg 1959a: 438; Schedl 1942d: 6, 1951i: 42, 1954a: 143, 154, 1958k: 150, 1979c: 231.

granulipennis Eggers 1930d: 194 (*Xyleborus*). Lectotype ♀; Nadghani (1500 ft.), Nilambur, Madras; USNM, Washington, designated by Anderson & Anderson 1971: 14. Synonymy: Wood 1989: 172.
References: (**cn**) Mathur & Singh 1960b: 73, 1961b: 70. (**ds**) Beeson 1930: 61, 237, 1961: 305; Kleine 1934a: 173; Mathur & Singh 1960b: 74, 1961b: 70; Schedl 1962b: 186, 1974c: 262. (**tx**) Anderson, W. H. & Anderson 1971: 14; Beeson 1930: 61, 237; Browne 1965: 248; Eggers 1930d: 194–195, 1940d: 138; Schedl 1939f: 48, 1979c: 112; Wood, S. L. 1989: 172.

burmanicus Beeson 1930: 210 (*Xyleborus*). Holotype ♀; Burma: Bilumyo Reserve, Katha; FRI, Dehra Dun. Synonymy: Schedl 1970i: 224.
References: (**cn**) Mathur & Singh 1960a: 23, 1960b: 6, 1961b: 14; Roonwal 1954: 36. (**ds**) Beeson 1930: 210; Kleine 1934a: 172; Mathur & Singh 1960a: 23, 1960b: 6, 1961b: 14; Roonwal 1954: 36. (**tx**) Beeson 1930: 210; Eggers 1935c: 309; Schedl 1970i: 224, 1979c: 49.

intextus Beeson 1930: 211 (*Xyleborus*). Holotype ♀; Bilumyo Reserve, Katha, Burma; FRI, Dehra Dun. Synonymy: Wood 1989: 172.
References: (**cn**) Mathur & Singh 1960b: 6, 1961a: 23, 1961b: 14; Roonwal 1954: 33. (**ds**) Bhasin, Roonwal, & Singh 1958; Kleine 1934a: 173; Mathur & Singh 1960b: 6, 1961a: 23, 1961b: 14; Roonwal 1954: 33. (**tx**) Beeson 1930: 210–212; Schedl 1951i: 68, 1971f: 155, 1979c: 128; Wood, S. L. 1989: 172.

senchalensis Beeson 1930: 212 (*Xyleborus*). Syntypes ♀; Bengal: Rangirum, Senchal Range, Darjeeling; FRI, Dehra Dun. Synonymy: Wood 1989: 172.
References: (**cn**) Mathur & Singh 1961a: 84. (**ds**) Beeson 1961: 309; Mathur & Singh 1961a: 84; Wood, S. L. 1960a: 51. (**tx**) Beeson 1930: 210–212, 257; Schedl 1979c: 224; Wood, S. L. 1960a: 51, 58.

***aplanatus* (Wichmann)** 1914a: 412 (*Xyleborus*). Holotype ♀; ♀ Upper Rotung, ♂ Sadiya, Assam; not located.
Distribution: Asia (Assam in India).
Hosts: *Shorea robusta*.
References: (**bv**) Beeson 1916a: 223. (**cn**) Mathur & Singh 1961a: 45. (**hb**) Beeson 1916a: 223. (**ds**) Mathur & Singh 1961a: 45. (**tx**) Wichmann 1914a: 412.

***artelaevis* (Schedl)** 1942a: 196 (*Xyleborus*). Holotype ♀; Malaya, Perak, Trolak F. R.; BMNH, London.
Distribution: Asia (Malaya), Indonesia (Borneo).
Hosts: Annonaceae, *Partocarpus* sp.
References: (**hb**) Browne 1961c: 146. (**ds**) Browne 1961c: 146. (**tx**) Schedl 1942a: 196, 1958h: 498.

***barbatomorphus* (Schedl)** 1951i: 72 (*Xyleborus*). Holotype ♀; Formosa, Chekakunai, Daibu; Schedl Collection in NHMW, Wien.
Distribution: Asia (Taiwan).
References: (**ds**) Nobuchi 1967: 21. (**tx**) Schedl 1951i: 72, 1979c: 34.

***barbatulus* (Schedl)** 1934d: 86 (*Xyleborus*). Lectotype ♀; Java Gn. Gedeh, 1480 m; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 34.
Distribution: Indonesia (Java).
Hosts: *Eupatorium* sp.
References: (**tx**) Schedl 1934d: 86, 1942a: 193, 1951i: 72, 1979c: 34.

***barbatus* (Hagedorn)** 1910b: 11 (*Xyleborus*). Syntypes 3 ♀; Sumatra; 1 in Hamburg Museum, lost, 2 in MNB, Berlin.
Distribution: Australia, Indonesia (Mentawei, Sumatra), New Guinea.
Hosts: *Araucaria cunninghamii*, *Cinnamomum* sp., *Pterocymbium beccarii*. See also Gray & Wylie 1974.
References: (**bv**) Gray, B. 1974c. (**cn**) Gray, B. & Wylie 1974; Roberts 1987. (**hb**) Gray, B. 1974c; Gray, B. & Wylie 1974; Roberts 1987. (**ds**) Hagedorn 1910d: 99; Kleine 1913b: 160, 1914b: 286;

Schedl 1936j: 19, 1966b: 47, 1968c: 263, 1971f: 148, 1979a: 158. (**tx**) Eggers 1927b: 408; Hagedorn 1910a: 152, 1910b: 11; Nobuchi 1983: 302; Nunberg 1959a: 415; Schedl 1934c: 39, 1934d: 86, 1936d: 19, 1937e: 543, 1942a: 193, 1954a: 140, 1955b: 281; Wylie & Yule 1977.

***benguetensis* (Schedl)** 1951i: 71 (*Xyleborus*). Holotype ♀; Philippinen, Luzon, Baguio, Mt. St. Thomas; Schedl Collection in NHMW, Wien.

Distribution: Philippine Islands (Luzon).

References: (**ds**) Schedl 1966b: 47. (**tx**) Nobuchi 1983: 302; Schedl 1951i: 71, 1979c: 36.

***bicolor* (Blandford)** 1894d: 113 (*Xyleborus*). Syntypes 5 ♀; Nagasaki, Inasa [Japan]; BMNH, London.

Distribution: Asia (Bangladesh/ Burma/ Yunnan in China/ Andaman Islands, Assam, Bengal, Nicobar Islands, Uttar Pradesh in India/ Japan/ Malaya/ Sri Lanka), Fiji Islands, Indonesia (Borneo, Java), Philippine Islands (Luzon), Samoan Islands, Solomon Islands.

Hosts: *Albizzia moluccana*, *Castanopsis tribuloides*, *Duabanga sonneratioides*, *Eugenia jambolana*, *Heritiera fomes*, *Isonandia polyantha*, *Lindera latifolia*, *Mallotus philippinensis*, *Myristica andamanica*, *Nyssa sessilifolia*, *Shorea robusta*, *Sideroxylon maranthum*, *Terminalia belerica*, *T. bialata*, *T. procera*.

References: (**cn**) Beaver 1988a: 65; Mathur & Singh 1960b: 73, 1961a: 45, 1961b: 26; Roonwal 1954: 54. (**ec**) Beeson 1923; Roberts 1977a: 252. (**hb**) Beaver 1988a: 65; Beeson 1923; Browne 1961c: 147–148; Kalshoven 1959c: 141; Roberts 1977a: 252; Speyer 1923: 19; Takahashi 1989: 403. (**ds**) Beaver 1988a: 65; Beeson 1923, 1930: 213, 1938b, 1961: 303; Bhasin, Roonwal, & Singh 1958; Blandford 1894c; Browne 1961a: 305, 1961c: 147, 1974a: 65, 1980a: 372; Hagedorn 1910d: 99; Kalshoven 1959c: 141; Kleine 1913b: 160, 1914b: 260; Mathur & Singh 1960b: 73, 1961a: 45, 1961b: 26; Murayama 1951a: 6, 1954b: 176, 1955: 102; Roonwal 1954: 54; Schedl 1966b: 47; Speyer 1923: 11–23. (**tx**) Beeson 1930: 213; Blandford 1894d: 113; Eggers 1923a, 1930d: 204; Hagedorn 1910a: 152; Murayama 1934c: 295, 299, 1954b: 176, 1955: 102; Nobuchi 1983: 302; Sampson 1923b: 289; Schedl 1934f: 1645, 1958k: 147.

bicolor unimodus Beeson 1929: 238 (*Xyleborus*). Holotype ♀; Tutuila: Pago Pago; BMNH, London. Synonymy: Wood 1989: 172.

References: (**ec**) Roberts 1977a: 266. (**hb**) Roberts 1977a: 266. (**ds**) Roberts 1977a: 266. (**tx**) Beeson 1929: 238–239, 1938: 291; Browne 1974a: 71; Schedl 1951k: 137; Wood, S. L. 1989: 172.

rodgeri Beeson 1930: 213 (*Xyleborus*). Holotype ♀; Andamans: Middle Island; FRI, Dehra Dun. Synonymy: Wood 1989: 173.

References: (**cn**) Mathur & Singh 1961b: 38; Roonwal 1954: 67. (**ds**) Beeson 1930: 213, 253–255, 1961: 308; Mathur & Singh 1961b: 38; Roonwal 1954: 67; Schedl 1959a: 504, 1971a: 279, 1971c: 370. (**tx**) Beeson 1930: 213; Schedl 1959a: 504, 1979c: 213; Wood, S. L. 1989: 173.

rodgeri privatus Beeson 1930: 213 (*Xyleborus*). Syntypes ♀; Andamans: Middle Island; FRI, Dehra Dun. Synonymy: Wood 1989: 173.

References: (**cn**) Mathur & Singh 1961b: 28. (**ds**) Beeson 1961: 308; Mathur & Singh 1961b: 28. (**tx**) Beeson 1930: 213, 255; Schedl 1959a: 504, 1979c: 213; Wood, S. L. 1989: 173.

rameus Schedl 1940b: 441 (*Xyleborus*). Syntypes ♀; Mt. Makiling, Laguna, Luzon; Schedl Collection in NHMW, Wien. Synonymy: Kalshoven 1959: 141.

Notes: (1) Schedl 1979c: 209 (citation of holotype invalid).

References: (**ds**) Lever 1940: 38–42, 1942: 23–24. (**tx**) Kalshoven 1959: 141; Schedl 1940b: 441–442, 1942d: 47, 1951k: 138, 1958h: 498, 1958k: 147, 1979c: 209.

***comptus* (Sampson)** 1919: 111 (*Xyleborus*). Holotype ♀; Ceylon; BMNH, London.

Distribution: Asia (Sri Lanka).

Hosts: *Hevea brasiliensis*.

References: (**cn**) Mathur & Singh 1960b: 43. (**hb**) Speyer 1923: 19. (**ds**) Beeson 1930: 231, 1961: 303; Kleine 1934a: 172; Mathur & Singh 1960b: 43; Sampson 1919: 171; Schedl 1959a: 498. (**tx**) Beeson 1930: 231; Sampson 1919: 11; Schedl 1959a: 498.

***destruens* (Blandford)** 1896b: 221 (*Xyleborus*). Syntypes ♂♀; Gilolo, Java; BMNH, London.

Figures: Nobuchi 1978a:pl. 3, Wood 1960a: 58.

Distribution: Asia (Yunnan in China/ Andaman Islands in India/ Malaya), Australia, Fiji Islands, Indonesia (Borneo, Java, Sumatra), Micronesia (Caroline Islands, Palau Island), New Guinea, New Hebredes Islands, Philippine Islands, Samoan Islands.

Hosts: *Artocarpus elasticus*, *Intsia palembanica*, *Tectona grandis*, *Theobroma cacao*, *Turpinia latifolia*.

Note: (3) *E. tonkinensis* is a synonym (DEB).

References: (**bv**) Kabir & Giese 1960a: 889; Kalshoven 1962a. (**cn**) Alphen de Veer & E. J. Van 1956a: 387; Browne 1968b: 714; Ferguson 1949: 387–389; Hagedorn 1913a; Hall 1919: 1–50, 1921: 12, 1922: 45, 1925: 1–51, 1926: 12, 1932: 265; Kalshoven 1922: 788, 1928: 596, 1932: 243, 1933b: 57, 1936c, 1938: 78, 1939: 322, 1951: 851, 1953b: 157, 1961c, 1961cc, 1962a; Kleine 1932a: 307; Muller 1933: 105–107, 125, 187; Natawiria & Tarumingkeng 1971; Van der Goot 1928: 54; Yunus & Hua 1980: 230. (**ec**) Browne 1958b; Kabir 1966a: 893, 1966b: 899; Kalshoven 1961c: 5–21, 1962a; Norris 1979. (**hb**) Beeson 1929: 240; Browne

1958b, 1961c: 132, 1968b: 714; Hagedorn 1913a; Kalshoven 1951: 851, 1958b: 158, 1959a: 225, 1959c: 140, 1961c, 1962a; Kleine 1932a: 307; Natawiria & Tarumingkeng 1971; Roepke 1919c: 68. (**ds**) Alphen de Veer & E. J. Van 1956; Beeson 1929: 240, 1938b: 292; Browne 1961c: 132–133, 1965a: 189, 1966: 248, 1968b: 714, 1980c: 484, 1980d: 490; Hagedorn 1910d: 101, 1913a; Kalshoven 1920: 1–26, 1925b: 11, 1932: 243, 1933b: 57, 1959c: 140, 1962a: 7; Kleine 1913b: 160, 1932a: 307, 1934a: 173; Murayama 1936b: 115; Nobuchi 1978a: 33; Nunberg 1961b: 610; Ohno, Yoneyama, & Nakazawa 1987a: 88, 1987b: 94; Ohno, Yoshioka, Uchida, Yoneyama, & Nakazawa 1989: 61; Ohno, Yoskioka, Yoneyama, & Nakazawa 1988a: 93; Schedl 1936g: 528, 1964c: 305, 1969a: 204, 1971f: 148, 1980b: 184; Wood, S. L. 1960a: 51. (**tx**) Beeson 1929: 240; Blandford 1896b: 221, 1898c; Eggers 1923a: 200, 1927c: 98, 1930d: 193–194; Hagedorn 1910a: 153; Kalshoven 1959a: 225; Nobuchi 1978a: pl. 3; Nunberg 1959a: 423; Ohno, Yoneyama, & Nakazawa 1982a: 4; Roepke 1919c: 68–71; Schedl 1942d: 5–6, 1950f: 52, 1951i: 42, 72, 1951k: 137, 1955b: 283; Wood, S. L. 1960a: 53, 58; Wylie & Yule 1977.

pseudobarbatus Schedl 1942a: 193 (*Xyleborus*). Syntypes ♀; Malaya, Kuala Lumpur; BMNH, London, and Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 173.
References: (**ds**) Browne 1961c: 133. (**tx**) Schedl 1942a: 193, 1951i: 72, 1979c: 200; Wood, S. L. 1989: 173.

nandarivatus Schedl 1950f: 52 (*Xyleborus*). Syntypes 2 ♀; Viti Levu: Navai Mill, near Nandarivatu, Tholo North; BPBM, Honolulu and Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 173.
References: (**ec**) Roberts 1977a: 260. (**hb**) Roberts 1977a: 260. (**ds**) Browne 1974a: 65; Roberts 1977a: 260; Schedl 1972b: 266. (**tx**) Schedl 1950f: 52, 1979c: 163; Wood, S. L. 1989: 173.

***dilatatiformis* (Schedl)** 1971a: 285 (*Xyleborus*). Holotype ♀; Sabaragamuwa Prov., Deerwood, Kuruwitia, 6 miles NNW Ratnapura; Ent. Mus., Univ. Lund Collection.
Figures: Schedl 1971a: 283.
Distribution: Asia (Sri Lanka).
References: (**tx**) Schedl 1971a: 283, 285, 1979c: 80.

***filiformis* (Schedl)** 1975f: 364 (*Xyleborus*). Holotype ♀; Upper Manki logging area, Bulolo, Morobe Dist., New Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1975f: 364, 1979c: 96.

***fornicatus* (Eichhoff)** 1868c: 151 (*Xyleborus*). Syntypes, sex?; Ceylon; Hamburg Museum, lost.
Figures: Frolich & Rodewald 1969, Nobuchi 1967:pl. 1, Samuelson 1981: 54, Wood 1960a: 56.
Distribution: Asia (Bangladesh/ Bonin Islands/ Burma/ Guangdong, Sichuan, Yunnan Xizang [Tibet] in China/ Assam, Bengal, Maharashtra, Tamil Nadu, Uttar Pradesh in India/ Malaya/ Sri Lanka/ Taiwan/ Thailand/ Tonkin Island in Vietnam), Australia, Fiji Islands, Grande Comoro Island, Hawaiian Islands, Indonesia (Java, Sumatra), Micronesia (Caroline Islands), New Britain Island, New Guinea, Niue Island, North America (introduced into: Panama), Philippine Islands, Reunion Island, Samoan Islands.
Hosts: *Albizzia falcata*, *A. moluccana*, *A. odoratissima*, *A. sumatrana*, *Artocarpus* sp., *Bauhinia variegata*, *Camellia sinensis*, *Cassia siamea*, *Casuarina equisitifolia*, *Chlorophora excelsa*, *Cinnamomum* sp., *Clerodendron colebrookianum*, *C. infortunatum*, *Crotalaria striata*, *Crotalaria* sp., *Embelia* cf. *insumbens*, *Erythrina lithosperma*, *E. orientalis*, *Gliricidia sepium*, *Gmelina arborea*, *Grevillia robusta*, *Hevea brasiliensis*, *Ixora parviflora*, *Myristica fragrans*, *Ochroma lagopus*, *Odina wodier*, *Populus* sp., *Pterocy bium beccarii*, *Ricinus communis*, *Robinia pseudoacacia*, *Salmalia malabarica*, *Shorea robusta*, *Tectona grandis*, *Tephrosia candida*, *T. vogelli*, *Terminalia catappa*, *Theobroma cacao*, *Whitfordiodendron pubescens*, *Xylia xylocarpa*.
Notes: (3) Schedl Collection lists *nigricans* Eggers, nomen nudum, as a synonym.
References: (**ay**) Farris 1963: 257; Fernando 1959, 1960, 1963; Finnegan 1963: 137; Gardner 1934b: 1–17; Herfs 1949: 26; Sivapalan & Shivanandaraiah 1977b, 1997c. (**bv**) Aulman 1911; Bletchly 1961: 15; Calnaido 1965, 1966; Gray, B. 1974c; Judenko 1957: 29, 1958d: 104; Kalshoven 1961b: 102; Wickremasinghe & Thirugnanasuntheram 1980. (**cn**) Ananda 1937: 1424, 1943: 10–15; Andrews 1913: 94–95; Anonymous 1916b: 41, 1956b: 83–143, 1960c, 1960t, 1961d, 1966j, 1967f, 1967i, 1967u, 1973p; Anstead 1920: 179; Austin 1954, 1955, 1956: 97–102, 1958; Baptist 1956: 28–35; Barlow 1896; Beeson 1925: 371–372; Bernard 1908a, 1914, 1921: 1–32; Bos 1923; Boutan 1907; Browne 1952, 1968: 715; Calnaido 1965: 249, 1966: 185–199, 1971, 1972; Calnaido & Kanapathipillai 1967: 275–281; Calnaido, Ranasinghe, & Thirugnansuntharan 1972a, 1972c; Calnaido & Thirugnansuntharan 1966: 28–45; Chevalier 1931; Cowling et al. 1956; Cranham 1960, 1961a: 62, 1966a: 56–58, 1966c: 481–504; Cranham, Danthanarayana, & Ranaweera 1962; Cranham, Kanapathapillai, & Kathiravetpillai 1968; Cranham & Kathiravetpillai 1964; Danthanarayana 1966: 100–113, 1967: 153–177, 1968; Danthanarayana, Fernando, & Shanmugam 1968: 94–118; Devadas et al. 1989; Dias 1936: 60–66; Duport 1911; Ebeling 1959; Eden 1958, 1965; Fernando 1959: 50, 475–480; Fisher, Thompson, & Webb 1953; Frohlich & Rodewald 1969: 99; Gadd 1941a, 1942a, 1942b, 1943a, 1943b, 1943c, 1944a, 1944b, 1944c,

1944d, 1944e, 1946a, 1946b, 1947a: 197, 1947b: 114, 1949: 61–76; Gadd & Jardine 1923: 299–304; Gadd & Jepson 1922: 1–30; Green 1903a, 1903b, 1906, 1909a, 1910, 1911: 2–5, 1912a: 38; Grunwald 1930: 1–58; Hagedorn 1913a; Hainsworth 1952: 18; Hall 1919: 1–50, 1924: 1–47, 1924: 1–53, 1925: 1–51, 1926: 12; Herfs 1949: 216, 1950: 5; Hill, D. S 1983: 496; Hutson 1920: 8–10, 1924: 91–93, 1932: 111–121; Illankoon 1956; Jardine 1920: 31–34, 1923b: 72–75; Jepson 1920, 1921: 23–30, 1922a: 24–27, 1922b: 118–125, 1922c, 1923: 19–21, 1926a, 1933: 106–123; Jepson & Gadd 1922, 1925, 1926; Joachim 1958: 61, 1959: 29; Judenko 1956: 103, 1958b: 104, 115, 1958c: 47, 51, 1959: 81, 1960a: 19–25, 1960b, 1960c: 72–75, 1961a: 185, 1961b, 1961c, 1962; Judenko, Shanmugan, & Hasselo 1962; Kalshoven 1924c: 58–72, 1925b: 1, 1925c: 3, 1928: 617, 1932: 251, 1933: 5, 1951: 851, 1953a: 233, 1954: 10; King 1934: 26–30, 34–37, 1937: 31–37, 1939: 35, 1940a: 111–116, 1940b: 38–40, 1941: 43–49; Kleine 1913b: 161, 1914b: 274, 1932a: 306, 1934a: 173; Lester-Smith 1937: 36; Lewton-Brain 1914: 1–45; Light 1927: 16–20, 1928: 25–34, 1929: 37–48, 1947: 17; Lovett 1923: 5; Marchal 1909: 228; Mathur & Singh 1960a: 5, 1960b: 17, 1961a: 13, 1961b: 14; Maxwell-Lefroy 1909: 393; Mayne 1945: 356; Muraleedharan 1984, 1986: 86, 1987; Muraleedharan & Radhakrishnan 1989; Newton 1960; Petch 1921: 233; Pierce, W. D. 1917: 211; Portsmouth 1956: 92; Pyper 1956: 127; Ramachandra 1928: 1–30; Ranasinghe & Wickremasinghe 1988; Ranaweera 1959: 78, 1967; Ranaweera & Fernando 1967; Rao, G. N. 1973; Rau 1936: 35, 1939: 20–27, 1940: 15, 1941: 41–50; Reeve 1923: 1–22; Roark 1939: 308; Roepke 1909: 365; Roonwal 1954: 48; Rutgers & Dammerman 1914: 32; Rutherford 1914a: 307–309, 1914b: 220, 1914c: 131, 1915: 220–222; Samarakoon & Shanmugam 1967; Schedl 1936g: 528; Shanmugam 1967a, 1967b, 1967c; Shanmugam & Fernando 1967; Sonan 1939: 795–800; Sonan & Tadasa 1939: 83–110; Speyer 1916: 248–252, 1917a: 7–9, 1917b: 1, 1917c: 152–155, 1918a: 102, 1918b: 373, 1919a: 67, 1919c: 1, 1919d: 1, 1922: 1–16, 1923: 11–23; Stebbing 1914: 589; Stockdale 1920: 276; Stubbs 1914: 1049; Thirugnanasuntharan 1987; Tolhurst 1956: 120; Vuillaume et al. 1981; Walter 1956: 107; Webster & Visser 1956: 114; Wickremasinghe, Perera, & Perera 1976; Wickremasinghe & Thirugnanasuntheran 1980; Wilson 1956: 129; Wurth 1910: 104; Wyniger 1962a: 37; Yunus & Hua 1980: 230. (**ec**) Anonymous 1956b: 83–143; Banerjee 1983; Baptist 1956; Barlow 1896; Browne 1958b; Calnaido 1964; Calnaido & Kanapathapillai 1967; Calnaido, Ranasinghe, & Thirugnanasuntharan 1972b; Calnaido & Thirugnanasuntharan 1966; Cowling 1956; Danthanarayana 1973; Danthanarayana & Kathiravetpillai 1970; Farris 1963: 257; Fernando 1960,1963; Finnegan 1963: 137; Gadd 1942a; Gadd & Loos 1947; Green 1903b, 1909b, 1910, 1911; Grunwald 1930; Judenko 1958a: 112; Muraleedharan, Selvasundaram, & Radhakrishnan 1988; Neger 1911a: 53; Norris 1979; Ranasinghe & Wickremasinge 1988; Sivapalan 1977; Stebbing 1914: 589; Thompson, W. R. & Simmonds 1964: 39, 1965: 110; Vuillaume et al. 1981. (**hb**) Andrews 1913; Anonymous 1956n: 83–143; Anstead 1920; Aulmann 1911; Beeson 1916a: 216–223; Browne 1935a, 1958b, 1961c: 128–132, 1968: 715; Calnaido 1965, 1966; Calnaido, Ranasinghe, & Thirugnanasuntharan 1972b; Cranham 1966c; Danthanarayana 1973; Duport 1911; Eden 1958, 1965; Fernando 1960, 1963; Gadd 1941b, 1942a, 1946b, 1946c, 1947a, 1949; Gadd & Loos 1947: 13–18; Gray, B. 1974c; Green 1903b; Hagedorn 1912: 33, 1913a; Herfs 1949: 26; Hill, D. S. 1983: 496; Judenko 1957: 29, 1957a: 56, 1958a: 112, 1958d: 104; Kalshoven 1924c, 1951: 851, 1958a: 147, 185–187, 1959c: 140, 1961b; Kleine 1932a: 306; Koningsberger & Zimmerman 1901: 94; Morstatt 1924: 46; Muruleedharan 1984, 1986: 86; Sivapalan 1975, 1977; Sivapalan & Shivanandarajah 1977a, 1977b; Speyer 1917b: 1, 1917c: 152, 1923: 12; Stebbing 1914: 589; Wickremasinge & Thirugnanasuntheran 1980. (**ds**) Anonymous 1960t, 1966j, 1967i, 1973p; Anstead 1920; Beaver 1990a: 280; Beaver & Browne 1978: 608; Beaver & Maddison 1990: 137; Beeson 1916a, 1925, 1930, 1938: 292, 1961: 304; Bhasin, Roonwal, & Singh 1958; Blandford 1895a, 1896b, 1898a; Bletchly 1961: 15; Browne 1935a, 1961c: 128, 1968: 715, 1974a: 65; Carpenter 1929; Chevalier 1931; Dumbleton 1954; Ebeling 1959; Gadd 1946b; Gemminger & Harold 1872: 2685; Green 1912a: 38; Hagedorn 1910d: 104, 1913a; Hill, D. S. 1983: 496, 1987: 341; Judenko 1960b, 1960c; Kalshoven 1924b: 356, 1925b: 1, 1925c: 3, 1932: 251, 1933: 5, 1958a: 147, 187, 1958c: 220–230, 1959c: 140, 1961b; Kleine 1932a: 306; Koningsberger 1908: 76; Lefroy & Howlett 1909: 393; Mathew 1982, 1986, 1987: 188; Mathur & Singh 1960a: 5, 1960b: 17, 1961a: 13, 1961b: 14; Miwa 1931: 269; Muraleedharan & Kandasamy 1981; Nobuchi 1967: 21; Nobuchi & Ono 1973: 182; Nunberg 1961b: 610; Pierce, W. D. 1917: 211; Rai & Bhandary 1973; Roberts 1977a: 259; Roonwal 1954: 48; Rutherford 1914a: 307; Samuelson 1981: 73; Schedl 1936g: 528, 1959a: 498, 1961c: 70, 1962b: 186, 1966b: 54, 1969c: 52, 1969d: 10, 1971a: 282, 1975a, 1977b: 144, 1979a: 158; Speyer 1916: 248, 1918c: 1; Sprecher 1934: 150; Swezey 1941: 121; Thomas, R. T. S. 1960a, 1960b; Wood, S. L. 1960a: 51, 1980b: 353; Yin & Huang 1981: 568; Yin, Huang, & Li 1984: 167; Yunus & Hua 1980: 230. (**tx**) Aulmann 1911: Beeson 1930: 234–236; Eggers 1920, 1922a: 88, 1922b: 174, 1923d: 185–186, 1927b: 407, 1930d: 192–196; Eichhoff 1868c: 151, 1878b: 327; Frolich & Rodewald 1969; Gardner 1934b; Green

1912a: 38; Hagedorn 1910a: 154, 1912b; Nobuchi 1967:pl. 1, 1983: 302; Nunberg 1959: 425, 1961b: 610; Sampson 1911: 383–384, 1913: 443–444, 1923a: 270; Samuelson 1981: 54, 73; Schedl 1934g: 177–178, 1939e: 330, 1941f: 112, 1942a: 170–171, 1951i: 42, 59, 1952c: 62, 1954a: 141, 1955b: 284–285, 1958b: 101, 1958k: 150–151, 1959a: 498, 1977b: 144; Stebbing 1914: 589; Weele 1910: 308; Wood, S. L. 1960a: 51, 56; Wylie & Yule 1977; Yin & Huang 1981: 568; Yin, Huang, & Li 1984: 167. (**ms**) Bernard 1914; Jardine 1920: 31.

fornicatior Eggers 1923a: 184 (*Xyleborus*). Lectotype ♀; Ceylon (Peradeniya); USNM, Washington, designated by Anderson & Anderson 1971: 13. Synonymy: Beeson 1930: 235.
References: (**cn**) Gadd 1941, 1943, 1944, 1946; Kleine 1932a: 307; Thirugnanasuntharan & Jayachandran 1989. (**hb**) Kleine 1932a: 307. (**ds**) Beeson 1930: 235, 1961: 305; Kleine 1932a: 307. (**tx**) Anderson, W. H. & Anderson 1971: 13; Beeson 1930: 59–60; Eggers 1922a: 84–88, 1922b: 174, 1923a: 184–185, 1936d: 626; Nunberg 1959a: 425; Sampson 1923a: 270; Schedl 1931c: 346, 1934g: 177, 1959a: 498, 1979c: 99.

whitfordiodendrus Schedl 1942a: 189 (*Xyleborus*). Lectotype ♀; Malaya, Negri Sembilan, Pasoh F. R.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 269. Synonymy: Wood 1989: 173.
References: (**ds**) Browne 1961c: 126. (**tx**) Schedl 1942a: 189, 1951i: 62, 1979c: 269; Wood, S. L. 1989: 173.

perbrevis Schedl 1951i: 59 (*Xyleborus*). Holotype ♀; Philippinen, Prov. Rizal, Mt. Puro; Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 173.
References: (**ds**) Schedl 1966b: 63, 1975h: 352. (**tx**) Nobuchi 1983: 303; Schedl 1951i: 59, 1979c: 188; Wood, S. L. 1989: 173.

schultzei Schedl 1951i: 68 (*Xyleborus*). Lectotype ♀; Philippinen, Luzon, Manila, Mt. Makiling; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 222. Synonymy: Wood 1989: 173, Beaver 1991: 90.
References: (**ds**) Browne 1974a: 65; Schedl 1966b: 68. (**tx**) Beaver 1991: 90; Nobuchi 1983: 303; Schedl 1950f: 40, 1951i: 59, 68, 1952b: 364, 1979c: 222; Wood, S. L. 1989: 173.

tapatapaoensis Schedl 1951k: 152 (*Xyleborus*). Lectotype ♀; Upolu, Tapatapoa, 800 ft.; Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 173.
References: (**hb**) Beaver 1976b: 541. (**ds**) Beaver 1976b: 541. (**tx**) Schedl 1951k: 138, 152, 1979c: 250; Wood, S. L. 1989: 173.

***fulvus* (Murayama)** 1936a: 142 (*Xyleborus*). Holotype ♀; Hokidaisen, Japan; Murayama Collection in USNM, Washington.
Distribution: Asia (Japan).
References: (**ds**) Murayama 1936a: 132, 142–143. (**tx**) Murayama 1936a: 132, 142–143; Nobuchi 1985c: 24.

***galeatus* (Blandford)** 1894d: 123 (*Xyleborus*). Holotype ♂; Nagasaki, Japan; BMNH, London.
Distribution: Asia (Japan).
References: (**ds**) Blandford 1894c: 579; Hagedorn 1910d: 105; Kleine 1913b: 161, 1914b: 260; Nobuchi 1985c: 24. (**tx**) Blandford 1894d: 123; Hagedorn 1910a: 154; Murayama 1934: 289; Schedl 1934f: 1646.

***goloanus* Browne** 1974a: 69. Holotype ♀; Fiji: Viti Levu, Galoa; BMNH, London.
Distribution: Fiji Islands.
Notes: (3) Schedl 1980d: 121 (a synonym of *illustrius*). Beaver 1991: 90 (a good species).
References: (**tx**) Browne 1974a: 65; Roberts 1977a: 259. (**tx**) Beaver 1991: 90; Browne 1974a: 65, 69; Schedl 1980d: 121.

***granosus* (Schedl)** 1957d: 101 (*Xyleborus*). Holotype ♀; Congo Belge: Yangambi; MRCB, Tervuren.
Figures: Nunberg 1963b:pl. 16.
Distribution: Africa (Zaire).
Hosts: *Afrostyrax lepidophyllus*, *Allophyllus africanus*, *Dalium corbisieri*, *Guarea cedrata*, *Pycanthus angolensis*.
References: (**hb**) Schedl 1962j: 109–110. (**ds**) Schedl 1962h: 60, 1962j: 109–110, 1962k: 1100. (**tx**) Anonymous 1962j: 109–110, 1979c: 110; Browne 1965a: 202; Nunberg 1963b: 34, pl. 16; Schedl 1957d: 101.

***illustrius* Schedl** 1939f: 51. Lectotype ♀; Java, Mt. Gede, Tapos; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 120.
Distribution: Indonesia (Java), Fiji Islands.
Hosts: Rattan.
References: (**tx**) Schedl 1939f: 49–52, 1979c: 120.

***interjectus* (Blandford)** 1894c: 576 (*Xyleborus*). Holotype ♀; Japan, China (Chusan Is.); BMNH, London.
Figures: Kumar & Chandra 1977: 43 (male), Nobuchi 1978a:pl. 3, Samuelson 1981: 56.
Distribution: Asia (Bangladesh/ Burma/ Fujian, Gansu, Guangdong, Hunan, Sichuan, Yunnan, Xizang [Tibet] in China/ Andaman Islands, Assam, Bengal, Maharashtra, Tamil Nadu, Uttar Pradesh in India/ Japan/ Nepal/ Sri Lanka/ Taiwan/ Vietnam), Hawaiian Islands, Indonesia (Borneo, Java, Mentawei, Sumatra), Philippine Islands.
Hosts: *Anthocephalus cadamba*, *Artocarpus integrifolia*, *Bombax malabaricum*, *Castanopsis indica*, *Cudrania javanensis*, *Erythrina* spp., *Euphorbia royleana*, *Ficus* spp., *Garuga pinnata*, *Gmelina arborea*, *Hevea brasiliensis*, *Hymenodictyon excelsum*, *Kydia calycina*, *Macaranga denticulata*, *Machilus* sp., *Mangifera indica*, *Odina wodier*, *Pinus massoniana*, *Poinciana elata*, *Pop-*

ulus sp., *Pterocarpus marsupium*, *Salmalia insignis*, *S. malabarica*, *Sarcocephalus cordatus*, *Shorea assamica*, *S. robusta*, *Spondias magnifera*, *Sterculia alata*, *S. campanulata*, *S. ornata*, *S. villosa*, *Tectona grandis*, *Terminalia bellerica*, *T. myriocarpa*, *Tetrameles nudiflora*, *Theobroma cacao*, *Xylia xylocarpa*.

Notes: (3) In the FRI, Dehra Dun Collection, *lopehuensis* Beeson, nomen nudum, is a synonym. Kumar & Chandra 1977: 34 (described male).

References: (**cn**) Chatterjee 1917b: 1–4; Green 1912a: 39; Mackenzie 1922: 1–14; Roonwal 1954: 30; Stebbing 1914: 588; Yunus & Hua 1980: 230. (**ec**) Browne 1958b; Mathew 1985; Stebbing 1914: 588. (**hb**) Beeson 1933: 7–12; Browne 1958b, 1961c: 124–126; Kalshoven 1959c: 138; Speyer 1923: 18; Stebbing 1914: 588. (**ds**) Beeson 1930: 239, 1933: 7–12, 1961: 306; Bhasin, Roonwal, & Singh 1958; Blandford 1894c, 1895a; Browne 1980a: 372; Chatterjee 1917b: 1–4; Green 1912a: 39, 1916: 608–636; Hagedorn 1910d: 106; Kalshoven 1959c: 138; Kleine 1913b: 161, 1914b: 260, 280, 1934a: 173; Mathew 1987: 189; Murayama 1934d: 508, 1936a: 133; Nobuchi 1967: 22, 1978a: 33; Ohno, Yoneyama, & Nakazawa 1982b: 8; Ohno et al. 1988a: 94; Roonwal 1954: 30; Schedl 1936d: 4, 1959a: 500, 1965a: 340, 1965g: 22, 1966b: 57, 1969a: 207, 1971a: 278, 1971c: 368, 1972j: 225, 1973b: 211, 1973c: 379, 1974c: 262, 1975a, 1975e: 451; Yin, Huang, & Li 1984: 166; Yunus & Hua 1980: 230. (**tx**) Beeson 1930: 239, 1933: 12; Blandford 1894c: 576; Eggers 1923a: 197–200, 1925: 159, 1927b: 408, 1930d: 192, 195, 1932d: 296; Green 1912a: 39; Hagedorn 1910a: 154; Kumar & Chandra 1977: 34, 43; Murayama 1934c: 299, 1936a: 133–134; Nobuchi 1978a:pl. 3, 1983: 303, 1985c: 25; Samuelson 1981: 56, 77; Schedl 1933e: 103, 1934f: 1646, 1936d: 4, 1939e: 331, 1942a: 189, 1942d: 5, 36, 1951i: 42, 68, 1958k: 155, 1959a: 500, 1961b: 71, 1961f: 93, 1965g: 22, 1972q: 258; Stebbing 1914: 588; Yin & Huang 1981: 568; Yin, Huang, & Li 1984: 166.

pseudovalidus Eggers 1925: 159 (*Xyleborus*). Syntypes, sex?; Tenasserim (Birma), Fuhosho (Formosa), OstJava; Prague Museum, and 1 in Eggers Collection, NHMW, Wien. Synonymy: Schedl 1958a: 155.

References: (**hb**) Kalshoven 1959: 139. (**tx**) Eggers 1925: 159, 1927b: 407, 1936d: 626, 1941b: 222; Schedl 1950g: 893, 1951i: 71, 1953e: 22, 1955b: 45, 1958k: 155, 1979c: 202.

***khayae* (Schedl)** 1957e: 880 (*Xyleborus*). Holotype ♀; Tanganyika; BMNH, London.

Distribution: Africa (Tanzania).

Hosts: *Khaya nyasica*.

References: (**ds**) Schedl 1965j: 259. (**tx**) Schedl 1957e: 880, 1962j: 259, 1979c: 132.

***kororensis* (Wood)** 1960a: 63 (*Xyleborus*). Holotype ♀; Koror, Palau Islands, Micronesia; USNM, Washington.

Figures: Wood 1960a: 62.

Distribution: Micronesia (Koror in Palau Islands).

References: (**ds**) Ohno et al. 1988a: 94. (**tx**) de Ruette 1970: 115; Wood, S. L. 1960a: 62–63.

***laevis* (Eggers)** 1923a: 201 (*Xyleborus*). Lectotype ♀; Kendal auf Java, Ralum (Neupommern); USNM, Washington, designated by Anderson & Anderson 1971: 17.

Figures: Nobuchi 1978a:pl. 3, Wood 1960a: 62.

Distribution: Asia (Yunnan in China/ Malaya), Bismarck Islands, Indonesia (Borneo, Java), Micronesia (Caroline Islands, Kusaie Island, Ponape Island), New Guinea, Philippine Islands.

Hosts: *Eugenia* sp., *Theobroma cacao*. Browne 1961c: 145 cites 11 plant families as hosts without naming the genera or species.

References: (**ec**) Wichmann 1955a: 97. (**hb**) Browne 1961c: 145–146; Kalshoven 1959a: 225, 1959c: 141. (**ds**) Beeson 1938b: 292; Browne 1966: 254, 1980a: 373, 1981a: 125, 1984a: 150; Kalshoven 1959c: 141; Kleine 1934a: 174; Nobuchi 1978a: 36; Ohno et al. 1987: 88, 1988a: 94, 1989a: 62; Schedl 1966b: 58; Wichmann 1955a: 97; Wood, S. L. 1960a: 51. (**tx**) Anderson, W. H. & Anderson 1971: 17; Beeson 1929: 238–239; Eggers 1923a: 201, 1927b: 408; Kalshoven 1959a: 225; Nobuchi 1978a:pl. 3; Schedl 1936h: 64–65, 1938f: 51, 1939e: 354, 1940b: 441–442, 1942a: 196, 1942c: 164, 1942d: 48, 1950e: 214, 1950g: 895, 1979c: 136; Wood, S. L. 1960a: 51, 62–63.

***limatus* (Schedl)** 1936h: 65 (*Xyleborus*). Holotype ♀; Luzon, Laguna Prov., Mt. Maquiling; Schedl Collection in NHMW, Wien.

Distribution: Asia (Malaya), Fiji Islands, Indonesia (Borneo, Java), New Guinea, Philippine Islands (Luzon).

Hosts: *Daemonorops* sp. (or *Calamus* sp.), *Hopea ferrea*, *Pterocarpus indicus*, *Whitfordiodendron pubescens*, *Xanthophyllum curtisii*.

References: (**hb**) Browne 1961c: 146–147. (**ds**) Beaver & Browne 1978: 609; Browne 1961c: 146–147, 1962c: 202, 1974a: 65; Schedl 1971c: 371. (**tx**) Schedl 1936h: 65, 1942a: 171, 1950f: 40, 1954a: 142, 1955b: 285, 1979c: 138.

***loricatus* (Schedl)** 1933d: 200 (*Xyleborus*). Holotype ♀; Mt. Maquiling, Laguna Prov., Luzon; Schedl Collection in NHMW, Wien.

Distribution: Philippine Islands (Luzon).

References: (**ds**) Schedl 1966b: 59. (**tx**) Nobuchi 1983: 303; Schedl 1933d: 200, 1979c: 142.

***luctuosus* (Eggers)** 1939b: 13 (*Xyleborus*). Holotype ♀; Nordost-Birma (Kambaiti, 7000 Fuss); NHR, Stockholm.

Distribution: Asia (Burma).

References: (**tx**) Eggers 1939b: 13.

***lugubris* (Eggers)** 1927c: 98 (*Xyleborus*). Holotype ♀; Philippinen; Hamburg Museum, lost.
Distribution: Philippine Islands.
References: (**ds**) Schedl 1966b: 59. (**tx**) Eggers 1927c: 98; Nobuchi 1983: 303.

***malloti* (Eggers)** 1930d: 192 (*Xyleborus*). Holotype ♀; Dehra Dun, United Provinces; FRI, Dehra Dun.
Distribution: Asia (Bangladesh/ Tamil Nadu, Uttar Pradesh in India).
Hosts: *Ficus hispida*, *Gmelina arborea*, *Maesa* sp., *Mallotus philippinensis*.
References: (**ds**) Beeson 1930: 245, 1961: 307; Kleine 1934a: 174. (**tx**) Beeson 1930: 245; Eggers 1930d: 192; Schedl 1979c: 147.

***metanepotulus* (Eggers)** 1939c: 119 (*Xyleborus*). Holotype ♀; Formosa (Hoorin Kwarenko); Chujo Collection.
Distribution: Asia (Taiwan).
References: (**ds**) Nobuchi 1967: 22. (**tx**) Eggers 1939c: 119.

***nigrosetosus* (Schedl)** 1939f: 49 (*Xyleborus*). Lectotype ♀; Celebes, Gorontalo; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 168.
Distribution: Indonesia (Celebes).
Hosts: Rattan.
References: (**hb**) Kalshoven 1959c: 145. (**ds**) Kalshoven 1959c: 145. (**tx**) Schedl 1939f: 48–49, 1951i: 68, 1979c: 168.

***oparunus* (Beeson)** 1940: 201 (*Xyleborus*). Holotype ♀; Mangareva Islands, Rapa Island: Mangaoa Peak, NE ridge; BPBM, Honolulu.
Distribution: Mangareva Islands.
Hosts: *Cyathea* sp.
References: (**tx**) Beeson 1940: 201–203.

***pandae* (Schedl)** 1957d: 86 (*Xyleborus*). Holotype ♀; Congo Belge: Yangambi; MRCB, Tervuren.
Figures: Nunberg 1963b:pl. 21, figs. 1–4.
Distribution: Africa (Zaire).
Hosts: *Musanga cecropioides*, *Pachylobus deliciosus*, *Pancovia laurentii*, *Panda oleosa*, *Paropsia schiebeniana*, *Ricinodendron heudelotii*, *Vernonia conferta*.
References: (**hb**) Schedl 1962j: 210. (**ds**) Schedl 1962j: 210. (**tx**) Nunberg 1963b: 42, pl. 21; Schedl 1957d: 86, 1962j: 210, 1979c: 183.

***piceus* (Motschulsky)** 1863: 512 (*Anodius*). Holotype ♀; Ceylon: des Montagnes de Nura-Ellia; IZM, Moscow.
Figures: Nunberg 1959a:pl. 23, figs. 1–2.
Distribution: Africa (Angola/ Cameroon/ Ghana/ Guinea/ Ivory Coast/ Kenya/ Nigeria/ South Africa/ Spanish Guinea/ Tanzania/ Uganda/ Zaire), Asia (Andaman Islands in India/ Malaya/ Sri Lanka/ Taiwan), Australia (Queensland), Fiji Islands, Indonesia (Borneo, Java, Mentawe), Madagascar, Micronesia, New Guinea, Philippine Islands, Samoan Islands.
Hosts: Many listed by Schedl 1962j: 477–483. *Artocarpus integrifolia*, *Diospyros pyrrhocarpa*, *Endospermum malaccense*, *Gmelina arborea*, *Koompassia malaccensis*, *Sterculia alata*.
References: (**cn**) Banerjee 1983; Beaver 1988a: 66. (**hb**) Beaver 1988a: 66; Beaver & Browne 1978: 611. (**ds**) Beaver 1976b: 541, 1988a: 66; Beaver & Browne 1978: 611; Browne 1980d: 490, 1983a: 556; Gemminger & Harold 1872: 2686; Hagedorn 1910d: 109; Kleine 1913b: 162, 1914b: 274; Ohno, Yoneyama, & Nakazawa 1982b: 9, 1987a: 88; Ohno, Yoshioka, Yoneyama, & Nakazawa 1988a: 94, 1989: 63; Schedl 1978d: 73; Wood, S. L. 1957e: 1273. (**tx**) Hagedorn 1910a: 155; Motschulsky 1863: 512; Wood, S. L. 1969c: 117.

indicus Eichhoff 1878b: 354. Holotype ♀; Java, insula Asiatica; IRSNB, Brussels. Synonymy: Wood 1969c: 117.
References: (**ay**) Entwistle 1963b. (**bv**) Entwistle 1963b; Gray, B. 1974c; Schedl 1960f: 50; Schedl, W. 1962: 368–369. (**cn**) Anonymous 1953j: 25; Cachan 1957: 15, 43–53; Mathur & Singh 1960b: 17, 1961a: 69; Zehntner 1901. (**ec**) Anonymous 1953j: 25; Roberts 1977a: 259; Schedl 1962k: 472. (**hb**) Anonymous 1959i: 18; Browne 1936a, 1941: 67, 1961c: 115–117, 1963a: 241; Entwistle 1963b; Gray, B. 1974c; Jones 1957: 6; Jones, Roberts, & Baker 1959: 13–56; Kalshoven 1932: 245, 1959c: 142; Roberts 1977a: 259; Schedl 1962j: 472, 1977b: 158; Speyer 1923: 21; Webb & Jones 1957: 25–43. (**ds**) Beeson 1930: 239, 1941: 397, 1961: 305; Blandford 1895a; Brimblecombe 1953: 29; Browne 1936a: 122, 1963a: 241, 1966: 254, 1974a: 65, 1975a: 760; Ferreira 1965: 1123; Hagedorn 1910d: 106; Kalshoven 1959c: 142–143; Kleine 1913b: 161, 1914b: 288; Mathur & Singh 1960b: 17, 1961a: 69; Mayne & Donis 1960: 104, 1962: 319; Nobuchi 1978a: 35; Nunberg 1952: 21, 1961a: 330, 1965b: 21; Roberts 1960b: 35, 38, 1960e, 1960f, 1969: 132, 1977a: 259; Sampson 1921: 28; Schedl 1936g: 529, 1936j: 21, 1938g: 426, 1959a: 504, 1960j: 40, 1961j: 349, 1961m: 84, 1962j: 472, 1964e: 69, 1964f: 618, 1965e: 354, 1966b: 56, 1967e: 216, 1969a: 207, 1971a: 278, 1972e: 283, 1974c: 262, 1977b: 158, 1979a: 158, 1979f: 103, 1983: 279; Speyer 1923: 21; Thompson, G. H. 1963: 71; Wood, S. L. 1957e: 1273, 1960a: 51. (**tx**) Beeson 1929: 237–238, 1930: 239; Eggers 1923a: 201, 1927a: 404–405, 1927b: 198, 1927c: 92, 1941d: 179, 1943c: 66; Eichhoff 1878a: 392, 1878b: 354–355, 479; Hagedorn 1910a: 154; Nobuchi 1978a:pl. 3, 1983: 302; Nunberg 1952: 21, 1959a: 428; Sampson 1921: 28; Schedl 1933e: 103, 1936g: 529, 1936j: 21, 1938g: 426, 1941d: 380, 1942a: 171, 1942c: 163, 1950d: 9, 13, 1950e: 211, 214, 1950j: 898, 1951i: 45, 50, 1951j: 20, 1952j: 4,

1953g: 242, 1954a: 141, 1954d: 872, 1954e: 53, 1955b: 281, 284–285, 1955d: 269, 1955i: 212, 1957d: 84, 1959a: 504, 1961j: 349, 1961m: 84, 1962j: 472, 1962p: 207, 1964e: 69, 1964f: 618, 1966b: 254, 1969i: 140–141, 1971f: 149, 1977b: 158–159, 1979c: 123; Wood, S. L. 1960a: 51, 61–63, 1969c: 117; Wylie & Yule 1977.

indicus subcoriaceus Eggers 1927c: 92. Holotype ♀; Philippines: Mt. Santo Tomas; Eggers Collection, in NHMW, Wien. Synonymy: Schedl 1959a: 504.
References: (**tx**) Eggers 1927c: 92, 1959a: 504, 1962j: 474; Schedl 1979c: 124.

imitans Eggers 1927b: 404. Lectotype ♀; Insel Mentawei (Si Oban); USNM, Washington, designated by Anderson & Anderson 1971: 15. Synonymy: Wood 1969c: 117.
References: (**tx**) Anderson, W. H. & Anderson 1971: 15; Eggers 1927b: 404–405; Nunberg 1964: 21; Schedl 1962p: 207, 1966b: 57, 1979c: 121; Wood, S. L. 1969c: 117.

samoensis Beeson 1929: 237. Holotype ♀; Samoa; BMNH, London. Synonymy: Wood 1960a: 63.
References: (**ds**) Beeson 1938b: 293. (**tx**) Beeson 1929: 237–238; Nunberg 1964: 21; Schedl 1951k: 131, 137, 1955b: 285, 1979c: 218; Wood, S. L. 1960a: 61, 63.

***procerrimus* (Schedl)** 1969a: 214 (*Xyleborus*). Holotype ♀; New Britain, Lolobau to Tokyo (Japan), imported; PPST, Tokyo.
Figures: Nobuchi 1978a:pl. 3.
Distribution: New Britain Island.
Hosts: Taun log.
References: (**ds**) Nobuchi 1978a: 34; Ohno et al. 1989: 63; Schedl 1965g: 22. (**tx**) Nobuchi 1978a:pl. 3; Schedl 1969a: 214–215, 1979c: 199.

***procerrissimus* (Schedl)** 1942a: 194 (*Xyleborus*). Lectotype ♀; Malaya, Pahang, Cameron's Hill; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 199.
Distribution: Asia (Malaya).
References: (**ds**) Browne 1961c: 134. (**tx**) Schedl 1942a: 194, 1942c: 189, 1979c: 199.

***quadraticollis* (Eggers)** 1923a: 197 (*Xyleborus*). Lectotype ♀; Mt. Makiling auf Luzon; USNM, Washington, designated by Anderson & Anderson 1971: 27.
Figures: Nobuchi 1978a:pl. 3.
Distribution: Philippine Islands (Luzon).
Hosts: *Diplodiscus paniculatus*, *Ficus* sp., *Swietenia mahogoni*.
References: (**ds**) Nobuchi 1978a: 31; Ohno, Yoneyama, & Nakazawa 1987a: 88; Schedl 1938g: 426, 1966b: 67, 1969a: 207. (**tx**) Anderson, W. H. & Anderson 1971: 27; Eggers 1923a: 197, 1927b: 406, 1927c: 94; Nobuchi 1978a:pl. 3, 1983: 303; Schedl 1979c: 207.

duplicatus Schedl 1933e: 102 (*Xyleborus*). Holotype ♀; Mount Maquiling, Laguna, Luzon; Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 173.
References: (**cn**) Mathur & Singh 1961a: 80. (**ds**) Mathur & Singh 1961a: 80; Mesa 1935: 96. (**tx**) Schedl 1933e: 102–103, 1979c: 86; Wood, S. L. 1989: 173.

***rufoniger* (Schedl)** 1934d: 89 (*Xyleborus*). Lectotype ♀; Java, Mt. Gede, 800 m; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 214.
Distribution: Indonesia (Java).
References: (**hb**) Kalshoven 1959c: 143. (**ds**) Kalshoven 1935a: 14, 1959c: 143. (**tx**) Schedl 1934d: 89, 1979c: 214.

***russulus* (Schedl)** 1942c: 187 (*Xyleborus*). Holotype ♀; Neu-Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1942c: 187, 1979c: 217.

***sibsagaricus* (Eggers)** 1930d: 196 (*Xyleborus*). Holotype ♀; Assam (Nambor Reserve, Sibsagar); FRI, Dehra Dun.
Distribution: Asia (Assam, Bengal in India).
Hosts: *Caseana glomerata*, *Dalbergia assamica*, *Ehretia acuminata*, *Sapium eugeniaefolium*, *Sterculia colorata*.
References: (**cn**) Mathur & Singh 1961a: 23. (**ds**) Beeson 1930: 259, 1961: 309; Bhasin, Roonwal, & Singh 1958; Kleine 1934a: 175; Mathur & Singh 1961a: 23. (**tx**) Beeson 1930: 259; Eggers 1930d: 196.

dalbergiae Eggers 1930d: 196 (*Xyleborus*). Holotype ♀; Assam (Upper Dihing Reserve, Lakhimpur); FRI, Dehra Dun. Synonymy: Wood 1989: 173.
References: (**ds**) Beeson 1930: 232, 1961: 304; Browne 1981b: 598; Kleine 1934a: 173; Ohno, Yoneyama, & Nakazawa 1987a: 88, 1987b: 94. (**tx**) Beeson 1930: 232; Eggers 1930d: 196–197, 1939b: 13; Schedl 1934c: 39, 1979c: 75.

***solomonicus* (Schedl)** 1970b: 363 (*Xyleborus*). Holotype ♀; Solomons, Ringicove to Nagoya (Japan), imported; PPST, Tokyo.
Figures: Nobuchi 1978a:pl. 3.
Distribution: Solomon Islands.
References: (**ds**) Nobuchi 1978a: 34; Ohno et al. 1988a: 94, 1989: 64. (**tx**) Nobuchi 1978a:pl. 3; Schedl 1970b: 363–364, 1979c: 232.

***streblicola* Hopkins** 1915b: 55. Holotype ♀; Pagbilao, Tayabas, P. I.; USNM, Washington.
Distribution: Philippine Islands.
Hosts: *Streblus* sp.
References: (**ds**) Kleine 1934a: 177; Schedl 1966b: 72. (**tx**) Hopkins 1915b: 55; Nobuchi 1983: 304; Schedl 1970b: 363–364.

***strombiformis* (Schedl)** 1971c: 384 (*Xyleborus*). Holotype ♀?; Sumatra, Deli, Siboetangit; Schedl Collection in NHMW, Wien.

Distribution: Indonesia (Sumatra).
References: (**tx**) Schedl 1971c: 384–385, 1979c: 239.

***subparallelus* (Eggers)** 1940d: 151 (*Xyleborus*). Lectotype ♀; Java (Batoerraden); USNM, Washington, designated by Anderson & Anderson 1971: 33.
Distribution: Indonesia (Java).
Hosts: *Artocarpus kunstleri*.
References: (**ds**) Beeson 1961: 309; Kalshoven 1959c: 141. (**tx**) Anderson, W. H. & Anderson 1971: 33; Eggers 1940d: 151–152; Schedl 1939e: 332, 1942d: 7, 1950g: 893, 1951i: 45, 1954a: 143, 1958k: 147, 1979c: 243.

***talumalai* (Browne)** 1966: 248 (*Xyleborus*). Holotype ♀; Bismarck Islands: Mussau: Talumalaus; UZMC, Copenhagen.
Distribution: Bismarck Islands.
References: (**tx**) Browne 1966: 248.

***tonkinensis* (Schedl)** 1934c: 39 (*Xyleborus*). Holotype ♀; Tonkin; Schedl Collection in NHMW, Wien.
Distribution: Asia (Tonkin Island in Vietnam).
Note: (3) This is a synonym of *destruens* (DEB).
References: (**ds**) Ouchi 1935: 204; Schedl 1965a: 340. (**tx**) Schedl 1934c: 39, 1936g: 530, 1952c: 61, 1979c: 254. (**ms**) Ouchi 1935: 204.

***trapezicollis* (Schedl)** 1971c: 385 (*Xyleborus*). Holotype ♀; Malaya, Kelantan; BMNH, London.
Distribution: Asia (Malaya).
References: (**tx**) Schedl 1971c: 385–386.

***tristis* (Eggers)** 1930d: 194 (*Xyleborus*). Holotype ♀; Nakachori, Sibsagar, Assam; FRI, Dehra Dun.
Distribution: Asia (Assam, Bengal in India).
Hosts: *Sapium eugeniaefolium*, *Sterculia colorata*, *Vatica lanceaefolia*.
References: (**cn**) Mathur & Singh 1961b: 71. (**ds**) Beeson 1930: 262, 1961: 310; Kleine 1934a: 175; Mathur & Singh 1961b: 71. (**tx**) Beeson 1930: 262; Eggers 1930d: 194.

***tumidus* (Schedl)** 1975f: 371 (*Xyleborus*). Holotype ♀; Upper Manki logging area, Bulolo, Morobe Dist., New Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1975f: 371, 1979c: 258.

***validus* (Eichhoff)** 1875: 202 (*Xyleborus*). Syntypes ♀; Japan; IRSNB, Brussels.
Figures: Nakane et al. 1963: 384, Nobuchi 1966d:pl. 5, 1978a:pl. 3.
Distribution: Asia (Bonin Islands/ Burma/ Anhui, Fujian, Yunnan in China/ Japan/ Korea/ Malaya/ Ryukyu Islands/ Vietnam), North America (introduced into: Maryland, New York, Pennsylvania in USA), Philippine Islands.
Hosts: *Abies firma*, *Acer* spp., *Aphananthe aspera*, *Carpinus tschonoskii*, *Castanea crenata*, *Celtis sinensis*, *Chamaecyparis obtusa*, *Cleyera japonica*, *Cryptomeria japonica*, *Cunninghamia lanceolata*, *Dalbergia hupeana*, *Fagus multinervis*, *Juglans* spp., *Machilus* sp., *Magnolia obovata*, *Mallotus japonicus*, *Phellodendron amurense*, *Pinus densiflora*, *P. massoniana*, *parviflora*, *P. taiwanensis*, *P. thunbergii*, *Populus deltoides*, *P. glandulosa*, *Prunus serrulata spontanea*, *Quercus grosseserrata*, *Tilia amurensis*, *Tsuga sieboldii*, *Ulmus pumila*, *Zelkova serrata*.
References: (**cn**) Anonymous 1976a, 1976e, 1977q, 1977r, 1979p, 1980g; Inouye 1949a: 14, 113, 1949c, 1955; MacNay 1945: 108; Murayama 1954a: 10; Nitto 1953: 302; Shiraki 1952; Uchida et al. 1958: 181; Wood, S. L. 1977a: 73; Yasunga 1962: 197–200. (**ec**) Banno, Mikata, & Kodama 1983: 445; Inouye et al. 1955: 110. (**hb**) Inouye et al. 1955: 110. (**ds**) Anonymous 1976a, 1976e, 1977q, 1977r, 1979p, 1980g; Atkinson et al. 1991: 160; Blandford 1894c: 579; Chapin & Oliver 1986; Cho 1957; Choo 1983: 111; Choo & Woo 1985: 166; Choo, Woo, & Nobuchi 1988a: 134; Drooz 1985: 374; Hagedorn 1910d: 112; Kleine 1913b: 163, 1914b: 260, 279, 281, 1934a: 175; Ko 1969: 287; Kono 1938b: 65, 72; MacNay 1956: 108; Miwa 1931: 269; Murayama 1936a: 136, 1937b: 372, 1948: 2, 1949a: 13, 1949c: 104, 1951a: 6, 1951c: 5, 1953a: 23, 1953c: 145, 1954a: 10, 1954b: 184, 1955: 100, 102, 1957a: 37; Nakane et al. 1963: 384; Nobuchi 1966d: 32, 1967: 24, 1978a: 32, 1985c: 28; Nobuchi & Ono 1973: 183; Nohira & Ogawa 1986; Schedl 1959a: 499, 1966g: 33, 1975a; Shiraki 1952; Straby 1972: 8; Wood, S. L. 1977a: 73, 1980b: 353. (**tx**) Blandford 1894d: 102, 108; Choo 1983: 111; Eggers 1923a: 197–199, 1925: 153, 1935c: 310; Eichhoff 1875: 202, 1877a: 124, 1878b: 358; Hagedorn 1910a: 157; Hopkins 1915b: 54; Murayama 1934c: 300, 1936a: 136–137, 1937b: 372, 1953a: 23, 1954b: 184, 1955: 100, 102–103; Nakane et al. 1963: 384; Niisima 1909: 158, 1910a: 13; Nobuchi 1966d: 32, pl. 5, 1978a:pl. 3, 1983: 304; Schedl 1934f: 1646, 1950g: 893, 1953e: 22, 1955d: 273, 1959a: 499; Strohmeyer 1912d: 38–39; Wylie & Yule 1977.

***velatus* (Sampson)** 1913: 443 (*Xyleborus*). Holotype ♀; Tharrawaddy, L. Burma; BMNH, London.
Figures: Kumar & Chandra 1977: 39 (male), Nobuchi 1978a:pl. 3.
Distribution: Asia (Burma/ Xizang [Tibet] in China/ Andaman Islands, Assam, Bengal, Uttar Pradesh in India).
Hosts: *Acer campbellii*, *Casearia glomerata*, *Eurya japonica*, *Gmelina arborea*, *Leucosceptrum canum*, *Macaranga denticulata*, *Machilus odoratissima*, *Quercus glauca*, *Tectona grandis*, *Terminalia myriocarpy*, *Thunbergia grandiflora*, *Xylia dolabriformis*.
Notes: (3) Schedl 1970b: 364 (described male).
References: (**cn**) Mathur & Singh 1961b: 14;

Stebbing 1914: 597. (**ec**) Batra 1963b: 217; Norris 1979; Stebbing 1914: 597. (**hb**) Stebbing 1914: 597. (**ds**) Beeson 1915: 8–11, 1930: 262, 1961: 310; Kleine 1934a: 175; Mackenzie 1922: 1–14; Mathur & Singh 1961b: 14; Nobuchi 1978a: 31. (**tx**) Beeson 1930: 262; Eggers 1925: 159; Nobuchi 1978a:pl. 3; Nunberg 1959a: 443; Sampson 1913: 443–444; Schedl 1951k: 152, 1970b: 364, 1979c: 265; Stebbing 1914: 597.

assamensis Eggers 1930d: 195 (*Xyleborus*). Holotype ♀; Assam: Shillong, Haflong (Cachar); FRI, Dehra Dun, preoccupied by Stebbing 1909. Synonymy: Wood 1989: 173.

References: (**cn**) Mathur & Singh 1960b: 17, 1961b: 34; Roonwal 1954: 30. (**ds**) Bhasin, Roonwal, & Singh 1958; Kleine 1934a: 172; Mathur & Singh 1960b: 17, 1961b: 34; Roonwal 1954: 30. (**tx**) Beeson 1930: 51; Eggers 1930d: 195–196, 1934b: 27; Schedl 1979c: 29; Wood, S. L. 1989: 173.

asperipennis Eggers 1934b: 27 (*Xyleborus*). Holotype ♀; Assam: Shillong, Haflong (Cachar); FRI, Dehra Dun, automatic. Synonymy: Wood 1989: 173.

References: (**cn**) Mathur & Singh 1960b: 17, 1961b: 34. (**ds**) Beeson 1961: 302; Bhasin, Roonwal, & Singh 1958; Mathur & Singh 1960b: 17, 1961b: 34; Schedl 1969c: 52. (**tx**) Eggers 1934b: 27; Kumar & Chandra 1977: 32, 39; Schedl 1979c: 29; Wood, S. L. 1989: 173.

***voarotrae* (Schedl)** 1961e: 146 (*Xyleborus*). Holotype ♀; Madagascar, Ambila; IRSM, Madagascar.

Distribution: Madagascar.

References: (**tx**) Schedl 1961e: 146, 1977b: 145, 1979c: 268.

***wallacei* (Blandford)** 1896b: 220 (*Xyleborus*). Holotype ♀; New Guinea, Dorey; BMNH, London.

Distribution: Asia (Assam, Bengal in India/ Malaya/ Vietnam), Australia (Queensland), Bismarck Islands, Indonesia (Borneo, Mentawei, Sumatra), New Guinea.

Hosts: *Amoora walichii*, *Artocarpus lakoocha*, *Beilschmiedia sikkimensis*, *Casearia glomerata*, *Leucosceptrum canum*, *Macaranga denticulata*, *Pterocymbium beccarii*, *Sapium eugeniaefolium*, *Sterculia colorata*, *Symplocos theaefolia*.

Notes: (1) Hopkins 1915b: 55 (to *Euwallacea*).

References: (**ds**) Browne 1966: 248, 1980a: 372; Hagedorn 1910d: 112; Kleine 1913b: 163, 1914b: 296; Ohno et al. 1988a: 94, 1989: 64; Schedl 1936g: 528, 1971c: 369, 1971f: 150, 1974c: 262. (**tx**) Blandford 1896b: 220; Hagedorn 1910a: 157; Hopkins 1915b: 55; Nunberg 1959a: 444; Schedl 1936g: 528, 1940b: 434–435, 1942a: 194, 1952k: 162, 1955b: 281.

siporanus Hagedorn 1910b: 11 (*Xyleborus*). Lectotype ♀; Sipora in Mentawei; USNM, Washington, designated by Anderson & Anderson 1971: 30. Synonymy: Wood 1989: 173.

References: (**ds**) Hagedorn 1910d: 111; Kleine 1913b: 163, 1914b: 268. (**tx**) Anderson, W. H. & Anderson 1971: 30; Eggers 1923a: 200, 1925: 159; Hagedorn 1910a: 156, 1910b: 11; Schedl 1951i: 91; Wood, S. L. 1989: 173.

confinis Eggers 1923a: 200 (*Xyleborus*). Lectotype ♀; Moroka (Sudost-Neu Guinea); Eggers Collection, in NHMW, Wien, designated by Schedl 1979c: 61–62. Synonymy: Wood 1989: 173.

References: (**tx**) Eggers 1923a: 200; Schedl 1950f: 52, 1979c: 61; Wood, S. L. 1989: 173.

ovalicollis Eggers 1930d: 193 (*Xyleborus*). Holotype ♀; Assam, Upper Dihing Reserve, Lakhimpur; FRI, Dehra Dun. Synonymy: Wood 1989: 173

References: (**cn**) Mathur & Singh 1961a: 84; Roonwal 1954: 89. (**ds**) Beeson 1930: 252, 1961: 308; Bhasin, Roonwal, & Singh 1958; Kleine 1934a: 175; Mathur & Singh 1961a: 84; Roonwal 1954: 89. (**tx**) Beeson 1930: 252; Eggers 1930d: 193–194; Schedl 1979c: 181; Wood, S. L. 1989: 173.

perakensis Schedl 1942a: 194 (*Xyleborus*). Lectotype ♀; Malaya, Perak, Trolak F. R.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 188. Synonymy: Wood 1989: 173.

References: (**ds**) Browne 1961c: 133; Schedl 1964c: 304, 1964g: 242, 1965g: 24. (**tx**) Schedl 1942a: 194, 1954c: 154, 1964g: 242, 1965f: 24, 1979c: 188; Wood, S. L. 1989: 173.

wallacei indocorus Schedl 1979a: 162 (*Xyleborus*). Holotype ♀; Queensland, Australia; CSIRO, Canberra [There may be another holotype in Schedl Collection in NHMW, Wien].

References: (**tx**) Schedl 1979a: 162.

***xanthopus* (Eichhoff)** 1868c: 151 (*Xyleborus*). Holotype ♀; Africa (Cap bonae spei); Hamburg Museum, lost.

Figures: Nunberg 1963b:pl. 31, figs. 4–7, Schedl 1962j: 212, 1977b: 145.

Distribution: Africa (Ivory Coast/ Kenya/ Natal/ Nigeria/ South Africa/ Tanzania/ Uganda/ Zaire), Asia (Burma/ Assam, Tamil Nadu in India/ Malaya/ Sri Lanka), Fiji Islands, Indonesia (Borneo, Java, Mentawei, Sumatra), Madagascar, Philippine Islands (Luzon, Mindanao).

Hosts: Schedl 1962j: 212–219 lists 73 host species for Africa. *Antidesma petiolare*, *Arthrophyllum diversifolium*, *Artocarpus integrifolia*, *A. scortechinii*, *Canarium* sp., *Cussonia chartacea*, *C. vantsilana*, *Delonix regia*, *Dombeya* sp., *Dyera costulata*, *Eugenia* sp., *Fanchera* sp., *Ficus soroceoides* var. *macrophlebia*, *F.* sp., *Gouania glandulosa*, *Hibiscus macrophyllus*, *Maesa lanceolata*, *Mangifera indica*, *Pachytrape dimep-*

ate, *Pittosporum* sp., *Rauvolfia caffra*, *Rawensara* sp., *Shorea leprosula*, *Sterculia macrophylla*, *Symphonia globulifera*, *Trema orientalis*, *Whitfordiodendron pubescens*.

Notes: (3) The *xanthopus* of Schedl is a shining example of *semirudis*; in general, African specimens are shining, whereas most Asian specimens have the elytral declivity partly or entirely dull. However, they probably represent the same species. Dejean 1837: 382 (used *xanthopus* as a nomen nudum in *Bostrichus*), Eggers 1920: 124, 1922: 174, Schedl 1962j: 212 (*siginis* Hagedorn, nomen nudum, synonymy). It is probable that *Xyleborus semipolitus* Schedl is a synonym (SLW).

References: (**ay**) Van Ryn-Tournel 1972. (**cn**) Anonymous 1892: 165, 1970c: 14; Hall 1921: 11–12; Morstatt 1914: 312; Plenet 1965; Speyer 1923: 21; Vuillaume et al. 1981: 348. (**ec**) Roberts 1977a: 268; Schedl 1962j: 212; Vuillaume et al. 1981: 348. (**hb**) Kalshoven 1920: 32, 1958a: 147, 192, 1959c: 140; Paulian 1951: 28; Roberts 1977a: 268; Schedl 1962j: 212, 1977a: 146. (**ds**) Anonymous 1970c: 14; Beaver & Loyttyniemi 1989; Browne 1973a: 282, 1974a: 65; Dejean 1837: 382; Fairmaire 1892b; Gardner 1957: 33; Gemminger & Harold 1872: 2686; Hagedorn 1910d: 112; Kalshoven 1958a: 147, 192, 1959c: 140; Kleine 1913b: 163; Nunberg 1961a: 331; Paulian 1951: 28; Roberts 1977a: 268; Schedl 1959a: 497, 1962h: 61, 1962j: 212, 1962k: 1105, 1964e: 69, 1965h: 112, 1966b: 76, 1969c: 55, 1975k: 278, 1977a: 146, 1982: 279; Spahr 1981: 62; Wichmann 1954: 522. (**tx**) Beaver & Loyttyniemi 1989; Blandford 1896: 213; Eggers 1920: 116–117, 124, 1922: 174, 1923a: 187, 1943c: 66; Eichhoff 1868c: 151, 1878b: 326–327, 477; Fairmaire 1892b; Hagedorn 1910a: 157, 1910b: 8, 1913b: 257; Nobuchi 1983: 304; Nunberg 1961: 331, 1963b: 62, pl. 31; Powell, W. 1980: 29; Schaufuss 1891: 24, 1897: 212; Schedl 1939a: 468, 1941d: 402, 1950c: 205, 1950d: 8, 1951j: 19, 1953d: 70, 1957b: 151, 1957d: 16, 84, 1958k: 150, 1959a: 497, 1961e: 128, 1962h: 61, 1962j: 212–213, 1962k: 1105, 1964e: 69, 1965h: 112, 1977b: 145, 146.

semirudis Blandford 1896b: 210 (*Xyleborus*). Holotype ♀; Borneo; BMNH, London. Synonymy: Wood 1989: 173.

References: (**hb**) Browne 1961c: 127; Kalshoven 1959c: 138–139. (**ds**) Browne 1961c: 127; Hagedorn 1910d: 110; Kalshoven 1959c: 138–139; Kleine 1913b: 162, 1914b: 284. (**tx**) Blandford 1896b: 210; Eggers 1927c: 90; Hagedorn 1910a: 156; Schedl 1931c: 340, 1960h: 108; Wood, S. L. 1989: 173.

fraternus Blandford 1896b: 212 (*Xyleborus*). Holotype ♀; Ceylon; BMNH, London. Synonymy: Schedl 1958k: 150.

References: (**cn**) Mathur & Singh 1960b: 48, 1961a: 70, 1961b: 91. (**ds**) Hagedorn 1910d: 104; Kleine 1913b: 161, 1934a: 173; Mathur & Singh 1960b: 48, 1961a: 70, 1961b: 91. (**tx**) Beeson 1915: 212; Blandford 1896b: 212; Eggers 1923a: 186; Hagedorn 1910a: 15; Schedl 1958k: 150, 1962j: 212.

sereinuus Eggers 1923a: 187 (*Xyleborus*). Lectotype ♀; Insel Mentawei (Sereinu, Si Oban); Eggers Collection, in NHMW, Wien, designated by Schedl 1979c: 225. Synonymy: Kalshoven 1959c: 139, Schedl 1960i: 108.

References: (**ds**) Beeson 1961: 308; Kalshoven 1959c: 139; Kleine 1934a: 173; Schedl 1936d: 5. (**tx**) Eggers 1923a: 187; Kalshoven 1959c: 139; Nunberg 1959a: 437; Schedl 1936d: 5, 1951i: 42, 1954a: 142, 155, 1958k: 151, 1960i: 108, 1979c: 225.

dubius Eggers 1923a: 199 (*Xyleborus*). Lectotype ♀; Niederl. Indien. Tjitjalangka (Java); Eggers Collection, in NHMW, Wien, designated by Schedl 1979c: 85. Synonymy: Kalshoven 1959c: 139, Schedl 1960i: 108.

References: (**tx**) Eggers 1923a: 199–200, 1927b: 390; Kalshoven 1959c: 139; Nunberg 1956d: 209, 1959a: 430; Schedl 1951i: 65, 1958k: 151, 1960i: 108–109, 1979c: 85.

hybridus Eggers 1927c: 90 (*Xyleborus*). Lectotype ♀; Philippinen: Mindanao, Prov. Lanao, Momungan; USNM, Washington, designated by Anderson & Anderson 1971: 14. Synonymy: Kalshoven 1959c: 139.

References: (**ds**) Schedl 1936j: 20, 1938s: 426, 1966b: 56, 1971f: 149. (**tx**) Anderson, W. H. & Anderson 1971: 14; Eggers 1927c: 90; Kalshoven 1959c: 139; Nobuchi 1983: 302; Nunberg 1959a: 428; Schedl 1931c: 340–341, 1933e: 103–105, 1936j: 20, 1938g: 426, 1942a: 188, 1951i: 66–67, 1954a: 141, 1958k: 151, 1960h: 108, 1979c: 120.

rudis Eggers 1930d: 192 (*Xyleborus*). Holotype ♀; Madras (Nilambur); FRI, Dehra Dun. Synonymy: Wood 1989: 173.

References: (**cn**) Roonwal 1954: 87. (**ds**) Beeson 1930: 255, 1961: 308; Browne 1961c: 127; Kleine 1934a: 175; Roonwal 1954: 87; Schedl 1936j: 20, 1959a: 494, 1972g: 225. (**tx**) Beeson 1930: 255; Eggers 1930d: 192–193; Schedl 1936d: 20, 1959a: 494, 1979c: 214; Wood, S. L. 1989: 173.

kivuensis Eggers 1935c: 309 (*Xyleborus*). Holotype ♀; Congostaat (Kivu Mulungu); MRCB, Tervuren. Synonymy: Schedl 1957d: 16.

Notes: (3) Schedl 1952j: 3, 11 (described male).

References: (**ds**) Gardner 1957a; Mayne & Donis 1962: 319. (**tx**) Eggers 1935c: 309–310, 1943c: 66; Schedl 1950c: 205, 1950d: 8, 1952j: 3, 10–11, 1953d: 69, 1957d: 16, 1958k: 150, 1959a: 497, 1962j: 212, 1979c: 133.

interruptus Eggers 1940d: 139 (*Xyleborus*). Holotype ♀; Java (Batoerraden, G. Slamet);

Drescher Collection. Synonymy: Kalshoven 1959c: 139.

References: (**ay**) Browne 1961d: 49. (**cn**) Anonymous 1977a, 1977j, 1978v; Chandra 1981; Mathur & Singh 1960b: 6, 1961a: 10, 1961b: 14; Williams, L. H. & La Fage 1979: 426. (**hb**) Browne 1961c: 124; Chandra 1981. (**ds**) Anonymous 1977a, 1977j, 1978v; Browne 1961c: 124; Mathew 1982; Mathur & Singh 1960b: 6, 1961a: 10, 1961b: 14; Samuelson 1981: 77; Schedl 1960e: 172, 1961c: 71, 1962b: 185; Yin & Huang 1981: 568. (**tx**) Eggers 1940d: 139–140; Kalshoven 1959c: 139; Schedl 1951i: 70, 1958k: 151, 1979c: 127.

neohybridus Schedl 1942a: 188 (*Xyleborus*). Syntypes ♀; Malaya, Selangor, Kepong; BMNH, London and Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 173.

Notes: (1) Schedl 1979c: 164 (citation of holotype invalid).

References: (**ds**) Browne 1961c: 128. (**tx**) Schedl 1942a: 188, 1951i: 62, 1979c: 164; Wood, S. L. 1989: 173.

artehybridus Schedl 1951i: 66 (*Xyleborus*). Syntypes ♂♀; Philippinen, Luzon, Laguna, Mt. Makiling; Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 173.

Notes: (1) Schedl 1979c: 27 (citation of holotype invalid).

References: (**ds**) Schedl 1966b: 47. (**tx**) Nobuchi 1983: 302; Schedl 1951i: 66, 1979c: 27; Wood, S. L. 1989: 173.

longehirtus Nunberg 1956: 209 (*Xyleborus*). Syntypes 2 ♀; Niederl. Inden. Tjitjalangka (Java); MNB, Berlin, automatic. Synonymy: Kalshoven 1959c: 139, Schedl 1960h: 108.

References: (**tx**) Kalshoven 1959c: 139; Nunberg 1956: 209, 1959a: 430; Schedl 1960h: 108–109.

***zicsii* (Schedl)** 1967e: 231 (*Xyleborus*). Holotype ♀; Brazzaville, Orstom Park; NHMB, Budapest.

Distribution: Africa (Congo).

References: (**tx**) Schedl 1967e: 231–232, 1979c: 270.

Genus *Cyclorhipidion* Hagedorn

CYCLORHIPIDION HAGEDORN 1912c: 355. Type-species: *Cyclorhipidion pelliculosus*, Hagedorn, monobasic.

Terminalinus Hopkins 1915b: 10, 57. Type-species: *Terminalinus terminaliae* Hopkins, original designation. Synonymy: Wood 1992:(in press).

References: (**tx**) Hopkins 1915b: 10, 57; Schedl 1952k: 162; Wood, S. L. 1986a: 83, 1992:(in press).

Kelantanius Nunberg 1961b: 621. Type-species: *Xyleborus punctatopilosus* Schedl, original designation. Synonymy: Wood 1986a: 83.

References: (**tx**) Nunberg 1961b: 621; Wood, S. L. 1986a: 83.

References: (**tx**) Hagedorn 1912c: 355; Schedl 1957d: 15.

***agnaticeps* (Schedl)** 1957d: 100 (*Xyleborus*). Holotype ♀; Congo Belge: Kivu, Hembe-Bitale, Mt. Kahuzi: Lubero, Ruanda: Sishwati, Ostafrika: Mt. Elgon; MRCB, Tervuren.

Figures: Nunberg 1963b:pl. 3–4, figs. 7–10, Schedl 1962j: 294.

Distribution: Africa (Kenya/ Tanzania/ Zaire).

Hosts: *Alchornea cordifolia*, *Bailonella toxisperma*, *Beilschmiedia louisii*, *Bridelia bridelifolia*, *Hagenia abyssinica*, *Hypericum lanceolatum*, *Olea hochstetteri*.

References: (**ec**) Schedl 1958d: 192. (**hb**) Schedl 1962j: 293. (**ds**) Schedl 1962j: 293. (**tx**) Nunberg 1963b: 14, pl. 3–4; Schedl 1955f: 259, 1957d: 84, 100, 1962j: 293–294, 1979c: 15.

***agnatum* (Eggers)** 1923a: 197 (*Xyleborus*). Syntypes ♀; Borneo (Sarawak) and Neu Guinea (Hatam); MCG, Genova, and Eggers Collection (USNM, Washington or NHMW, Wien?).

Figures: Nobuchi 1978a:pl. 4, Nunberg 1978: 102, Wood 1960a: 58.

Distribution: Asia (Burma/ India/ Malaya), Australia, Bismarck Islands, Indonesia (Borneo, Java), Micronesia (Caroline Islands, Palau Island), New Guinea, Philippine Islands (Luzon), Solomon Islands.

Hosts: *Balanocarpus heimii*, *Castanopsis* sp., *Dipterocarpus kunstleri*, *Dryobalanips oblongifolia*, *Eugenia* sp., *Scaphium* sp., *Shorea bracteolata*, *S. leprosula*, *S. macroptera*, *S. uliginosa*.

References: (**cn**) Mathur & Singh 1961a: 38. (**ec**) Browne 1958b: 172. (**hb**) Beaver & Browne 1978: 602; Browne 1958b: 172, 1961c: 149; Kalshoven 1959c: 148. (**ds**) Beaver & Browne 1978: 602; Beeson 1961: 302; Browne 1966: 253, 1984a: 51; Choo & Woo 1983; Kalshoven 1959c: 148; Mathur & Singh 1961a: 38; Nobuchi 1978a: 38; Nunberg 1961b: 610; Ohno, Yoneyama, & Nakazawa 1982a: 4, 1982b: 8, 1987a: 87, 1987b: 94; Ohno, Yoshioka, Uchida, Yoneyama, & Tsukamota 1989: 61; Ohno, Yoshioka, Yoneyama, & Nakazawa 1988a: 93; Schedl 1936d: 2, 1936j: 32, 1966b: 45, 1969a: 208, 1975i: 346, 1979a: 158; Wood, S. L. 1960a: 51. (**tx**) Browne 1972b: 23; Eggers 1923a: 197, 1927b: 408, 1940d: 140; Nobuchi 1978a:pl. 4, 1983: 302; Nunberg 1978: 102–103; Schedl 1936d: 2, 1942a: 170, 1942d: 6–7, 1950g: 895, 1954a: 140, 1958b: 498, 1959a: 508; Wood, S. L. 1960a: 51, 58.

***amarantum* (Schedl)** 1942a: 198 (*Xyleborus*). Lectotype ♀; Malaya, Pahang, Fraser's Hill; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 17.

Distribution: Asia (Malaya).

References: (**ds**) Browne 1961c: 150. (**tx**) Schedl 1942a: 198, 1979c: 17.

***andriani* (Schedl)** 1965c: 73 (*Xyleborus*). Holotype ♀; Madagascar Sud-Ouest, Lambomakandro; IRSM, Madagascar.
Distribution: Madagascar.
References: (**tx**) Schedl 1965c: 73, 1977b: 139, 1979c: 19.

***anoplum* (Schedl)** 1975f: 362 (*Xyleborus*). Holotype ♀; New Guinea, Upper Manki logging area, Bulolo, Morobe Distr.; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1975f: 362, 1979c: 21.

***apicipenne* (Schedl)** 1974d: 462 (*Xyleborus*). Holotype ♀; Upper Manki logging area, Bulolo, Morobe Dist., New Guinea; CSIRO, Canberra.
Distribution: New Guinea.
References: (**tx**) Schedl 1974d: 462, 1979c: 23.

***armaticeps* (Schedl)** 1942a: 198 (*Xyleborus*). Lectotype ♀; Malaya, Pahang; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 25.
Distribution: Asia (Malaya).
Hosts: *Shorea leprosula*.
References: (**ds**) Browne 1961c: 165. (**tx**) Schedl 1942a: 198, 1979c: 25.

***artifex* (Schedl)** 1942d: 45 (*Xyleborus*). Lectotype ♀; Java: Mt. Gede, 800 m; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 27.
Distribution: Indonesia (Java).
References: (**tx**) Schedl 1942d: 45, 1979c: 27.

***bicinctum* (Schedl)** 1965c: 76 (*Xyleborus*). Holotype ♀; Madagascar, Montagne d'Ambre, 1150 m; Schedl Collection in NHMW, Wien.
Distribution: Madagascar.
Hosts: *Macaranga* sp.
References: (**tx**) Schedl 1965c: 76, 1977b: 212, 1979c: 37–38.

***bituberculatum* (Eggers)** 1923a: 183 (*Xyleborus*). Holotype ♀; Deutsch Neu-Guinea, Kaiserin Augustafluss; supposedly deposited in MNB, Berlin, but apparently it was in the Eggers Collection when Schedl borrowed it, now in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Eggers 1923a: 183–184; Schedl 1940b: 435, 1955b: 281, 1979c: 41.

***brevius* (Eggers)** 1923a: 183 (*Xyleborus*). Holotype ♀; Deutsch New-Guinea, Kaiserin Augustafluss; MNB, Berlin, apparently still in the Eggers Collection when Schedl borrowed it, now in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Eggers 1923a: 183; Schedl 1953c: 302, 1979c: 46.

***cachani* (Schedl)** 1958j: 241 (*Xyleborus*). Lectotype ♀; Cote d'Ivoire, Yapo; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 49.
Distribution: Africa (Ivory Coast).
Hosts: *Canarium* sp., *Macrolobium heudelotianum*, *Pachylobius deliciosa*.
References: (**ds**) Cachan 1957: 15; Schedl 1961m: 84, 1962j: 489, 1964e: 69. (**tx**) Schedl 1958j: 241, 1961m: 84, 1962j: 489, 1979c: 49.

***callosum* (Schedl)** 1941d: 405. Holotype ♀; Congo: Schedl Collection in NHMW, Wien.
Distribution: Africa (Zaire).
Hosts: *Dacryodes pubescens*.
References: (**hb**) Schedl 1962j: 272. (**ds**) Schedl 1962j: 272. (**tx**) Schedl 1941d: 405, 1957d: 15, 1962j: 272, 1979c: 50.

***capensis* (Eggers)** 1944b: 98 (*Xyleborus*). Holotype ♀; Africa, Capland; Stuttgart Staatl Naturaliensammlung.
Distribution: Africa (South Africa).
References: (**tx**) Eggers 1944b: 98; Schedl 1962j: 273.

***circumcisum* (Sampson)** 1921: 30 (*Xyleborus*). Holotype ♀; Penang; BMNH, London.
Distribution: Asia (Malaya), Indonesia (Borneo, Java, Sumatra).
Hosts: *Castanopsis* sp., *Pasania* sp., *Quercus* sp.
References: (**hb**) Beaver & Browne 1978: 606; Browne 1961c: 161; Kalshoven 1959c: 158. (**ds**) Beaver & Browne 1978: 606; Browne 1961c: 161–162, 1962c: 202, 1986a: 89; Kalshoven 1959c: 158; Sampson 1921: 30–31; Schedl 1965g: 24. (**tx**) Browne 1959a: 97; Kalshoven 1959b: 97; Sampson 1921: 30–31.

obtusus Eggers 1923a: 172 (*Xyleborus*). Holotype ♀; Bandar Baroe auf Sumatre; USNM, Washington. Synonymy: Browne 1959b: 97 *in* Kalshoven 1959.
References: (**ec**) Browne 1958b. (**hb**) Browne 1958b; Kalshoven 1959: 158. (**ds**) Schedl 1936d: 4, 1971c: 368. (**tx**) Anderson, W. H. & Anderson 1971: 23; Browne 1959a, 1959b: 97; Eggers 1923a: 172, 1927c: 100; Schedl 1936d: 4, 1942a: 192, 1942c: 185–186, 1942d: 6, 1948f: 271, 1951i: 42, 86, 1954a: 142, 1971c: 368, 1979c: 176.

***corrugatum* (Schedl)** 1951i: 93 (*Xyleborus*). Holotype ♂; Java: Tangkoeban Prahoe, 4000–5000 Fuss; Schedl Collection in NHMW, Wien.
Distribution: Indonesia (Java).
References: (**tx**) Schedl 1951i: 93, 1979c: 66.

***crucifer* (Hagedorn)** 1908: 381 (*Xyleborus*). Holotype ♀; Kamerun; MNB, Berlin.
Figures: Nunberg 1963b:pl. 11, figs. 3–6, Schedl 1962j: 274.
Distribution: Africa (Angola/ Benin/ Cameroon/ Equatorial Guinea/ Guinea/ Ivory Coast/ Kenya/ Nigeria/ South Africa/ Tanzania/ Uganda/ Zaire/ Zambia).
Hosts: *Acrocarpus* sp., *Albizzia* spp., *Baphia nitida*, *Cassia siamea*, *Celtis* sp., *Ficus* sp., *Turraeanthus africana*.

References: (**ec**) Schedl 1962j: 273. (**hb**) Beaver & Loyttyniemi 1985a: 70; Loyttyniemi, Beaver, & Loyttyniemi 1984; Roberts 1969: 131; Schedl 1962j: 273. (**ds**) Beaver & Loyttyniemi 1985a: 70; Ferreira 1965: 1121; Gardner 1957a: 33; Hagedorn 1910d: 101; Kleine 1913b: 160, 1914b: 312; Mayne 1954: 296; Mayne & Donis 1962: 318; Schedl 1959p: 19, 1962j: 273, 1967e: 216. (**tx**) Beaver & Loyttyniemi 1985a: 70; Eggers 1923a: 179, 188, 1927a: 199; Hagedorn 1908: 381, 1910a: 153; Nunberg 1963b: 26, pl. 11; Schedl 1939a: 470, 1939g: 170, 1942d: 34–35, 1950d: 8, 1952i: 18, 1955i: 219, 1957d: 15, 84, 98, 1962j: 273–274, 1979c: 70.

crucifer cruciferinum Schedl 1957d: 98 (*Xyleborus*). Holotype ♀; Cote d'Ivoire: Adiopodoume; Schedl Collection in NHMW, Wien.
Notes: (1) A possible subspecies.
References: (**ds**) Schedl 1962j: 275. (**tx**) Schedl 1957d: 98, 1962j: 275, 1962k: 1099, 1979c: 70.

***cruciforme* (Schedl)** 1957d: 99 (*Xyleborus*). Holotype ♀; Congo Belge: Kivu, Hembe-Bitale; MRCB, Tervuren.
Figures: Nunberg 1963b:pl. 11, figs. 7–8.
Distribution: Africa (Zaire).
Hosts: *Faurea saligna* and a liana.
References: (**ec**) Schedl 1958d: 192. (**hb**) Schedl 1962j: 276. (**ds**) Schedl 1962j: 276. (**tx**) Nunberg 1963b: 27, pl. 11; Schedl 1957d: 98–99, 1962j: 276, 1979c: 70.

***crucipenne* (Schedl)** 1962j: 277 (*Xyleborus*). Holotype ♀; Congo Belge: Luki; Schedl Collection in NHMW, Wien.
Distribution: Africa (Kenya/ Uganda/ Zaire).
Hosts: *Albizzia* sp., *Alstonia boonei*, *Cynometra alexandri*, *Celtis mildbraedii*, *C.* sp., *Chlorophora excelsa*, *Funtumia elastica*, *Khaya* sp., *Maesopsis eminii*, *Trema guineensis*.
References: (**tx**) Schedl 1962j: 277, 1979c: 71.

metacrucifer Browne 1965a: 201 (*Xyleborus*). Holotype ♀; Kenya: Budongo; BMNH, London. Synonymy: Wood 1989: 175.
References: (**ds**) Browne 1973a: 279, 297. (**tx**) Browne 1965a: 201, 1973a: 279, 297.

***curvipenne* (Schedl)** 1951i: 82 (*Xyleborus*). Syntypes ♀; Java, Batoerraden, G. Slamet; Schedl Collection in NHMW, Wien.
Distribution: Indonesia (Java).
References: (**tx**) Schedl 1951i: 82, 1979c: 73.

***daosi* (Schedl)** 1958j: 242 (*Xyleborus*). Lectotype ♀; Cote d'Ivoire, Banco; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 75.
Distribution: Africa (Equatorial Guinea/ Ivory Coast).
Hosts: *Trichoscypha arborea*.
References: (**ds**) Cachan 1957: 15, 43–53; Schedl 1962j: 492, 1971g: 193. (**tx**) Schedl 1958j: 241–242, 1962j: 492, 1979c: 75.

***delicatum* (Schedl)** 1955b: 300 (*Xyleborus*). Holotype ♀; New Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1955b: 281, 300, 1979c: 77.

***destrictum* (Schedl)** 1939e: 352 (*Xyleborus*). Lectotype ♀; Malaya, Pahang: Fraser's Hill, 4200 feet; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 79.
Distribution: Asia (Malaya).
References: (**ds**) Browne 1961c: 164. (**tx**) Schedl 1939e: 351–353, 1979c: 79.

***dihingicum* Wood** 1992b: 79. Syntypes 2 ♀, 1 ♂; Java, Batoerraden, G. Slamet; Schedl Collection in NHMW, Wien, automatic.
Distribution: Indonesia (Java).
References: (**tx**) Wood 1992b: 79.

dihingensis Schedl 1951i: 75 (*Xyleborus*). Syntypes 2 ♀, 1 ♂; Java, Batoerraden, G. Slamet; Schedl Collection in NHMW, Wien, preoccupied by Eggers 1930.
References: (**ds**) Schedl 1966b: 51. (**tx**) Nobuchi 1983: 302; Schedl 1951i: 75, 1979c: 80; Wood, S. L. 1992b: 79.

***dipterocarpi* (Hopkins)** 1915b: 58 (*Terminalus*). Holotype ♀; Pagbilao, Philippine Islands; USNM, Washington.
Distribution: Philippine Islands.
Hosts: *Dipterocarpus grandiflorus*.
References: (**ds**) Kleine 1934a: 178; Schedl 1966b: 51. (**tx**) Hopkins 1915b: 58; Nobuchi 1983: 302.

***foersteri* (Hagedorn)** 1910b: 7 (*Xyleborus*). Syntypes 2 ♀; Sumatra; Hamburg Museum, lost.
Distribution: Asia (Malaya), Indonesia (Borneo, Sumatra).
Hosts: *Canarium littorale*, *C.* sp., *Canthium didymum*, *Pithecolobium bubalinum*, *Santiria griffithii*, *Shorea leprosula*.
References: (**ec**) Browne 1958b. (**hb**) Browne 1935a, 1958b, 1961c: 163. (**ds**) Beeson 1961: 304; Browne 1935a, 1961c: 163; Hagedorn 1910d: 104; Kleine 1913b: 161, 1914b: 286; Schedl 1936d: 3. (**tx**) Browne 1955: 353; Eggers 1923a: 182, 1927c: 93; Hagedorn 1910a: 154, 1910b: 7; Schedl 1936d: 3, 1939e: 331, 351, 1942a: 170, 1942c: 186, 1950g: 894.

***fouqueti* (Schedl)** 1937f: 15 (reprint p. 1) (*Xyleborus*). Lectotype ♀; Saigon; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 99.
Distribution: Asia (Vietnam).
References: (**ds**) Schedl 1937f: 15. (**tx**) Schedl 1937f: 15, 1979c: 99.

***guineense* (Eggers)** 1941d: 179 (*Xyleborus*). Syntypes ♂ ♀; Insel Fernando Poo; IPKE, Eberswalde, and 3 ♀ 1 ♂ in Eggers Collection, in NHMW, Wien.
Figures: Schedl 1962j: 322.

Distribution: Africa (Cameroon/ Equatorial Guinea/ Fernando Po Island).
Hosts: *Nuxia conferta, Sizygium staudtii.*
References: (**ds**) Browne 1973a: 282. (**tx**) Eggers 1941d: 179; Schedl 1962j: 322–323, 1979c: 114.

***hastatum* (Schedl)** 1942d: 39 (*Xyleborus*). Lectotype ♀; Java, Batoerraden, G. Slamet; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 115.
Distribution: Indonesia (Java), New Guinea.
References: (**ds**) Browne 1983a: 554; Schedl 1965g: 25. (**tx**) Schedl 1942d: 39, 1951i: 93, 1953c: 290, 1958k: 154, 1965g: 25, 1979c: 115.

***hirtum* (Hagedorn)** 1904d: 126 (*Xyleborus*). Holotype ♀; Darjiling; MNHN, Paris.
Distribution: Asia (Burma/ Fujian in China/ Assam, Bengal in India).
Hosts: *Beilschmiedea sikkimensis, Evodia fraxinifolia, Michelia champaca, Symplocos theaefolia.*
References: (**ds**) Hagedorn 1910d: 105; Kleine 1913b: 161, 1914b: 277; Schedl 1969c: 53. (**tx**) Beeson 1930: 218; Hagedorn 1904d: 126, 1910a: 154.

hirtuosus Beeson 1930: 217 (*Xyleborus*). Syntypes 11 ♀; Bengal: Lopchu, Rangirum, Senchal Range, Darjeeling; FRI, Dehra Dun.
Synonymy: Wood 1989: 175.
References: (**cn**) Mathur & Singh 1961a: 84. (**ds**) Mathur & Singh 1961a: 84; Nobuchi 1967: 21; Schedl 1960e: 172. (**tx**) Beeson 1930: 217–218; Eggers 1939c: 114; Schedl 1953e: 22, 1955h: 45, 1979c: 118; Wood, S. L. 1989: 175.

***indigens* (Schedl)** 1955b: 303 (*Xyleborus*). Holotype ♀; Deutsch-Neu-Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1955b: 281, 303, 1979c: 124.

***kelantanum* (Schedl)** 1953c: 302 (*Xyleborus*). Lectotype ♀; Malaya, Kelantan; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 131.
Distribution: Asia (Malaya).
Hosts: *Shorea rugosa.*
Notes: (1) Browne 1961c: 149 (correction of lapsus calami in original spelling).
References: (**hb**) Browne 1961c: 149. (**ds**) Browne 1961c: 149; Nunberg 1961b: 610. (**tx**) Schedl 1953c: 302, 1979c: 131.

***longius* (Eggers)** 1923a: 171 (*Xyleborus*). Lectotype ♀; Deutsch Neu Guinea (Maifluss and Augustafluss); USNM, Washington, designated by Anderson & Anderson 1971: 18.
Distribution: New Guinea.
References: (**tx**) Anderson, W. H. & Anderson 1971: 18; Eggers 1923a: 171–172, 195; Schedl 1942c: 190, 1961f: 92, 1979c: 141.

***mangoense* (Schedl)** 1942a: 189 (*Xyleborus*). Holotype ♀; Malaya, Malacca; BMNH, London.
Distribution: Asia (Malaya).
Hosts: *Mangifera indica.*
References: (**ds**) Browne 1961c: 137. (**tx**) Schedl 1939n: 14, 1942a: 189.

***multigranosum* (Schedl)** 1964f: 622 (*Xyleborus*). Holotype ♀; Cameroun, N'Kongsamba; MNHN, Paris.
Distribution: Africa (Cameroon).
References: (**tx**) Schedl 1964f: 622, 1979c: 161.

***neocavipenne* (Schedl)** 1977f: 503 (*Xyleborus*). Holotype ♀; Vietnam: Prov. Ha-Tinh, forestiere Huong-son, 150 m; Schedl Collection in NHMW, Wien.
Distribution: Asia (Vietnam).
References: (**tx**) Schedl 1977f: 503.

***neocrucifer* (Schedl)** 1955i: 219 (*Xyleborus*). Lectotype ♀; S. Rhodesia: Salisbury, Mashonald, Victoria, N. W. Rhodesia: Shigariatombwes; Schedl Collection, designated by Schedl 1979c: 164.
Figures: Nunberg 1968a:pl. 2, figs. 1–4.
Distribution: Africa (South Africa/ Zambia/ Zimbabwe).
Notes: (3) Beaver & Loyttyniemi 1985a: 71 (cited in *Kelantanius*).
References: (**ds**) Beaver & Loyttyniemi 1985a: 71; Schedl 1962j: 279. (**tx**) Beaver & Loyttyniemi 1985a: 71; Nunberg 1968a: 274, pl. 2; Schedl 1955d: 272, 1955i: 219, 1962j: 277–279, 1979c: 164.

***nsafukalae* (Schedl)** 1957d: 105 (*Xyleborus*). Holotype ♀; Congo Belge: Bas-Congo, Luki; MRCB, Tervuren.
Distribution: Africa (Zaire).
Hosts: *Dacryodes pubescens.*
References: (**ds**) Schedl 1962j: 526. (**tx**) Schedl 1957d: 105, 1962j: 526, 1979c: 172.

***nutans* (Schedl)** 1942a: 199 (*Xyleborus*). Lectotype ♀; Malaya, Pahang, Kemasul F. R.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 173.
Distribution: Asia (Andaman Islands in India/ Malaya), Indonesia (Borneo).
Hosts: Burceraceae.
References: (**ds**) Browne 1961a: 305, 1961c: 149, 1981b: 599, 1983a: 554, 1984a: 151; Schedl 1969c: 53. (**tx**) Schedl 1942a: 199, 1959a: 507, 1979c: 173.

***obliquesectum* (Eggers)** 1927c: 99 (*Xyleborus*). Holotype ♀; Philippinen: Mindanao, Prov. Lanao, Kolambugan; Eggers Collection, in NHMW, Wien.
Distribution: Philippine Islands.
References: (**ds**) Nobuchi 1978a: 24; Ohno, Yoneyama, & Nakazawa 1987: 88; Schedl 1938g: 427, 1966b: 62, 1966g: 32. (**tx**) Eggers 1927c: 99; Nobuchi 1983: 303; Schedl 1938g: 427, 1950g: 894, 1979c: 174.

***opimatum* (Schedl)** 1975a: 459 (*Xyleborus*). Holotype ♀; Borneo; Schedl Collection in NHMW, Wien.
Distribution: Indonesia (Borneo).

References: (**tx**) Schedl 1975a: 459, 1979c: 180.

***pelliculosum* Hagedorn** 1912c: 356. Holotype ♀; Kamerun, Johann-Albrechtshohe; MNB, Berlin.
Distribution: Africa (Cameroon).
References: (**ds**) Hagedorn 1910d: 108; Kleine 1913b: 170, 1914b: 312. (**tx**) Hagedorn 1910a: 155, 1912c: 356; Hopkins 1914: 120; Schedl 1941d: 405, 1957d: 15, 1962j: 279.
perlaetus Schedl 1960h: 107 (*Xyleborus*). Holotype ♀; Kamerun, Johann-Albrechtshohe; MNB, Berlin, automatic. An unnecessary replacement name for *pelliculosum* Hagedorn, the original pre-1960 name is restored.
References: (**tx**) Schedl 1960h: 107, 1962j: 279.

***perpilosellum* (Schedl)** 1935b: 402 (*Xyleborus*). Lectotype ♀; Mt. Maquiling, Laguna Province, Luzon, Philippine Islands; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 190.
Distribution: Asia (Malaya), Philippine Islands (Luzon).
References: (**ds**) Nunberg 1961b: 611; Schedl 1966b: 65. (**tx**) Nobuchi 1983: 303; Schedl 1935b: 402, 1979c: 190.

***pilipenne* (Eggers)** 1940d: 140 (*Xyleborus*). Holotype ♀; Java (Preanger, G. Tangkoeban Prahoe); Drescher Collection.
Distribution: Indonesia (Java).
Notes: (1) Schedl 1979c: 140 (lectotype designated invalid).
References: (**tx**) Eggers 1940d: 140; Schedl 1942d: 45, 1979c: 194.

***pilosulum* (Eggers)** 1927c: 100 (*Xyleborus*). Holotype ♀; Philippinen: Luzon, Provinz Laguna, Mount Maquiling; USNM, Washington.
Distribution: Indonesia (Borneo), Philippine Islands (Luzon).
References: (**ds**) Schedl 1965g: 24, 1966b: 65, 1979c: 194. (**tx**) Anderson, W. H. & Anderson 1971: 26; Eggers 1927c: 100–101; Nobuchi 1983: 303; Schedl 1948f: 271, 1965g: 24, 1979c: 194.

***pityogenes* (Schedl)** 1936g: 534 (*Xyleborus*). Holotype ♀; Australia; Schedl Collection in NHMW, Wien.
Distribution: Australia.
References: (**ds**) Brimblecombe 1953: 33; Schedl 1936g: 534. (**tx**) Schedl 1936g: 534, 1979c: 195.

***planotruncatum* (Schedl)** 1942a: 197 (*Xyleborus*). Holotype ♀; Malaya, Perak, Larut Hills, 4500 Fuss; BMNH, London.
Distribution: Asia (Malaya).
References: (**ds**) Browne 1961c: 165. (**tx**) Schedl 1942a: 197.

***polyodon* (Eggers)** 1923a: 196 (*Xyleborus*). Lectotype ♀; Mt. Makiling, Insel Luzon; USNM, Washington, designated by Anderson & Anderson 1971: 26.
Distribution: Asia (Malaya), Philippine Islands (Luzon).
Hosts: *Artocarpus elasticus*.
References: (**ds**) Schedl 1966b: 66, 1971c: 365. (**tx**) Anderson, W. H. & Anderson 1971: 26; Eggers 1923a: 196–197, 1927b: 404; Nobuchi 1983: 303.

***popondettae* (Browne)** 1970: 573 (*Xyleborus*). Holotype ♀; Papua New Guinea: N. Papua, Popondetta; BMNH, London.
Distribution: New Guinea.
Hosts: *Theobroma cacao*.
References: (**tx**) Browne 1970: 573.

***posticespinatum* (Eggers)** 1940c: 238 (*Xyleborus*). Holotype ♀; Congostaat (Bambesa); MRCB, Tervuren.
Figures: Nunberg 1963:pl. 22, figs. 1–2, 7–8.
Distribution: Africa (Angola/ Congo/ Nigeria/ Zaire).
References: (**ds**) Browne 1970: 542; Ferreira 1965: 1124; Roberts 1969: 133; Schedl 1959p: 21, 1962j: 527. (**tx**) Eggers 1940c: 238; Nunberg 1963b: 46, pl. 22–23; Schedl 1962j: 527.

***praecursor* (Schedl)** 1962j: 527 (*Xyleborus*). Holotype ♀; Congo Belge: Luki; Schedl Collection in NHMW, Wien.
Distribution: Africa (Congo/ Zaire).
Hosts: *Dacryodes pubescens*.
References: (**ds**) Schedl 1966c: 228. (**tx**) Schedl 1962j: 527, 1979c: 198.

***pruinosum* (Blandford)** 1896b: 214 (*Xyleborus*). Holotype ♀; Borneo, Sarawak; BMNH, London.
Distribution: Asia (Malaya), Indonesia (Borneo, Mentawei, Sumatra), Philippine Islands, Solomon Islands.
Hosts: *Balanocarpus heimii*, *Canarium littorale*, *C. patentinervum*, *Dacryodes* sp., *Dryobalanops aromatica*, *Pethecellobium* sp., *Santiria griffithii*.
References: (**ec**) Browne 1958b. (**hb**) Browne 1958b, 1961c: 162–163. (**ds**) Browne 1961a: 306, 1961c: 162, 1966: 256, 1981a: 126, 1985a: 191; Hagedorn 1910d: 109; Kleine 1914b: 289; Nunberg 1961b: 611; Schedl 1965g: 24. (**tx**) Blandford 1896b: 214; Browne 1955: 352, 1970: 573; Hagedorn 1910a: 156; Nobuchi 1983: 303.
arcticollis Blandford 1896b: 217 (*Xyleborus*). Holotype ♂; Sumatra; BMNH, London. Synonymy: Browne 1955: 352.
References: (**ds**) Hagedorn 1910d: 99; Kleine 1913b: 160, 1914b: 286. (**tx**) Blandford 1896b: 217; Browne 1955: 352.
decipiens Eggers 1923a: 182 (*Xyleborus*). Syntypes ♀; not given. Synonymy: Browne 1955: 352.
Notes: (1) Originally named as a variety of *foersteri*, raised to species rank by Schedl 1936d: 3.
References: (**cn**) Browne 1952; Mathur & Singh 1961a: 22; Yunas & Hua 1980: 230. (**hb**) Browne 1936a. (**ds**) Beeson 1961: 304; Browne 1936a; Mathur & Singh 1961a: 22;

Nunberg 1961b: 610. (**tx**) Browne 1955: 352; Eggers 1923a: 182–183, 1927c: 93; Schedl 1936d: 3, 1939e: 331, 1942a: 170, 1942c: 163.

***psaltes* (Schedl)** 1954e: 81 (*Xyleborus*). Lectotype ♂; Mpraeso, Gold Coast; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 200.
Figures: Nunberg 1968:pl. 2, figs. 5–8.
Distribution: Africa (Ghana/ Guinea/ Ivory Coast).
Hosts: *Albizzia zygia*.
References: (**ds**) Browne 1965a: 188; Schedl 1962h: 60, 1962j: 280, 1962k: 1102; Thompson, G. H. 1963: 72. (**tx**) Nunberg 1968a: 275, pl. 2; Schedl 1954e: 54, 81, 1955d: 269, 275, 1962j: 280, 1962k: 1102, 1979c: 200.

° ***pseudocrucifer* (Schedl)** 1939a: 470 (*Xyleborus*). Holotype ♀; Copal (Ethiopian Region); Geological Department, BMNH, London.
Distribution: Africa (fossil in Copal from Ethiopia).
References: (**ds**) Schedl 1962j: 280; Spahr 1981. (**tx**) Schedl 1939a: 470–471, 1962j: 280.

***pseudofoersteri* (Schedl)** 1942a: 191 (*Xyleborus*). Holotype ♀; Borneo; Schedl Collection in NHMW, Wien.
Distribution: Indonesia (Borneo).
References: (**tx**) Schedl 1942a: 191, 1954c: 154, 1979c: 201.

***punctatopilosum* (Schedl)** 1936g: 532 (*Xyleborus*). Holotype ♀; New Guinea; Schedl Collection in NHMW, Wien.
Figures: Nunberg 1961b: 630–631 (adult).
Distribution: Asia (Malaya/ Thailand), Indonesia (Borneo), New Guinea.
Hosts: *Castanopsis sumatrana*, *Lithocarpus wallichianus*, *Pasania sundaica*, *Quercus wrayi*.
References: (**bv**) Gray, B. 1974c. (**cn**) Yunus & Hua 1980: 230. (**hb**) Beaver & Browne 1978: 612; Browne 1941, 1961c: 160; Gray, B. 1974c. (**ds**) Beaver 1990a: 280; Beaver & Browne 1978: 612; Browne 1949b, 1961c: 160–161; Nunberg 1961b: 611–621, 630–631; Schedl 1936g: 532; Yunus & Hua 1980: 230. (**tx**) Browne 1949b; Schedl 1936g: 532, 1940b: 434, 1942a: 171, 1942d: 38, 1958k: 154, 1979c: 204.

***punctatum* (Eggers)** 1923a: 182 (*Xyleborus*). Lectotype ♀; Si Rambe auf Sumatra; Eggers Collection, in NHMW, Wien, designated by Schedl 1979c: 205.
Distribution: Indonesia (Sumatra).
References: (**tx**) Eggers 1923a: 182–183; Schedl 1979c: 205.

***punctilicolle* (Schedl)** 1942a: 190 (*Xyleborus*). Holotype ♀; Malaya, Perak; BMNH, London.
Distribution: Asia (Malaya), Indonesia (Borneo).
Hosts: *Vatica* sp.
References: (**ds**) Browne 1961c: 161; Schedl 1964g: 242. (**tx**) Schedl 1942a: 190.

***quadricuspe* (Schedl)** 1942d: 34 (*Xyleborus*). Holotype ♀; Ost Java; Schedl Collection in NHMW, Wien.
Distribution: Indonesia (Java).
References: (**tx**) Schedl 1942d: 34, 1979c: 208.

***revocabile* (Schedl)** 1942c: 186 (*Xyleborus*). Holotype ♀; Neu-Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1942c: 186, 1979c: 211.

***rufonitidum* (Schedl)** 1951i: 74 (*Xyleborus*). Holotype ♀; Java, Bandjar; Schedl Collection in NHMW, Wien.
Distribution: Indonesia (Java).
References: (**hb**) Kalshoven 1959c: 137. (**ds**) Kalshoven 1959c: 137. (**tx**) Schedl 1951i: 74, 1958k: 148, 1979c: 215.

***scalptor* (Schedl)** 1961e: 153 (*Xyleborus*). Holotype ♀; Madagascar, Perinet; IRSM, Madagascar.
Distribution: Madagascar.
Hosts: *Mespilodaphne* sp.
References: (**tx**) Schedl 1961e: 153, 1965c: 75–76, 1977a: 212, 1979c: 221.

***scapulare* (Schedl)** 1942a: 193 (*Xyleborus*). Holotype ♀; Malaya, Selangor, Buloh F. R.; BMNH, London.
Distribution: Asia (Malaya).
References: (**hb**) Browne 1961c: 107. (**tx**) Schedl 1942a: 193.

***scorpium* (Schedl)** 1942a: 187 (*Xyleborus*). Holotype ♀; Malaya, Perak, Trolak F. R.; BMNH, London.
Distribution: Asia (Malaya).
References: (**ds**) Browne 1961c: 165. (**tx**) Schedl 1942a: 187.

***sexspinatum* (Schedl)** 1935f: 271 (*Xyleborus*). Lectotype ♀; F.M.S.: Selangor-Bangi, Meserenti (Kepong); Rotan-Junggal F.R.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 227.
Figures: Nobuchi 1978a:pl. 3.
Distribution: Asia (Malaya).
Hosts: *Shorea parviflora*.
References: (**ds**) Browne 1961c: 107; Nobuchi 1978a: 27; Ohno, Yoneyama, & Nakazawa 1982b: 9; Ohno et al. 1987: 88; Schedl 1966b: 70, 1969a: 205. (**tx**) Browne 1960: 204; Nobuchi 1978a:pl. 3, 1983: 304; Schedl 1935f: 271, 1942c: 188, 1955b: 303, 1979c: 227; Wylie & Yule 1977.

***sisyrnophorum* (Hagedorn)** 1910b: 7 (*Xyleborus*). Holotype ♀; Tandjong Morawa; MNB, Berlin.
Distribution: Asia (India/ Malaya), Indonesia (Borneo, Sumatra, Tandjong).
Hosts: *Dryobalanops aromatica*, *Xerospermum* sp.
References: (**cn**) Mathur & Singh 1961b: 95. (**ds**) Beeson 1961: 309; Browne 1961c: 163; Hagedorn 1910d: 111; Kleine 1913b: 163, 1914b: 268; Mathur & Singh 1961b: 95; Schedl 1936d: 5, 1965g:

24. (**tx**) Eggers 1923a: 183; Hagedorn 1910a: 156, 1910b: 7; Schedl 1939e: 330, 1965g: 24.

***spinibarbe* (Schedl)** 1955i: 219 (*Xyleborus*). Holotype ♀; Tonkoui [Senegal?]; Schedl Collection in NHMW, Wien.
Distribution: Africa (Senegal).
References: (**tx**) Schedl 1955i: 212, 219, 1962j: 529, 1979c: 234.

***spinidens* (Eggers)** 1920: 116 (*Xyleborus*). Syntypes 2 ♀; Johann Albrechtshohe in Kamerun; MNB, Berlin.
Distribution: Africa (Cameroon).
References: (**ds**) Schedl 1962j: 529, 1964f: 618. (**tx**) Eggers 1920: 116; Schedl 1938h: 461, 1955i: 219, 1962j: 529.

***subagnatum* Wood** 1992b: 85. Holotype ♀; Philippinen, Luzon, Mt. Irid.; NHMW, Wien.
Figures: Nobuchi 1978a:pl. 4.
Distribution: Australia, New Guinea, Philippine Islands (Luzon).
Hosts: Mangrove.
Notes: (1) This is *Xyleborus subagnatus*, nomen nudum of Eggers and Schedl. Schedl 1979c: 239 (invalid lectotype designation).
References: (**cn**) Wylie & Shanahan 1975. (**hb**) Wylie & Shanahan 1975. (**ds**) Browne 1984c: 450; Ohno et al. 1987: 88, 1988a: 94, 1989: 64; Schedl 1966g: 32, 1975i: 347, 1980b: 184. (**tx**) Nobuchi 1978a:pl. 4, 1983: 304; Schedl 1957d: 100, 1961f: 94, 1964m: 314, 1979c: 239; Wood, S. L. 1992b: 85–86.

***subobtusum* (Schedl)** 1942a: 192 (*Xyleborus*). Lectotype ♀; Malaya, Pahang, Kemasul F. R.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 243.
Distribution: Asia (Malaya).
Hosts: *Quercus* sp.
References: (**hb**) Browne 1961c: 162. (**tx**) Schedl 1942a: 192, 1979c: 243.

***sulcinoides* (Schedl)** 1974d: 463 (*Xyleborus*). Holotype ♀; Gabensis, Morobe Dist., New Guinea, Block 10, New Guinea Industries logging area; CSIRO, Canberra.
Distribution: New Guinea.
Hosts: *Anisoptera polyandra*.
References: (**tx**) Schedl 1974d: 463.

***sulcipenne* (Eggers)** 1932d: 299 (*Xyleborus*). Holotype ♀; Congostaat, Likimi: Gundji; USNM, Washington.
Figures: Nunberg 1963b:pl. 29, figs. 1–2.
Distribution: Africa (Angola/ Cameroon/ Nigeria/ Uganda/ Zaire).
Hosts: *Albizzia sekibalaruguma*, *Celtis zenkeri*.
References: (**ds**) Ferreira 1965: 1126; Schedl 1959p: 21, 25, 1962h: 61, 1962j: 281, 1962k: 1104, 1964j: 42. (**tx**) Anderson, W. H. & Anderson 1971: 33; Eggers 1932d: 299, 1940d: 148; Nunberg 1963b: 59, pls. 29–30; Schedl 1957d: 98–99, 1962j: 281, 1962k: 1104, 1965f: 13.

***tanibe* (Schedl)** 1965c: 77 (*Xyleborus*). Holotype ♀; Madagascar, Montagne d'Ambre, 1100 m; Schedl Collection in NHMW, Wien.
Distribution: Madagascar.
References: (**tx**) Schedl 1965c: 77, 1977b: 219, 1979c: 249.

***tecleae* (Schedl)** 1957e: 883 (*Xyleborus*). Holotype ♀; Uganda, Mpanga; BMNH, London.
Distribution: Africa (Uganda).
Hosts: *Celtis zenkeri*, *Teclea nobilis*.
References: (**ds**) Schedl 1962h: 61, 1962j: 169. (**tx**) Schedl 1957e: 883, 1962j: 169, 1962k: 1104, 1979c: 250.

***tenuigraphum* (Schedl)** 1953e: 29 (*Xyleborus*). Lectotype ♀; Fukien, Kuatun, China; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 251.
Distribution: Asia (Fujian in China/ Uttar Pradesh in India).
References: (**ds**) Schedl 1969c: 55. (**tx**) Schedl 1953e: 29, 1954a: 154, 1955h: 45–46, 1979c: 251.

***terminaliae* (Hopkins)** 1915b: 58 (*Terminalinus*). Holotype ♀; Pagbilao, Philippine Islands; USNM, Washington.
Distribution: Indonesia (Molucas Islands), Philippine Islands.
Hosts: *Terminalia edulis*.
References: (**ds**) Kleine 1934a: 156; Schedl 1966b: 73. (**tx**) Hopkins 1915b: 58; Nobuchi 1983: 304; Schedl 1952k: 162, 1958k: 154.
procerior Schedl 1942c: 189 (*Xyleborus*). Holotype ♀; Aru-Inseln; Schedl Collection in NHMW, Wien. Synonymy: Schedl 1958k: 134. References: (**ds**) Schedl 1966b: 66. (**tx**) Nobuchi 1983: 303; Schedl 1942c: 189, 1958k: 154, 1979c: 199.

***tuberculifer* (Eggers)** 1923a: 195 (*Xyleborus*). Holotype ♀; Neu Guinea mer. (Bujakori); MCG, Genova.
Distribution: New Guinea.
References: (**tx**) Eggers 1923a: 195–196; Schedl 1942c: 191.

***tuberculosissimum* (Eggers)** 1940d: 152 (*Xyleborus*). Holotype ♀; Java (Batoerraden, G. Slamet); Drescher Collection [1 Eggers cotype in NHMW, Wien].
Distribution: Indonesia (Java).
Hosts: *Shorea scabrida*.
References: (**ds**) Schedl 1964g: 242, 1966b: 75. (**tx**) Eggers 1940d: 152; Nobuchi 1983: 304; Schedl 1951i: 82, 1964g: 242, 1979c: 258.

***umbratum* (Eggers)** 1941b: 223 (*Xyleborus*). Holotype ♀; China, Prov. Fukien (Kuatun, 2300 m); Alexander Koenig Museum, Bonn.
Distribution: Asia (Fujian in China).

References: (**tx**) Eggers 1941b: 223; Schedl 1955h: 45–46.

***vagans* (Schedl)** 1977f: 504 (*Xyleborus*). Holotype ♀; Indo-China: Yen-Bay; Schedl Collection in NHMW, Wien.
Distribution: Asia (Vietnam).
References: (**tx**) Schedl 1977f: 504.

***vigilans* (Schedl)** 1939f: 43 (*Xyleborus*). Lectotype ♀; Java, Batoerraden, G. Slamet; Schedl Collection in NHMW, Wien.
Distribution: Indonesia (Borneo, Java).
References: (**ds**) Browne 1960: 201, 1961c: 107, 1962c: 201. (**tx**) Schedl 1939f: 43–45, 1942a: 193, 1979c: 267.

Genus *Xyleborus* Eichhoff

XYLEBORUS EICHHOFF 1864: 37. Type-species: *Bostrichus monographus* Fabricius, subsequent designation by Lacordaire 1866: 381.

Anisandrus Ferrari 1867a: 24. Type-species: *Apate dispar* Fabricius, monobasic. Synonymy: Hagedorn 1910d: 98.
References: (**ay**) Francke-Grosmann 1958: 139–144. (**cn**) Every 1951: 23–24. (**ds**) Scheerpeltz & Winkler 1930: 257. (**tx**) Balachowsky 1949a: 219; Beal & Massey 1945: 61, 149; Chamberlin 1939: 441–447; Dodge 1938: 53–54; Ferrari 1867a: 24; Hopkins 1915b: 10, 67–68; Reitter 1913a: 80, 83; Saalas 1914: 304–306; Schimitschek 1937: 50–53; Spessivtsev 1931: 89; Swaine 1918a: 50, 124–125; Thatcher, T. O. 1951: 79.

Anaeretus Duges 1887: 141. Type-species: *Anaeretus guanajuatensis* Duges =*Bostrichus volvulus* Fabricius, monobasic. Synonymy: Hagedorn 1910d: 97.
References: (**tx**) Duges 1887: 141; Hagedorn 1910d: 97; Wood, S. L. 1983: 650.

Progenius Blandford 1896a: 20. Type-species: *Progenius fleutiauxi* Blandford =*Xyleborus subcostatus* Eichhoff, subsequent designation by Hopkins 1914: 128. Synonymy: Hagedorn 1910d: 98.
References: (**tx**) Beeson 1918: 114–124; Blandford 1896a: 20; Hagedorn 1910d: 98; Hopkins 1914: 128.

Heteroborips Reitter 1913a: 79, 82. Type-species: *Bostrichus cryptographus* Ratzeburg, monobasic. Synonymy: Schedl 1934f: 1645.
References: (**tx**) Balachowsky 1949a: 221; Reitter 1913a: 79, 82; Schedl 1934f: 1645; Scheerpeltz & Winkler 1930: 258.

Xyleborips Reitter 1913a: 79, 111. Type-species: *Xyleborus meuseli* Reitter, monobasic. Synonymy: Schedl 1934f: 1645.
References: (**tx**) Reitter 1913a: 79, 111; Schedl 1934f: 1645.

Boroxylon Hopkins 1915b: 10, 58. Type-species: *Boroxylon stephegynus* Hopkins =*Phloeotrogus bidentatus* Motschulsky, original designation. Synonymy: Schedl 1952j: 162.
References: (**tx**) Hopkins 1915b: 10, 58; Schedl 1952j: 162.

Notoxyleborus Schedl 1934: 84. Type-species: *Notoxyleborus kalshoveni* Schedl, monobasic. Synonymy: Wood 1986a: 83.
References: (**tx**) Schedl 1934d: 84–85, 1969i: 138–139, 1977b: 126; Wood, S. L. 1986a: 83.

Keys: Bright 1968b: 1296, 1976: 131 for North America; Wood 1982b: 778 for North and Central America; Reitter 1913a: 81 for Europe, Yin, Huang, & Li 1984: 154–156 for China.

References: (**ay**) Andersen & Nilssen 1983: 1455; Francke-Grosmann 1958: 139–144; Gardner 1934: 4, 14–15; Nobuchi 1969a: 63; Nusslin 1911, 1912; Van Ryn-Tournel 1975. (**bv**) Schedl 1960f: 10. (**cn**) Bally 1921: 1–24; Barbey 1901: 104; Beeson 1918: 114–124, 1922: 1–2, 1935: 539–543; Bernard 1919: 31–33; Betrem 1931: 799, 1932: 1115 (reprint p. 1–18), 1934: 73–86, 1938: 476–486; Betrem & Gandrup 1932: 18–29; Bodkin 1913: 29–32; Cachan 1957: 5; Craighead 1930: 11; Dourojeanni 1965: 9–32; Fisher, Thompson, & Webb 1954: 1–21; Fullaway 1914: 1–20; Garthwaite 1939: 95–104, 1940: 94–106; Gomez 1962: 218–219; Goot 1935: 1–79; Gowdey 1920: 25–27; Greene & Urich 1931: 277–282; Hall 1914, 1916: 1–47, 1918: 1–49, 1919d: 1–49, 1920: 1–50, 1922: 1–46, 1924: 1–53; Henry 1916: 94–100; Hill 1938: 9–13; Hopping & Jenkins 1933: 1–14; Iton 1959: 55–64; Johnston 1918: 61–82; Kalshoven 1924: 58–72; Lavabre 1958: 121; Lewton-Brain 1913: 1–45; Lugger 1899: 227; Luigioni 1929: 999; Maskew 1919: 309–311; May 1914: 1–35; Menzel 1923: 5–6; Michlitz 1881: 155; Morstatt 1914: 133–141; Moznette, Bissel, & Adair 1931: 47–48; Pasquier 1932: 223–253; Ramakrishna 1918: 74–77; Rau 1935: 10–25; Ritchie 1917: 92–97; Roepke 1911: 10–11; Roughley & Welch 1923: 1–27; Rutgers 1921: 1–25; Rutherford 1914: 41–44; Salt 1926: 9–62; Sasscer 1914: 240–244, 1920: 181–184; Sceenen 1966: 149–150; Schultze 1923: 399–402; Smyth 1919: 109–129; Snyder 1927: 13, 40; Stambaugh 1955: 867–871; Sterrett 1916: 1–88; Swabey 1935: 1–39; Theobold 1914; Ultee 1927: 18–23; Urich 1913: 164–167; Van Dine 1913a: 25–46, 1913b: 251–257; Wearne 1923: 412–413; Wilson 1921: 20–35; Wolcott 1921: 1–46, 1948: 381; Yazawa, Higochi, & Machii 1957: 1–56. (**ec**) Balazy 1963b; Flechtmann 1985; Lindquist, E. E. 1970a: 981. (**hb**) Bright & Stark 1973: 76; Browne 1961c: 100; Buysson 1880: 72–75; Escherich 1923: 440–487; Froggatt 1926: 144–146, 1926b: 359–362; Ghesquiere 1933a: 25, 1933b: 774–778; Hess & Beck 1927: 344–347; Jacobson 1927: 463–478; Judeich & Nitsche 1895: 449–451; Lengerken 1939: 248–253; Lundblad 1958: 512; Munro 1928: 1–29; Neger 1908: 279; Nusslin 1907: 613; Perris 1877: 413; Rudnev 1928: 165–

206; Schedl 1962j: 102, 1977b: 127; Speyer 1923: 11–12; Wichmann 1927: 348–376; Wood, S. L. 1982b: 776, 1986a: 83. (**ds**) Atkinson, Rabaglia, & Bright 1990; Bertolini 1872: 202; Blackwelder 1947: 778; Bright & Stark 1973: 76; Brimblecombe 1953: 23; Browne 1961c: 100; Costa Lima 1956: 284–293; Endrodi 1957b: 417; Fleutiaux 1950: 9; Formanek 1907: 34, 51–52; Horion 1935: 351; Karaman 1972: 125; Kolbe 1897: 283; Kostin 1973: 270; Munro 1946: 10–48; Palm 1959: 42, 45, 353; Patterson & Hatch 1945: 145–156; Perkins 1900: 173–174; Provancher 1877: 567; Reitter 1906: 713; Schedl 1962j: 102, 1966b: 45, 1977b: 127; Scheerpeltz & Winkler 1930: 258; Scherdlin 1920: 207; Schreiner 1882: 248; Wachtl 1876: 458; Wood, S. L. 1982b: 776, 1986a: 83; Worndle 1950: 381. (**tx**) Arnett 1960: 1044, 1968: 1044; Balachowsky 1936: 22, 1949a: 218–232; Beal & Massey 1945: 9, 48–49, 54, 61, 151–152; Bedel 1888b: 397, 402; Beeson 1916: 217–221, 1930: 220–272, 1938: 291, 1941: 391–404; Blackman 1922b: 77, 116–117, 1950: 218–341; Blandford 1893c: 11, 1893d: 441–442, 1894b: 260, 1894d: 100–121, 1895b: 81, 1897a: 183–184, 1898b: 189–197; Blatchley & Leng 1916: 578, 592–593, 615; Bright 1963: 104, 1966c: 132, 1968b: 1288–1296, 1972: 71–73, 1976d: 130–131; Bright & Stark 1973: 76; Browne 1941: 63, 1949b: 898, 1950b: 641, 1958: 164–182, 1959: 292–300, 1960: 201–220, 1961c: 100–165, 1961d: 46–51, 1963c: 53–58, 1966: 233–257; Chamberlin 1918: 13, 35–36, 1939: 432–456, 1958: 181–187; Choo 1983: 102; Choo, Woo, & Nobuchi 1988b; Dodge 1938: 20, 54; Duffy 1953: 9, 14; Eggers 1923: 129–130, 1930: 177–208, 1933b: 24, 1939: 114–123, 1940: 99–108, 1943c: 64; Eichhoff 1864b: 37–46, 1868d: 419–422, 1869a: 275, 1878b: 58–65, 476–484, 1881a: 53, 268, 1883a: 108–142; Ferrari 1967a: 5, 19, 21–25, 1967b: 107, 110, 114, 1968: 258; Hagedorn 1904c: 412, 1906: 116, 1907b: 110, 1907c: 290–293, 1908: 376–377, 1909a: 744, 1909b: 138, 1910a: 89, 98–99, 1910b: 6–11, 1910d: 64, 1912b: 35, 1912c: 356, 1913b: 253–255; Hoffmann 1942: 72; Hopkins 1914: 116, 134, 1915b: 10, 60–62, 1915c: 171–227; Johnson, N. E. 1958: 236; Kalshoven 1922: 782–793, 1959: 135; Keen 1952: 186; Kirsch 1875: 283; Krivolutskaya 1958: 167; Kurenzov 1941: 193; Lacordaire 1866: 373, 380; LeConte 1868: 151–161, 1876: 358–360; LeConte & Horn 1883: 518; Lekander 1962: 421, 429; Lindemann 1876: 345; Lovendal 1889: 26–28, 72; Melville & China 1968; Motschulsky 1858: 65; Murayama 1928b: 29, 1930b: 22–23, 1931a: 41, 1933a: 21–30, 1953a: 16, 1954b: 202; Niisima 1909: 152; Nunberg 1928: 137–173, 1954: 4–6, 57–58, 1959: 413–466, 1963: 1–127, 1968a: 272–299; Pfeffer 1989a: 85; Redtenbacher 1874: 381; Reitter 1894: 38, 69, 89–92, 1913a: 79–82, 1916: 293–295; Sampson 1911: 382, 1912: 247, 1914: 382, 1923: 286; Schedl 1931c: 339–347, 1933: 84, 1934d: 85, 1934f: 1645, 1937e: 550, 1937h: 170, 1938a: 173, 1940a: 361, 1940c: 203–208, 1942d: 39, 1944: 68, 1952k: 161–162, 1955g: 4, 1957d: 1–162, 1957e: 865–883, 1958d: 194, 1958f: 33–46, 1958k: 145, 148, 1959a: 493, 1959q: 705–710, 1960f: 110, 1962j: 102, 1962n: 698, 1962p: 203, 1963g: 52, 1963j: 481, 1964d: 213–214, 1964j: 52, 1965f: 3–15, 1968e: 261–270, 1977b: 126–127; Schimitschek 1937: 50–51; Sedlaczek 1935: 157; Spessivtsev 1922: 477, 1931: 89; Stark 1952: 15–425; Stebbing 1914: 582; Strohmeyer 1906d: 41, 1910e: 128, 1911b: 17, 24–25; Swaine 1918a: 50, 126–127; Thompson, R. T. 1965; Thomson 1965: 269; Trappen 1935: 144; Wood, S. L. 1957a: 342–343, 1960a: 51, 1961a: 47, 1967c: 119–141, 1974h: 230–231, 1982b: 776–841, 1986a: 83; Yin & Huang 1981: 566.

***abberrans* Schedl** 1959a: 502. Holotype ♀; Ceylon: Millawitiya Estate; Schedl Collection in NHMW, Wien.

Distribution: Asia (Sri Lanka), South America (introduced: Brazil).

References: (**ds**) Schedl 1959a: 502, 1971f: 148. (**tx**) Schedl 1959a: 502, 1979c: 8.

***abbreviatipennis* Schedl** 1973e: 88. Holotype ♀; Bismarck Geb., New Guinea; Schedl Collection in NHMW, Wien.

Distribution: New Guinea.

References: (**tx**) Schedl 1973e: 88, 1979c: 8.

***abscissus* Browne** 1974b: 537. Holotype ♀; Sarawak: Kuching; BMNH, London.

Distribution: Indonesia (Sarawak in Borneo).

Hosts: *Shorea* sp.

References: (**ds**) Browne 1980b: 381; Ohno et al. 1987a: 87. (**tx**) Browne 1974b: 537.

***acanthurus* (Lea)** 1910: 137 (*Tomicus*). Holotype ♀; Queensland: Cairns; NMV, Melbourne.

Distribution: Australia (Queensland).

References: (**ds**) Brimblecombe 1953: 27. (**tx**) Lea 1910: 137; Schedl 1938f: 50, 1962j: 313–314.

***adamsoni* Beeson** 1935a: 120. Holotype ♀; Tahiti: Papenoo Valley; not given.

Distribution: Rarotonga in Cook Islands, Marquesas Islands, Tahiti Islands.

References: (**ds**) Beaver & Maddison 1990: 1372; Beeson 1938b: 291, 1940: 200. (**tx**) Beaver 1991: 94; Beeson 1935a: 120; Schedl 1955b: 287.

nigroaffinis Beeson 1940: 199. Holotype ♀; Society Islands: Tahiti, Taoriri, Mt. Aorai Trail; BPBM, Honolulu. Synonymy: Beaver 1991: 94.

References: (**tx**) Beaver 1991: 94; Beeson 1940: 199; McNamara 1984: 759.

rapanus Beeson 1940: 200. Syntypes 2 ♀; Mangareva Islands, Rapa Island; Maitua, 700–800 ft.; BPBM, Honolulu. Synonymy: Beaver 1991: 94.

References: (**tx**) Beaver 1991: 94; Beeson 1940: 200.

***adelographus* Eichhoff** 1868a: 400. Syntypes ♀; Brasilia; Hamburg Museum, lost.
Figures: Nunberg 1959a:pl. 15, figs. 1–2, Pedrosa-Macedo & Schonherr 1985: 22.
Distribution: South America (Argentina/ Brazil/ Cayenne/ Colombia/ Guyana/ Paraguay).
Hosts: *Araucaria angustifolia, Couma macrocarpa, Pinus elliottii*.
References: (**ds**) Blackwelder 1947: 779; Gemminger & Harold 1872: 2684; Hagedorn 1910d: 98; Kleine 1913b: 158, 1914b: 337, 339; Nunberg 1962: 224; Pedrosa-Macedo & Schonherr 1985: 22; Schedl 1952a: 446, 1966f: 87, 1967d: 2, 1970e: 83, 1973d: 162, 1976a: 53, 1978c: 291; Schonherr & Pedrosa-Macedo 1981: 54. (**tx**) Eggers 1933b: 3, 31–32, 1941a: 103; Eichhoff 1868a: 400, 1875: 202, 1878b: 352; Hagedorn 1905a: 412, 1910a: 152, 1910b; Nunberg 1959a: 413; Pedrosa-Macedo & Schonherr 1985: 22; Schedl 1936i: 108–109, 1948f: 281, 1952a: 446; Wood, S. L. 1975a: 22.

vitiosus Schedl 1940a: 367. Holotype ♀; Mexico; Schedl Collection in NHMW, Wien. Synonymy: Wood 1975a: 22, 1982b: 778.
Notes: (1) This holotype is an intercepted or obviously mislabeled specimen from Brazil and should not be cited as occurring in Mexico without additional records.
References: (**ds**) Blackwelder 1947: 780. (**tx**) Schedl 1940a: 367–368, 1979c: 268; Wood, S. L. 1975a: 22, 1982b: 778.

accomodatus Schedl 1966f: 112. Holotype ♀; Rio de Janeiro; Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 176.
References: (**tx**) Schedl 1966f: 112, 1979c: 10; Wood, S. L. 1989: 176.

***adossuarius* Schedl** 1952b: 367. Syntypes ♀; Luzon: Baguio, Benguet-Irisan; Schedl Collection in NHMW, Wien.
Distribution: Philippine Islands (Luzon).
Notes: (1) Schedl 1979c: 12 (citation of holotype invalid).
References: (**ds**) Schedl 1966b: 45. (**tx**) Nobuchi 1983: 302; Schedl 1952b: 367–368, 1979c: 12.

***adusticollis* (Motschulsky)** 1863: 514 (*Tomicus*). Holotype ♀; Montagnes de Nura-Ellia; IZM, Moscow.
Distribution: Asia (Malaya/ Sri Lanka), Indonesia (Sarawak in Borneo, Java), Philippine Islands.
Hosts: *Aegle marmelos, Cinnamomum* sp., *Eugenia* sp., *Kopsia flavida, Lansium domesticum, Palaquium gutta, Quercus* sp., *Veronica arborescens, Xanthophyllum*. Browne 1961c: 157 records seven additional families without citing species.
References: (**ds**) Gemminger & Harold 1872: 2689; Hagedorn 1910d: 48; Kleine 1913b: 127, 1914b: 273. (**tx**) Hagedorn 1910a: 103; Motschulsky 1863: 514; Wood, S. L. 1969c: 120.

vestitus Schedl 1931c: 341. Holotype ♀; Java, Buitenzorg, 250 m; Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 176.
Notes: (3) Browne 1983a: 554 incorrectly cited this species in *Streptocranus* (=*Coptoborus*). Schedl 1939e: 354 (described male).
References: (**hb**) Beaver & Browne 1978: 614; Browne 1961c: 157; Kalshoven 1959c: 157. (**ds**) Beaver & Browne 1978: 614; Browne 1961c: 157, 1962c: 202, 1983a: 554, 1985b: 291; Kalshoven 1959c: 157; Nobuchi 1978a: 19; Schedl 1966g: 33. (**tx**) Browne 1983a: 554; Nobuchi 1978a:pl. 2, 1983: 304; Schedl 1931c: 341–342, 1939e: 354, 1950g: 895, 1954a: 144, 1979c: 266; Wood, S. L. 1989: 176.

***aequalis* (Reitter)** 1913a: 81 (*Anisandrus*). Holotype ♀; Ostsibirien: Sotka-gora; NHMB, Budapest.
Distribution: Asia (E USSR).
Hosts: *Juglans mandschurica, Phellodendron amurense*.
References: (**cn**) Kurenzov 1935c: 189, 1956b: 29. (**ec**) Kurenzov 1934a: 50, 1951d: 36, 1951e: 66. (**hb**) Kurenzov 1935a: 37, 1948b: 112, 1951b: 18, 1951d: 36, 1951e: 66; Stark 1952: 429. (**ds**) Konovalova 1966: 106; Krivolutskaya 1983; Krivolutskaya & Kupyanskaya 1970; Kurenzov 1934a: 50, 1935a: 37, 1935c: 189, 1936a: 110, 1936b: 351, 1938a: 60; Mandl 1931: 25; Stark 1952: 429; Yanovsky & Tegshzhargal 1985: 413. (**tx**) Kurenzov 1941a: 190–193, 1948b: 112; Reitter 1913a: 81; Schedl 1934f: 1645; Stark 1952: 429.

***aequatorensis* Eggers** 1940b: 108. Holotype ♀; Congostaat, Equateur (Flandria); MRCB, Tervuren.
Figures: Nunberg 1963b:pl. 2, figs. 5–8.
Distribution: Africa (Zaire).
References: (**tx**) Eggers 1940b: 108; Nunberg 1963b: 11, pl. 2; Schedl 1962j: 235, 1979c: 13.

***affinis* Eichhoff** 1868a: 401. Syntypes ♀; America bor., Cuba; syntypes in Hamburg Museum were lost, 1 in USNM, Washington.
Figures: Bright 1972d: 95, 1976d: 133, Guagliumi 1972: 405, Nunberg 1978: 102, Pedrosa-Macedo & Schonherr 1985: 23, Samuelson 1981: 54, Schedl 1977b: 167, Wood 1960a: 65.
Distribution: Africa (Angola/ Comore in Azores Islands/ Burundi/ Cameroon/ Congo/ Equatorial Guinea/ Ethiopia/ Fernando Poo/ "French West Africa"/ Gabon/ Ghana/ Guinea/ Ivory Coast/ Kenya/ Liberia/ Malawi/ Mauritania/ Mauritus Island/ Mozambique/ Nigeria/ Ruanda/ Senegal/ Seychelles Islands/ Sierra Leone/ South Africa/ Tanzania/ Togo/ Uganda/ Zaire/ Zambia), Antilles Islands (Barbados/ Cuba/ Dominica/ Guadeloupe/ Dominican Republic in Hispanola/ Jamaica/ Puerto Rico/ Tobaga/ Trinidad), Asia (India/ Israel/ Malaya/ Sri Lanka), Australia, Cook Islands, Fiji Islands, Galapagos Islands, Hawaiian Islands, Indonesia (Celebes, Java, Sumatra), Madagascar, Micronesia (Truk in Mariana Islands,

Palau Islands), North America (Belize/ Costa Rica/ El Salvador/ Guatemala/ Honduras/ Isla del Coco/ all states in Mexico/ Nicaragua/ Panama/ Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Illinois, Indiana, Louisiana, Maryland, Massachusetts, Michigan, Mississippi, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Texas, Virginia, West Virginia in USA), Philippine Islands, Reunion Island, Samoan Islands, South America (Argentina/ Bolivia/ Brazil/ Cayenne/ Chile/ Colombia/ Ecuador/ Guyana/ Paraguay/ Peru/ Suriname/ Uruguay/ Venezuela), Tahiti Islands.

Hosts: Several hundred hosts are listed by Wood 1982b: 831 and Schedl 1962j: 349–360.

References: (**ay**) Francke-Grosmann 1963a: 359, 1963b: 423; Schneider 1976. (**bv**) Atkinson, Foltz, & Connor 1988; Aulmann 1911: 438–441; Dethier 1947; Phillips et al. 1988; Turnbow & Franklin 1980. (**cn**) Alliot & Ivanes 1950: 163–168; Anonymous 1964h, 1965g, 1967i, 1968k, 1969h, 1976e; Aulmann 1913: 1–126; Bavendamm, Schneider, & Mielke 1962: 8–9; Beal & Massey 1945: 158–159; Beaver 1976a: 23; Blackman 1950: 307, 340; Blandford 1892b: 157; Bondar 1922; Box 1953a; Cachan 1957: 42–53; Carter 1949: 761–766; Chamberlin 1939: 452; Christian 1939; Cleare 1924: 65–68; Costa Lima 1956; Dinther 1957, 1960: 111–112; Doane et al. 1936; Downes & Williams 1950; Ebeling 1950: 537, 1959; Equihua-Martinez 1988; Estrada & Atkinson 1988: 207; Ferreira & Morin 1985; Ghesquiere 1933a; Gowdey 1914: 36–58, 1918: 42–51; Green 1916: 608–636; Guagliumi 1972: 407, 1973: 407; Hagedorn 1913a; Hamlen & Woodruff 1975; Hargreaves 1925: 21–28; Hart 1892b, 1893; Hopkins 1902b: 62, 1904a: 45, 1905a: 381–398; Hubbard 1897b: 21; Kleine 1932a: 305; Kowal 1949b: 470; Leiby 1925; Pawsey 1968; Riley 1892a: 402; Sallenave 1948: 434–440; Sefer 1961; Silva, Gayao, & Castro 1959: 11; Small 1921: 38; Titus & Pratt 1904: 7; Tsankov 1977; Tsankov et al. 1974: 25; Urich 1913: 247–249, 1915: 156–161, 200–203; Vuillaume et al. 1981: 348; Woodruff & Hamlen 1974; Wyniger 1962a: 118, 1962b: 397; Yunus & Hua 1980: 230; Zehntner 1900: 501. (**ec**) Baker 1963: 222–265; Batista 1947: 109; Batra 1963b: 213–236; Beaver 1988a: 65; Carter 1949; Chamberlin 1939: 452; Equihua & Atkinson 1986: 629; Norris 1979; Roeper et al. 1980; Schedl, W. 1962: 364–366; Schneider 1976, 1987; Slaby 1947: 378; Verrall 1941: 552, 1943: 125, 135–144; Vuillaume et al. 1981: 348; Woodruff & Hamlen 1974. (**hb**) Atkinson & Equihua 1985b: 237; Atkinson, Foltz, & Connor 1988; Aulmann 1911; Baker, W. L. 1972: 270; Beal & Massey 1945: 158–159; Beaver 1976a: 23, 1988a: 65, 1989a: 2, 4; Beaver & Browne 1978: 602; Beaver & Loeyttyniemi 1985a: 73; Beeson 1929; Blackman 1922b: 116–118, 1950; Blandford 1892b; Bright 1976d: 137; Browne 1961e: 10, 1963a: 239; Chamberlin 1939: 449–452; Costa Lima 1956; Deyrup & Atkinson 1987a: 65; Doane et al. 1936; Drooz 1985: 374; Ebeling 1950; Equihua & Atkinson 1986: 629; Ferreira & Morin 1985; Gardner 1957: 33; Guagliumi 1972: 73; Hagedorn 1913a; Hart 1892: 342; Hoffmann 1941; Hopkins 1904a: 45, 1905a: 383; Hubbard 1897b: 21; Jones, Roberts, & Baker 1959: 13–56; Kalshoven 1963; Kleine 1932a: 305; Loyttyniemi, Beaver, & Loyttyniemi 1984; Morstatt 1924: 36; Ostmark 1968; Pollet 1977; Roberts 1960: 35–38, 1961: 39–60, 1969: 130; Roeper et al. 1980; Schedl 1958d: 189, 1962j: 361, 1977b: 168; Schneider 1987; Speyer 1923: 19; Viana 1964: 123; Webb & Jones 1957: 25–43; Wood, S. L. 1982b: 830; Woodruff & Hamlen 1974; Zehntner 1900: 501. (**ds**) Alluaud 1900: 439; Anonymous 1964h, 1965g, 1967i, 1969h, 1976e; Atkinson & Equihua 1985b: 237, 1986a: 421; Atkinson et al. 1986: 62, 1991: 160; Baker, W. L. 1972: 270; Beal & Massey 1945: 158–159; Beaver 1976a: 23, 1988a: 65, 1989a: 2, 4; Beaver & Browne 1961c: 145, 1978: 602; Beaver & Loeyttyniemi 1985a: 73; Beeson 1929, 1938: 199; Bhasin, Roonwal, & Singh 1958: 122; Blackman 1922b: 116–118, 1950: 307, 340; Blackwelder 1947: 779; Blandford 1898b; Blatchley & Leng 1916: 618; Brader 1964: 5; Bright 1968b: 1315, 1972d: 83, 1976d: 137, 1982a: 128, 1985c: 173; Brimblecombe 1953: 27; Brimley 1938: 248; Browne 1949e: 174–189, 1963a: 238–239, 1975a: 759, 1975b: 395; Bruch 1914a: 429; Brunner et al. 1945; Carter 1949: 761–766; Chamberlin 1939: 449–452; Cola 1971: 65, 1973; Costa Lima 1936, 1956; Currie 1905: 7; DeLeon 1042a; Deyrup 1981b: 6; Deyrup & Atkinson 1987a: 65; Drooz 1985: 374; Ebeling 1950, 1959; Eggers 1926; Equihua & Atkinson 1986: 629; Estrada & Atkinson 1988: 207; Ferreira & Morin 1985; Fleutiaux & Salle 1890: 457; Frost 1964: 144; Gemminger & Harold 1872: 2685; Ghesquiere 1933a; Guagliumi 1966: 218, 1972, 1973: 404; Hagedorn 1907a: 261, 1907b: 111, 1910d: 98, 1913a; Hayward 1942: 29; Hoffmann 1940: 61, 1941: 42, 1942: 13; Kalshoven 1924: 9, 1963: 235–236; Kirk 1969, 1970; Kleine 1912a: 162, 212, 1913b: 158, 1914b: 303, 324, 337, 343–344, 354, 373, 378–379, 1928: 305, 1932a: 305, 1934a: 171; Kolbe 1910: 41; Lee 1971: 31; Leng 1920: 342; Leng & Mutchler 1917: 220; Lepesme et al. 1948: 647; Martorell 1945: 470; Mayne 1915: 577–596; Murayama 1936b: 115; Nunberg 1952: 20, 1958a: 481, 1961a: 329, 1962: 224, 1963c: 98, 1965b: 20, 1971: 58, 1972b: 197; Ohno, Yoneyama, & Nakazawa 1982a: 3, 1982b: 8, 1987: 94; Ohno et al. 1987: 87, 1988a: 92, 1989: 61; Ostmark 1968; Pedrosa-Macedo & Schonherr 1985: 23; Pollet 1977; Riley 1894: 227; Roonwal 1954: 23, 54; Samuelson 1981; Santoro 1957: 26; Schedl 1936j: 21, 1940: 365–366, 1943d: 69, 1948g: 25, 1950h: 105, 1951b: 376, 1951h: 285,

1952a: 444, 1953d: 70, 1957d: 15–16, 84, 102, 1958f: 35–36, 1959a: 470, 504, 1960a: 75–80, 1960f: 57–100, 1961d: 177, 1961j: 349, 1962h: 60, 1962j: 331–374, 1962m: 62, 1962p: 209, 494, 1962q: 482–494, 1962r: 96, 1963a: 31, 1963c: 160, 1963f: 52, 1963h: 268, 1964e: 69, 1964f: 618, 1964i: 248, 1964j: 42, 1964m: 315, 1965: 21–22, 1966a: 276, 1966c: 227–228, 1966g: 36–37, 1967d: 3, 1967e: l217, 1967f: 156, 1969d: 7–11, 1969h: 105, 1970c: 70, 1970d: 234, 1970e: 84, 90, 1970f: 581, 1970g: 309–312, 1971e: 2, 1971f: 149, 1971g: 192, 1972b: 266, 1972e: 282, 1972g: 40, 1972k: 295, 1973a: 367, 1973d: 156, 1974e: 52, 1975h: 350, 1975k: 277, 1976a: 53, 1977b: 168, 1977d: 279, 1977e: 43, 1978c: 292, 1979b: 416, 1982: 279; Schneider 1959: 8–12, 1987; Schonherr & Pedrosa-Macedo 1981: 54; Schreiner 1882: 248; Schwarz 1895b: 171; Sefer 1961; Smith, J. B. 1910: 402; Spahr 1981; Stahel 1917: 3; Swaine 1909: 151; Terra 1987: 25; Turnbow & Franklin 1980; Viana 1964: 123; Webb 1945: 67; Wichmann 1954: 503, 517–521; Wolcott 1936: 318, 1948: 381–383; Wood, S. L. 1957e: 1273, 1960a: 51, 1961c: 1, 1977a: 73, 1982b: 830; Woodruff & Hamlen 1974; Yunus & Hua 1980: 230; Zehntner 1900: 1; Zimmermann 1908a: 269. (**tx**) Aulmann 1911; Beal & Massey 1945: 158–159; Beeson 1929: 245, 1935: 119–120; Blackman 1922b: 116–118; Blandford 1892b, 1893c: 1–46, 1894d: 116, 1895b: 195–196, 216, 1896: 20, 1898b: 216–217, 1898c: 3–5; Blatchley & Leng 1916: 618–619; Bright 1968b: 1315–1316, 1972d: 83, 95, 1976d: 133, 137, 1982a: 128, 1985c: 173; Chamberlin 1939: 449–452; Costa Lima 1936: 358, 1956: 291; Eggers 1926a: 301, 1927b: 193–194, 1930d, 1932d: 303, 1933b: 3, 36, 1940a: 108; Eichhoff 1868a: 401, 1877: 126–127, 1878b: 372, 1896: 609–610; Guagliumi 1972: 405; Hagedorn 1905a: 412, 1907a: 261, 1907b: 111, 1910a: 152, 1912a: 340–343, 1913b: 255–256; Hopkins 1915b: 61, 64; Hubbard 1897b: 20–21; Keler 1928: 29; Kirsch 1875: 284; Nunberg 1952: 20, 1958a: 481, 1968: 272, 1978: 101, 102; Pedrosa-Macedo & Schonherr 1985: 23; Powell, W. 1980: 29; Sampson 1914: 387–388; Samuelson 1981: 54; Schaufuss 1897a: 210, 1897b: 101–103; Schedl 1931c: 346, 1951k: 140, 1952k: 163, 1957a: 194, 1966f: 76, 1977b: 167–168; Schwarz 1895b: 171, 210; Strohmeyer 1911: 25; Swaine 1909: 151, 1917: 24, 1918a: 127; Terra 1987: 25; Wood, S. L. 1960a: 51, 65, 73, 1961: 1, 1982b: 830; Wylie & Yule 1977. (**ms**) Schedl 1972e: 282.

affinis parvus Eichhoff 1878b: 372. Syntypes ♀; not given; Hamburg Museum, lost. Synonymy: Wood 1960a: 71.

References: (**tx**) Eggers 1933b: 3, 1940a: 108; Eichhoff 1878b: 372; Wood, S. L. 1960a: 71.

affinis mascarensis Eichhoff 1878b: 372. Syntypes ♀; St. Mauritzio insula Africana; Hamburg Museum, lost. Synonymy: Wood 1960a: 71.

References: (**ay**) Batra 1963b: 228; Entwistle 1963b; Francke-Grosmann & Schedl 1960: 405; Lhoste & Roche 1960; Schneider 1976; Van Ryn-Tournel 1972. (**bv**) Entwistle 1963b; Schedl 1960f: 57. (**cn**) Anonymous 1953j: 25, 1970c: 14; Bondar 1940; Browne 1949e; Dinther 1961; Frappa 1933: 179; Ghesquiere 1933a: 26–36, 1933b: 776–785; Roberts 1961a: 42; Roonwal 1954: 23; Schneider & Leder 1959: 8; Schwerdtfeger 1966b. (**ec**) Anonymous 1953j: 25; Browne 1961c: 10; Francke-Grosmann & Schedl 1960; Schedl 1958d: 189; Schneider 1976; Walt, Scott, & Van Der Klift 1971b: 468. (**hb**) Anonymous 1959c: 18; Browne 1961c: 145; Entwistle 1963b; Roberts 1961a: 42; Schedl 1962j: 331; Swabey 1935: 6; Thompson, G. H. 1963: 72. (**ds**) Anonymous 1970c: 14; Beeson 1935b, 1938b, 1940, 1941: 399, 1961: 307; Browne 1961c: 10; Choo & Woo 1983; Cola 1971; Eggers 1926a; Ferreira 1965: 1124; Ferrer 1942; Ghesquiere 1933a; Lee, R. F. 1971; Mayne & Donis 1960: 104, 1962: 320; Menier 1973a; Nobuchi 1979a: 406; Nonveiller 1984: 41; Nunberg 1972b: 197; Quayle 1941; Roberts 1960b: 35, 1960e, 1960f; Roonwal 1954: 23; Schedl 1936d: 4, 1936j: 21, 1938d: 451, 1959a: 504, 1959p: 20, 1960a: 76, 1960f: 40, 1961c: 70, 1961f: 177, 1961j: 349, 1962h: 60, 1962j: 331, 1962k: 1101, 1963a: 37, 1963c: 160, 1963f: 60, 1964e: 69, 1964f: 618, 1964i: 248, 1964j: 42, 1965e: 355, 1965g: 21, 1966a: 276, 1966c: 227, 1966f: 76, 1966g: 32, 1967d: 3, 1967e: 217, 1969d: 4, 1970d: 234, 1970e: 84, 1971a: 278, 1971f: 149; Schwerdtfeger 1960b; Spahr 1981; Swabey 1935: 6; Thompson, G. H. 1963: 72; Van Zwaluwenburg 1956: 9. (**tx**) Beeson 1929: 240–241, 1935b: 119, 1938: 293, 1940: 199; Eggers 1926a: 301, 1927a: 195, 1933b: 373, 1940a: 108, 1940c: 238, 1941a: 108, 1941d: 179, 1943c: 65–66; Mayne & Donis 1962: 320; Nobuchi 1978a:pl. 4; Schaufuss 1897a: 210; Schedl 1935j: 1, 1936d: 4, 21, 1938d: 451, 1939e: 333, 1939g: 170, 1940a: 365, 1941b: 114, 1941d: 380, 1942a: 171, 1942d: 7, 1948c: 665, 1948d: 36, 1948f: 261, 1950c: 205, 1950d: 9, 13, 15, 18, 31, 1950e: 212, 1950g: 893, 1950h: 105, 1951e: 39–40, 1951f: 40, 1951i: 46, 1951k: 140, 1951m: 73, 1952a: 444, 1952g: 53, 1952h: 66, 71, 1952j: 5, 1952k: 163, 1953d: 70, 1953g: 242, 1954a: 142, 1954d: 872, 1954e: 47, 53, 1955d: 269, 1955f: 260, 1955g: 45, 1957a: 194, 1957b: 151, 1957d: 15, 84, 1958c: 1, 1959a: 504, 1962j: 331, 1962r: 96, 1965g: 21; Wood, S. L. 1960a: 51, 73.

affinis fuscobrunneus Eichhoff 1878b: 372. Lectotype ♀; Brasilia; Schedl Collection in NHMW, Wien, syntypes in Hamburg Museum were lost, 1 in Schedl Collection in NHMW, Wien. Synonymy: Schedl 1959a: 504.

References: (**hb**) Viana 1964: 123. (**ds**) Nun-

berg 1958: 481; Santoro 1957b: 26; Viana 1964: 123. (**tx**) Eichhoff 1878b: 372; Schedl 1938i: 28, 1940a: 365–366, 1940c: 208, 1943d: 66, 1948d: 36, 1948g: 25, 1950i: 147, 1951h: 285–286, 1952a: 444, 446, 1952d: 343, 1952h: 71, 1955g: 46, 1958f: 35–36, 1959a: 504, 1979c: 14

sacchari Hopkins 1915b: 64. Holotype ♀; St. Vincent, West Indies; USNM, Washington. Synonymy: Schedl 1959a: 504, Wood 1982b: 830.

References: (**cn**) Scaramuzza 1942: 147; Souphieff & Scherbinovskaja 1937: 103. (**hb**) Morstatt 1924: 50. (**ds**) Leng & Mutchler 1917: 220; Martorell 1945: 471; Souphieff & Scherbinovskaja 1937: 103; Wolcott 1933: 373, 1936: 319. (**tx**) Beeson 1929: 240–241; Hopkins 1915b: 64; Schedl 1959a: 504, 1962j: 331.

subaffinis Eggers 1933b: 36. Holotype ♀; Franz. Guayana (Nouveau Chantier, St-Laurent du Maroni); MNHN, Paris. Synonymy: Schedl 1959a: 504.

References: (**ds**) Blackwelder 1947: 780; Floch 1947, 1950. (**tx**) Eggers 1933b: 36; Schedl 1939e: 333, 1939j: 565, 1940a: 365, 1940c: 208, 1943d: 56, 1951b: 376, 1952h: 71, 1955g: 46, 1959a: 504, 1962j: 331.

societatis Beeson 1935a: 120. Holotype ♀; Tahiti: Papenoo Valley; BPBM, Honolulu. Synonymy: Beaver 1991: 94.

References: (**tx**) Beaver 1991: 94; Beeson 1935a: 120–121, 1938b: 294.

proximus Eggers 1943c: 66. Holotype ♀; Congostaat: Leopoldville, Lomami-Kamiema Bangwela; MRCB, Tervuren. Synonymy: Schedl 1962j: 331.

References: (**tx**) Eggers 1943c: 66–67; Schedl 1950g: 893, 1959a: 504, 1962j: 331, 404.

***africanus* Eggers** 1927a: 194. Holotype ♀; Belg.-Congo: Ituri, Medje; MRCB, Tervuren.

Figures: Nunberg 1963b:pl. 3, figs. 1–6.

Distribution: Africa (Cameroon/ Equatorial Guinea/ Gabon/ Ghana/ Guinea/ Ivory Coast/ Nigeria/ Seychelles Islands/ Uganda/ Zaire/ Zambia).

Hosts: *Albizzia gummifera*, *Beilschmiedia corbisieri*, *Chrysophyllum lacairtianum*, *Cistanthera papaverifera*, *Gossypium hirsutum*, *Maesobothrya* sp., *Theobroma cacao*, *Turraeanthus africana*.

References: (**cn**) Beaver 1988a: 65. (**hb**) Beaver 1988a: 65; Loyttyniemi, Beaver, & Loyttyniemi 1984; Schedl 1962j: 328. (**ds**) Beaver 1988a: 65; Beaver & Loyttyniemi 1985a: 73; Browne 1965: 188, 1983a: 556; Ghesquiere 1933a: 31, 35, 1933b: 781, 785; Kleine 1934a: 172; Nunberg 1952: 20, 1965b: 20; Roberts 1969: 130; Schedl 1962h: 60, 1962j: 328, 1962k: 1098, 1964j: 42, 1967e: 215, 1969d: 9, 1971g: 192, 1977b: 175; Wichmann 1954: 522. (**tx**) Eggers 1927a: 194; Nunberg 1952: 20, 1963b: 12, pl. 3; Schedl 1954d: 871, 1955d: 270, 1957d: 96, 1962h: 60, 1962j: 328, 1970e: 96, 1977b: 175.

africanus picinus Schedl 1957d: 96. Holotype ♀; Congo Belge: Kivu, route Tshibinda-Bunyakiri; MRCB, Tervuren.

References: (**hb**) Schedl 1962j: 329. (**ds**) Schedl 1962h: 60, 1962j: 329. (**tx**) Nunberg 1963b: pl. 3; Schedl 1957d: 96, 1962j: 329, 1963b:pl. 3, 1979c: 15.

***agamus* Perkins** 1900: 178. Lectotype ♂; Lanai; BMNH, London, designated by Samuelson 1981: 69.

Distribution: Hawaiian Islands (Hawaii, Lanai).

Hosts: *Freycinetia* sp.

References: (**ds**) Beeson 1938b: 291; Hagedorn 1910d: 98; Kleine 1913b: 158, 1914b: 302; Samuelson 1981: 69. (**tx**) Hagedorn 1910a: 152; Perkins 1900: 178; Samuelson 1981: 69.

***agathis* Browne** 1984b: 291. Holotype ♀; Indonesia to Kawasaki (Japan), imported; BMNH, London.

Distribution: Indonesia.

Hosts: *Agathis* sp.

References: (**tx**) Browne 1984b: 291.

***aglaiae* Browne** 1984a: 156. Holotype ♀; Putput (New Britain) to Nagoya (Japan), imported; BMNH, London.

Distribution: New Britain Island.

Hosts: *Aglaia* sp.

References: (**ds**) Ohno et al. 1989: 61. (**tx**) Browne 1984a: 156.

***agraphus* Schedl** 1977f: 503. Holotype ♀; Philippine Is.: La Provesdora Inc, Angeles, Pampanda; Schedl Collection in NHMW, Wien.

Distribution: Philippine Islands.

References: (**tx**) Nobuchi 1983: 302; Schedl 1977f: 503.

***algidus* Schedl** 1979b: 414. Holotype ♀; Cote d'Ivoire, Man-Orstom; Schedl Collection in NHMW, Wien.

Distribution: Africa (Ivory Coast).

References: (**tx**) Schedl 1979b: 414.

***alluaudi* Schaufuss** 1897a: 210. Syntypes ♂♀; Madagascar, Diego Suarez; Menge and Schaufuss Collections.

Figures: Nunberg 1978: 104, Schedl 1962j: 236, 1977b: 150

Distribution: Africa (Burundi/ Cameroon/ Equatorial Guinea/ Ethiopia/ Fernando Poo/ Gabon/ Ghana/ Ivory Coast/ Kenya/ Nigeria/ Ruanda/ Sierra Leone/ South Africa/ Sudan/ Tanzania/ Uganda/ Zaire/ Zambia), Madagascar.

Hosts: Many listed by Schedl 1962: 239–248.

Notes: (3) Eggers 1920: 24 (*ustulatus* Hagedorn, nomen nudum, synonymy).

References: (**ay**) Schedl, W. 1962: 368. (**bv**) Aulmann 1911, 1912: 41–42; Schedl 1960f: 39. (**ec**) Schedl 1958d: 192, 1962j: 235. (**hb**) Aulmann 1911; Beaver & Loyttyniemi 1985a: 73; Browne

1963a: 239–240; Loyttyniemi, Beaver, & Loyttyniemi 1984; Schedl 1958d: 192, 1962j: 235, 1977b: 150; Webb & Jones 1957: 25–42. (**ds**) Alluaud 1900: 440; Beaver & Loyttyniemi 1985a: 73; Browne 1963a: 239, 1975b: 395, 1980a: 373, 1980c: 485, 1981b: 597; Cachan 1957: 15, 42–43, 1958: 394; Cola 1971; Frappe 1933: 179; Gardner, J. C. M. 1957a: 32; Ghesquiere 1933a: 31–36, 1933b: 781; Hagedorn 1907a, 1910d: 98; Jones, Roberts, & Baker 1959: 13–55; Kleine 1912a: 212, 1913b: 160, 1914b: 326, 1928: 307; Mayne & Donis 1960: 39, 119, 1962: 315; Menier 1973a; Nunberg 1952: 20, 1965b: 20; Roberts 1960: 35–38, 1969: 59, 130; Schedl 1960f: 39, 119, 1962h: 60, 1962j: 235, 1964e: 69, 1965e: 353, 1965g: 20, 1966c: 226, 1967e: 215, 1968b: 144, 1970d: 233, 1971g: 192, 1972k: 295, 1977b: 150, 1977e: 283; Spahr 1981; Wichmann 1954: 521; Wood, S. L. 1957: 1273. (**tx**) Anderson, W. H. & Anderson 1971: 3; Aulmann 1911; Eggers 1920: 41, 1922a: 174, 1927a: 190, 1929e: 49, 1930a: 41, 124; Hagedorn 1905a: 413, 1907a: 261, 1907b: 111, 1910a: 152, 1912a: 341–343, 1913a: 255, 1913b: 19–21; Keler 1928: 29; Nunberg 1952: 20, 1962j: 235, 1978: 104; Powell, W. 1980: 29; Schaufuss 1897a: 210; Schedl 1935d: 95, 1939a: 468, 1941d: 403, 1950d: 15, 1950e: 211, 1952i: 7, 1952j: 3, 1953d: 69, 1953f: 242, 1954d: 872, 1954e: 51–71, 1955f: 259, 1957d: 15, 84, 1961e: 127, 1962j: 235–236, 1962k: 1098, 1964e: 64, 1965g: 20, 1971f: 151, 1977b: 150.

camerunus Hagedorn 1910b: 9. Syntypes ♀; Kamerun; MNB, Berlin. Synonymy: Schedl 1957d: 15.

Notes: (3) Eggers 1920: 124 (*ustulatus* Hagedorn, nomen nudum, synonymy).

References: (**cn**) Anonymous 1953h: 31, 1953j: 25; Aulmann 1913: 1–126; Chevalier 1931; Ghesquiere 1933a; Gowdey 1914: 36–58, 1918: 42–51; Green 1916: 608–636; Gregory 1954; Hagedorn 1913a; Kleine 1932a: 307. (**ec**) Anonymous 1953j: 25. (**hb**) Anonymous 1959i: 18; Hagedorn 1913a; Kleine 1932a: 307; Thompson, G. H. 1963: 71. (**ds**) Chevalier 1931; Gardner 1957a; Ghesquiere 1933a; Hagedorn 1910d: 99, 1913a; Kleine 1913b: 160, 1914b: 312, 1932a: 307; Mayne & Donis 1960: 104, 1962: 316; Roberts 1960b: 35, 1960e, 1960f; Thompson, G. H. 1960, 1963: 71; Wood, S. L. 1957e: 1273. (**tx**) Eggers 1920: 124, 1927a: 190, 1929e: 449; Hagedorn 1910a: 152, 1910b: 9, 1912a: 342–343, 1913b; Schedl 1950d: 15, 1950e: 211, 1952j: 3, 11–12, 1953g: 242, 1954d: 872, 1954e: 51, 1955f: 259, 1957d: 15, 1962j: 235.

camerunus rugosus Eggers 1920: 41. Holotype ♀; Soppo in Kamerun; MNB, Berlin.

References: (**tx**) Eggers 1920: 41.

***altilis* Schedl** 1966f: 115. Holotype ♀; Bolivien, Campo Grande, Dept. Cainguas, Misiones; ZSSM, Munchen.

Distribution: South America (Bolivia).

References: (**tx**) Schedl 1966f: 115, 1979c: 17.

***amanicus* Hagedorn** 1910b: 11. Holotype ♀; Amani, Deutsch-Ostafrika; Hamburg Museum, lost.

Figures: Nunberg 1963a:pl. 4, figs. 5–8, Schedl 1962j: 299.

Distribution: Africa (Burundi/ Cameroon/ Fernando Poo/ Ghana/ Kenya/ Tanzania/ Uganda/ Zaire).

Hosts: *Anthonota macrophyllum*, *Beilschmiedia louisii*, *Fagara* sp., *Ficus* sp., *Hypericum lanceolatum*, *Ibuga* sp., *Lovoa trichilioides*, *Radlkofera* sp.

Notes: (3) Schedl 1962j: 298 (*mkulumusius* Hagedorn, nomen nudum, synonymy).

References: (**hb**) Roberts 1969: 130; Schedl 1962j: 298. (**ds**) Hagedorn 1910d: 98; Kleine 1913b: 160, 1914b: 322; Schedl 1959p: 25, 1962j: 298, 1971e: 2, 1972e: 283; Spahr 1981. (**tx**) Browne 1970: 572; Eggers 1920: 124, 1923a: 179, 1927c: 101, 1932d: 299, 1940d: 142; Hagedorn 1910a: 152, 1910b: 11; Nunberg 1963a: 15, pl. 4, 1963b: 15; Schedl 1937b: 403, 1939a: 468, 1941d: 404, 1953g: 243, 1955b: 275–276, 1955f: 259, 1957d: 84, 1962j: 298–299, 1962k: 1098.

tanganjikaensis Schedl 1937b: 403. Lectotype ♀; N.W. Tanganjika-Sees; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 249. Synonymy: Schedl 1962j: 298.

References: (**ds**) Mayne & Donis 1962: 323; Schedl 1971g: 194. (**tx**) Schedl 1937b: 403, 1941d: 404, 1953g: 243, 1962j: 298, 1979c: 249.

amanicus ominosus Schedl 1962j: 301. Holotype ♀; Kamerun; Schedl Collection in NHMW, Wien.

Notes: (3) Apparently an aberration of *amanicus*, status doubtful.

References: (**tx**) Schedl 1962j: 301, 1965g: 20.

***ambasinotatus* Schedl** 1978c: 306. Holotype ♀; Ecuador, verst. O. des Andes, Santo Domingo, 600 m; Schedl Collection in NHMW, Wien.

Distribution: South America (Ecuador).

References: (**tx**) Schedl 1978c: 306.

***ambasipennis* Schedl** 1957d: 89. Holotype ♀; Congo Belge: Kivu, Hambe-Bitale, Kivu route Tshibinda-Bunyakiri, 1000 m, Yangambi; MRCB, Tervuren.

Figures: Nunberg 1963b:pl. 5, figs. 5–8, Schedl 1962j: 220.

Distribution: Africa (Zaire).

Hosts: *Brillantaisia* sp., *Carapa grandiflora*, *Entandrophragma excelsum*, *Ficus* sp., *Pachystela laurentii*, *Parinari holstii*, *Pentadesma lebrunii*, *Ritchiea apprevaliana*, *Turraeanthus africana*.

References: (**hb**) Schedl 1962j: 219. (**ds**) Mayne & Donis 1962: 315; Schedl 1962j: 219. (**tx**) Nunberg 1963b: 17, pl. 5; Schedl 1957d: 89, 1962j: 219–220, 1979c: 18.

***ambasiusculus* Eggers** 1920: 41. Lectotype ♀; Joh. Albrechtshohe and Soppo, Kamerun; Eggers Collection, in NHMW, Wien, designated by Schedl 1979c: 18.

Distribution: Africa (Cameroon/ Fernando Poo/ Gabon/ Ghana/ Ivory Coast/ Zaire).

Hosts: Many listed by Schedl 1962j: 224–226, Browne 1963a: 240. Also, *Macrolobium* sp.

References: (**cn**) Anonymous 1953j: 25; Cachan 1957: 15. (**ec**) Anonymous 1953j: 25; Schedl 1962j: 222. (**hb**) Browne 1963a: 240; Jones, Roberts, & Baker 1959: 13; Roberts 1969: 131; Schedl 1962j: 222; Webb & Jones 1957: 25–42. (**ds**) Browne 1963a: 240, 1980c: 486; Mayne & Donis 1960: 104, 1962: 315; Schedl 1961m: 84, 1962h: 60, 1964e: 69, 1971g: 192; Thompson, G. H. 1963: 70. (**tx**) Eggers 1920: 41–45; Schedl 1950e: 211, 1951f: 40, 1954d: 871, 1954e: 51, 1957d: 88, 1962j: 88, 222, 1979c: 18.

***amphicauda* Browne** 1986c: 666. Holotype ♀; New Guinea: Fak fak to Nagoya, Japan, imported; BMNH, London.

Distribution: New Guinea.

Hosts: *Hopea* sp. log.

References: (**tx**) Browne 1986c: 666.

***amphicranoides* Hagedorn** 1908: 379. Syntypes ♀; Sumatra, Si-Rambe and Mentawei-si-Oban (Modigliani); MNB, Berlin.

Figures: Nunberg 1978: 104.

Distribution: Asia (India/ Malaya), Indonesia (Borneo, Mentawei, Sumatra), Philippine Islands.

Hosts: *Artocarpus elasticus*, *A. kunstleri*, *A. scortechinii*, *Dipterocarpus* sp., *Parartocarpus* sp., *Shorea* sp.

References: (**cn**) Ishikura 1966. (**hb**) Browne 1936a, 1941, 1966. (**ds**) Beeson 1961: 302; Browne 1936a, 1961c: 154, 1980c: 484; Hagedorn 1910d: 98; Handlirsch 1925: 691; Ishikura 1966; Kleine 1913b: 160, 1914b: 286; Ohno et al. 1987: 87; Schedl 1936d: 2, 1961c: 70, 1971f: 148. (**tx**) Eggers 1922b, 1923a: 204, 1927c: 95–96; Hagedorn 1908: 379, 1910a: 152, 1910b; Nunberg 1959a: 414, 1978: 104; Schedl 1935b: 402–403, 1937e: 543, 1940: 440–441, 1942d: 42, 1951i: 44, 1954a: 140–141, 1954c: 159–160, 1979c: 19; Schroder 1925: 691.

amphicranoides var. *latecavatus* Eggers 1927c: 95. Syntypes ♀; Mount Banahao und Los Banos (Luzon), und Subaan (Mindoro); not given.

References: (**ds**) Schedl 1966b: 46. (**tx**) Eggers 1927c: 95.

amphicranoides parvior Browne 1981b: 601. Holotype ♀; Wasag (Philippines) to Nagoya (Japan), imported; BMNH, London.

References: (**ds**) Browne 1984c: 448, 1986a: 90. (**tx**) Browne 1981b: 601.

***amplexicauda* Hagedorn** 1910b: 9. Syntypes 2 ♀; Sumatra et Java; Hamburg Museum, lost.

Figures: Nobuchi 1978a:pl. 2.

Distribution: Asia (Malaya), Indonesia (Borneo, Java, Sumatra), Philippine Islands.

Hosts: *Balanocarpus heimii*, *Dryobalanops aromatica*, *Hopea* sp., *Shorea* spp.

Notes: (3) Browne 1974b: 538 (described male).

References: (**hb**) Browne 1941, 1961c: 154. (**ds**) Beaver & Browne 1978: 602; Browne 1961c: 154, 1981b: 599; Hagedorn 1910d: 98; Kleine 1913b: 160, 1914b: 286, 288; Nobuchi 1978a: 18; Schedl 1936d: 2, 1965g: 22, 1966b: 46, 1966g: 31, 1975a. (**tx**) Browne 1974b: 538; Hagedorn 1910b: 9; Nobuchi 1978a:pl. 2, 1983: 302; Schedl 1937e: 543, 1939e: 332, 1942a: 170, 1960i: 110, 1975a: 456, 1979c: 19.

borneensis Eggers 1927c: 97. Lectotype ♀; Borneo, je 1 Type on Sandakan un Sarawak; Eggers Collection, in NHMW, Wien, designated by Schedl 1979c:44. Synonymy: Schedl 1960h: 110.

References: (**tx**) Eggers 1927c: 97; Schedl 1960h: 110, 1979c: 44.

***analis* Schedl** 1973e: 89. Holotype ♀; Sydney, New South Wales; Schedl Collection in NHMW, Wien.

Distribution: Australia (New South Wales).

References: (**tx**) Schedl 1973e: 89, 1979c: 19.

***angolensis* Schedl** 1959p: 25. Holotype ♀; Angola: Dundo; MRCB, Tervuren.

Distribution: Africa (Angola).

References: (**ds**) Ferreira 1965: 1120; Schedl 1959p: 19, 25. (**tx**) Schedl 1959p: 25, 1962j: 301, 1979c: 20.

***angustior* Eggers** 1925: 158. Holotype ♀; Birma (Tenasserim); USNM, Washington.

Distribution: Asia (Burma).

References: (**tx**) Anderson, W. H. & Anderson 1971: 4; Beeson 1929: 239–240; Eggers 1925: 158.

***anisopterae* Browne** 1983a: 558. Holotype ♀; Tg. Usau (West Irian) to Nagoya (Japan), imported; BMNH, London.

Distribution: New Guinea.

Hosts: Mersawa log.

References: (**ds**) Browne 1986a: 94, 1986b: 333. (**tx**) Browne 1983a: 558, 1986a: 94.

***annectens* Schedl** 1957d: 88. Holotype ♂; Congo Belge: Kivu, route Tshibinda-Bunyakiri, Yangambi; MRCB, Tervuren.

Figures: Nunberg 1963b:pl. 6, figs. 1–8, Schedl 1962j: 227.

Distribution: Africa (Tanzania/ Zaire).

Hosts: *Albizzia gummifera*, *Hymenocardia ulmoides*, *Oxystigma oxyphyllum*, *Synsepalum subcordatum*, *Xylopia aethiopica*.

References: (**hb**) Schedl 1962j: 226. (**ds**) Browne 1975a: 759; Schedl 1962j: 226. (**tx**) Nunberg 1963b: 18–19, pl. 6; Schedl 1957d: 88, 1962j: 226–227, 1979c: 21.

***annexus* Schedl** 1973e: 89. Holotype ♀; Papuan Highlands, Central District, New Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1973e: 89, 1979c: 21.

***antaisaka* Schedl** 1953d: 100. Lectotype ♀; Madagascar, Mt. d'Ambre; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 22.
Figures: Schedl 1953d: 100 (female), 1977b: 156.
Distribution: Africa (South Africa), Madagascar.
Hosts: *Eucalyptus maculata*, *E. paniculata*, *E. robusta*, *Chrysophyllum boivinianum*, *Dalbergia pterocarpifolia*, *Eleocarpus* sp., *Eugenia* sp., *Homalium planiflorum*, *Pinus khasia*, *Trema orientalis*.
References: (**cn**) Anonymous 1970c: 14. (**ec**) Schedl 1977b: 156. (**hb**) Schedl 1977b: 156. (**ds**) Anonymous 1970c: 14; Schedl 1962j: 271, 1969d: 6, 1970d: 233, 1977b: 156. (**tx**) Schedl 1953d: 100, 1965c: 71, 1977b: 156, 1979c: 22.

***antanala* Schedl** 1953d: 98. Lectotype ♀; Madagascar, Mt. d'Ambre; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 22.
Figures: Schedl 1953d: 100 (female), 1977b: 126.
Distribution: Madagascar.
Hosts: *Eugenia* sp.
References: (**hb**) Schedl 1977b: 127. (**ds**) Schedl 1977b: 127. (**tx**) Schedl 1953d: 98, 1961e: 143, 1977b: 126–127, 1979c: 22.
boeni Schedl 1953d: 99. Lectotype ♀; Madagascar, Mt. Ambre; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 42. Synonymy: Schedl 1979c: 42.
References: (**tx**) Schedl 1953d: 99, 1961e: 143, 1979c: 42.

***apertus* Schedl** 1939e: 355. Lectotype ♀; North Borneo: Koung, near Mt. Kinabalu, 1300 feet, and Malaya: Perak, Trolak For. Res.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 22.
Distribution: Asia (Malaya), Indonesia (Borneo), Fiji Islands, New Guinea.
Hosts: *Agathis dammara*, *Artocarpus elasticus*, *A.* sp., *Balanocarpus heimii*, *Dyera costulata*, *Eugenia* sp., *Koompassia malaccensis*, *Palaquium* sp., *Paratocarpus* sp., *Pentaspadon* sp., *Shorea leprosula*, *S. uliginosa*.
Notes: (3) Browne 1955: 355 (described male). This is apparently a synonym of *perforans* (DEB).
References: (**cn**) Mathur & Singh 1961a: 40; Yunus & Hua 1980: 230. (**hb**) Browne 1961c: 143. (**ds**) Beeson 1961: 302; Browne 1961c: 143; Mathur & Singh 1961a: 40; Schedl 1959c: 168; Yunus & Hua 1980: 230. (**tx**) Browne 1955: 355; Schedl 1939e: 355, 1955b: 281, 285, 1979c: 22.

***apiculatus* Schedl** 1942a: 190. Holotype ♀; Malaya, Kepong; BMNH, London.
Distribution: Asia (Malaya).
Hosts: *Dipterocarpus baudii*.
References: (**ds**) Browne 1961c: 113. (**tx**) Schedl 1942a: 190.

***aplanatideclivis* Schedl** 1942c: 191. Lectotype ♀; Fiji Is., Javerni; Schedl Collection in NHMW, Wien.
Distribution: Fiji Islands.
Hosts: *Persea americana*.
References: (**cn**) Ebeling 1959; Lever 1940a: 38–42. (**ds**) Browne 1974a: 65; Ebeling 1959. (**tx**) Schedl 1942c: 191, 1950f: 40, 1955b: 308, 1979c: 23.

***approximatus* Schedl** 1951i: 77. Syntypes 2 ♀; Java, Batoerraden, G. Slamet, and Malaya Peninsula, Selangor, Kepong; Schedl Collection in NHMW, Wien.
Figures: Nunberg 1978: 106.
Distribution: Asia (Malaya), Indonesia (Java), New Guinea.
Hosts: *Dryobalanops oblongifolia*, *Rhodamnia trinervia*, *Shorea leprosula*, *S. macroptera*, *Swietenia macrophylla*, *Vitex pubescens*..
References: (**bv**) Gray, B. 1975c. (**ec**) Banerjee 1983. (**hb**) Browne 1961c: 113; Gray, B. 1974c. (**ds**) Browne 1961c: 113, 1984a: 150. (**tx**) Nunberg 1978: 106–107; Schedl 1939e: 351, 1951i: 77, 1953c: 290, 1964c: 298, 1979c: 23.
potens Schedl 1964c: 298. Holotype ♀; New Guinea: Star Range, 1260 m; RNH, Leiden. Synonymy: Wood 1989: 176.
References: (**tx**) Schedl 1964c: 298; Wood, S. L. 1989: 176.

***aquilus* Blandford** 1894d: 109. Syntypes 6 ♀; Japan: Oyayama and Hitoyosi in Kiushiu, and near Kashiwagi; BMNH, London.
Distribution: Asia (Fujian, Hunan in China/ Japan/ Korea/ Taiwan).
Hosts: *Abies* sp., *Acer rufinerve*, *Cercidiphyllum japonicum*, *Chamaecyparis obtusa*, *Cleyera japonica*, *Cryptomeria japonica*, *Machilus* sp., *Mallotus japonicus*, *Pinus densiflora*, *P. massoniana*, *Quercus mongolica grosseserrata*, *Styrax japonicus*.
References: (**cn**) Murayama 1954a: 10; Shiraki 1952. (**ds**) Blandford 1894c; Cho 1957; Choo 1983: 104; Choo & Woo 1985: 166; Hagedorn 1910d: 99; Kleine 1913b: 160, 1914b: 260, 1934a: 172; Ko 1969: 284; Murayama 1930b: 20, 1936a: 130, 1937b: 375, 1948: 2, 143, 1949a: 13, 1949c: 102, 1950b: 1295, 1951c: 5, 1954a: 10, 1954b: 175, 1955: 99, 104; Nobuchi 1966d: 28, 1967: 21, 1985c: 23; Shiraki 1952; Yin, Huang, & Li 1984: 165. (**tx**) Blandford 1894d: 109; Choo 1983: 104; Hagedorn 1910a: 152; Murayama 1930b: 20–31, 1936a: 130, 1937b: 375, 1950b: 1295, 1954b: 175, 1955: 99, 104; Niisima 1910a: 13; Nobuchi 1966d: 28; Schedl 1934f: 1645; Yin, Huang, & Li 1984: 165.

***arcturus* Samuelson** 1981: 69. Holotype ♀; Hawaii: S. Kona; BPBM, Honolulu.
Figures: Samuelson 1981: 60.
Distribution: Hawaiian Islands (Hawaii).

References: (**tx**) Samuelson 1981: 60.

***aries* Schedl** 1969b: 215. Holotype ♀; Awande, Eastern District Highlands, New Guinea; CSIRO, Canberra.
Distribution: New Guinea.
References: (**tx**) Schedl 1969b: 215–216, 1979c: 25.

***armiger* Schedl** 1953e: 28. Lectotype ♀; Fukien, Kuatun; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 26.
Figures: Nunberg 1959a:pl. 16, figs. 1–2.
Distribution: Asia (Fujian, Yunnan in China).
Hosts: *Castanopsis* sp., *Lithocarpus* sp.
References: (**ds**) Yin, Huang, & Li 1984: 156. (**tx**) Nunberg 1959a: 414; Schedl 1953e: 28, 1955b: 306, 1955h: 45, 1979c: 26; Yin, Huang, & Li 1984: 156.

***armillatus* Schedl** 1933d: 199. Holotype ♀; Pangil, Laguna Prov., Luzon; Schedl Collection (1979c: 26) in NHMW, Wien.
Distribution: Philippine Islands (Luzon).
References: (**ds**) Schedl 1966b: 46. (**tx**) Nobuchi 1983: 302; Schedl 1933d: 199, 1979c: 26.

***armipennis* Schedl** 1953e: 27. Lectotype ♀; Fukien, Kuatun; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 26.
Distribution: Asia (Fujian, Yunnan in China).
Hosts: *Castanopsis* spp., *Lithocarpus* sp., *Quercus* sp.
References: (**ds**) Yin, Huang, & Li 1984: 156. (**tx**) Schedl 1953e: 27, 1955h: 45, 1979c: 26; Yin, Huang, & Li 1984: 156.

***artecylindrus* Schedl** 1942a: 197. Lectotype ♀; Malaya, Perak, Trolak F.R.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 27.
Distribution: Asia (Malaya).
Hosts: *Cinnamomum* sp.
Notes: (3) Schedl 1960h: 110 (cited this as a synonym of *pseudocylindricus*).
References: (**tx**) Schedl 1942a: 197, 1950g: 895, 1960h: 110, 1979c: 26–27.

***ashuensis* Murayama** 1954b: 193. Holotype ♀; Ashu, Kyoto pref.; Murayama Collection in USNM, Washington.
Distribution: Asia (Japan).
Hosts: *Castanea crenata*.
References: (**ds**) Murayama 1954b: 193; Nobuchi 1985c: 23. (**tx**) Murayama 1954b: 193.

***asper* Eggers** 1933b: 30. Holotype ♀; Franz. Guayana (Nouveau Chantier); MNHN, Paris.
Distribution: North America (Costa Rica/ Panama), South America (Brazil/ Cayenne/ Colombia/ Venezuela).
Hosts: *Couma macrocarpa*, *Pithacellobium pinnatum*, *Theobroma cacao*, *Toulicia pulvinata*, *Virola warburgii*.
References: (**hb**) Wood, S. L. 1982b: 812. (**ds**) Blackwelder 1947: 779; Schedl 1960a: 78; Wood, S. L. 1982b: 812. (**tx**) Eggers 1933b: 30; Wood, S. L. 1972e: 196, 1982b: 812.

***amoenus* Schedl** 1948f: 282. Holotype ♀; Costa Rica, Hamburgfarm, Reventazon, Ebene Limon; Schedl Collection in NHMW, Wien.
Synonymy: Wood 1972e: 196.
References: (**ds**) Schedl 1973d: 157. (**tx**) Schedl 1948f: 282, 1979c: 18; Wood, S. L. 1972e: 196.

***asperipunctatus* Eggers** 1933b: 35. Holotype ♀; Franz. Guayana (Riviere Lumier, Tumuc Humac); MNHN, Paris.
Distribution: South America (Cayenne).
References: (**ds**) Blackwelder 1947: 779. (**tx**) Eggers 1933b: 35, 1934b: 27.

***asperrimus* Schedl** 1975a: 457. Holotype ♀; Borneo: Sarawak; Schedl Collection in NHMW, Wien.
Distribution: Indonesia (Borneo).
References: (**tx**) Schedl 1975a: 457, 1979c: 28.

***assimilis* Eggers** 1927b: 405. Syntypes 3 ♀; Sumatra (Mt. Singalang und Si Rambe); MCG, Genova and Eggers Collection (USNM, Washington or NHMW, Wien?).
Distribution: Indonesia (Sumatra).
References: (**tx**) Eggers 1927b: 405; Schedl 1934d: 89–90, 1955b: 305.

***associatus* Schedl** 1976a: 73. Holotype ♀; Brasilien; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1976a: 73.

***astutus* Schedl** 1954a: 154. Holotype ♀; Java; Schedl Collection in NHMW, Wien.
Distribution: Indonesia (Java).
References: (**tx**) Schedl 1954a: 154, 1979c: 29.

***atratus* Eichhoff** 1875: 201. Holotype ♀; Japan; Hamburg Museum, lost.
Figures: Nakane et al. 1963: 384, Nobuchi 1966d: pl. 4, Nunberg 1978: 108.
Distribution: Asia (Burma/ Fujian in China/ Japan/ Korea/ Malaya/ Taiwan/ Vietnam), Indonesia (Borneo, Java, Sumatra), New Guinea, North America (introduced: Florida, Georgia, Maryland, Tennessee, Virginia, West Virginia), Philippine Islands.
Hosts: Many hosts listed in Choo 1983: 105. *Alnus hirsuta*, *A. japonica*, *Betula schmidtii*, *Morus* spp., *Pinus* spp., *Ulmus japonica*.
References: (**ay**) Murayama 1933a: 2. (**bv**) Choo, Woo, & Park 1988. (**cn**) Anonymous 1980g; Clausen 1931; Murayama 1954a: 11; Shiraki 1952. (**ec**) Banno, Mikata, & Kodama 1983: 445; Yoon et al. 1982. (**hb**) Yoon et al. 1982. (**ds**) Anonymous 1980g; Atkinson, Rabaglia, & Bright 1990: 94; Atkinson et al. 1991: 160; Cho 1957; Choo 1983: 104; Choo & Woo 1985: 166; Choo, Woo, & Park 1983: 176, 1988; Clausen 1931; Hagedorn 1910d: 99; Hill, D. S. 1987: 341; Kleine 1913b: 160, 1914b: 260, 1934a; Ko 1969: 284; Ku, K. 1964; Murayama 1930b: 20, 1933b: 2, 1934d: 507, 1936a: 130, 1936b: 116, 1937b: 374, 1950d: 1295, 1951a: 6, 1954a: 11, 1954b: 175, 1955: 99; Nakane et al.

1963: 384; Nobuchi 1966d: 28, 1967: 21; Schedl 1960e: 172; Shiraki 1952; Yin, Huang, & Li 1984: 172. (**tx**) Atkinson, Rabaglia, & Bright 1990: 94; Blandford 1894d; Choo 1983: 104; Eggers 1930d: 178, 1941b: 222; Eichhoff 1875: 201–202, 1877a: 120, 1878b: 324; Hagedorn 1910a: 152; Murayama 1930b: 20–24, 31, 1933a: 31–34, 1933b: 14–16, 1934c: 299, 1934d: 505–512, 1936a: 130–131, 1937b: 374, 1950b: 1295, 1954b: 175 1955: 99; Nakane et al. 1963: 384; Niisima 1909: 157; Nobuchi 1966d: 28, pl. 4; Nunberg 1978: 108–109; Schedl 1934f: 1645, 1955h: 45; Strohmeyer 1911: 32; Yin, Huang, & Li 1984: 172. (**ms**) Matsumura 1931.

***aurilegulus* Schaufuss** 1897b: 112. Holotype ♀; Amazonas: Bragance (Oberthur); Hamburg Museum, lost.
Distribution: South America (Brazil).
References: (**ds**) Blackwelder 1947: 779; Hagedorn 1910d: 99; Kleine 1913b: 160, 1914b: 337. (**tx**) Eggers 1931a: 21, 1933b: 29; Hagedorn 1910a: 152; Schaufuss 1897b: 112.

***australis* Schedl** 1980b: 185. Holotype ♀; Queensland, Rocky Scrob [Australia]; Schedl Collection in NHMW, Wien.
Distribution: Australia (Queensland).
References: (**tx**) Schedl 1980b: 185.

***baculum* Beeson** 1929: 247. Holotype ♀; Upolu: Malololelei, 2000 ft.; BMNH, London.
Distribution: Samoan Islands.
References: (**ds**) Beeson 1938b: 291. (**tx**) Beeson 1929: 247; Schedl 1951k: 139.

***balbalanus* Eggers** 1927c: 95. Holotype ♀; Philippinen: Luzon, Provinz Mountain, Balbalan; Eggers Collection, in NHMW, Wien.
Distribution: Philippine Islands (Luzon).
References: (**ds**) Schedl 1966b: 47. (**tx**) Eggers 1927c: 95; Nobuchi 1983: 302; Schedl 1979c: 32.

***bambesanus* Eggers** 1940c: 238. Holotype ♀; Congostaat: Bambesa; MRCB, Tervuren.
Figures: Nunberg 1963b:pl. 7, figs. 6–7.
Distribution: Africa (Zaire).
References: (**ds**) Nunberg 1961a: 330; Schedl 1962k: 1099. (**tx**) Eggers 1940c: 238; Nunberg 1963b: 21, pl. 7; Schedl 1962j: 330, 1962k: 1099.

***barbatoides* Schedl** 1971c: 377. Holotype ♀; Malaya, Kelantan, Pahi; BMNH, London.
Distribution: Asia (Malaya).
References: (**tx**) Schedl 1971c: 377–378.

***barumbuensis* Eggers** 1924: 109. Lectotype ♀; Barumbu im Congogebiet; Eggers Collection, in NHMW, Wien, designated by Schedl 1979c: 35.
Distribution: Africa (Ghana/ Nigeria/ South Africa/ Zaire), Madagascar.
Hosts: *Cola nitida*, *Ficus* sp., *Leptonychia bantangensis*, *Piptadeniastrum africanum*, *Sterculia rhinopetala*, *Theobroma cacao*.
References: (**cn**) Chevalier 1931; Ghesquiere 1933a: 31–36, 74, 1933b: 781–786; Kemner 1924: 1–33. (**hb**) Schedl 1962j: 286. (**ds**) Chevalier 1931; Ghesquiere 1933a: 31–36, 74; Roberts 1969: 131; Schedl 1962j: 286; Wichmann 1954: 521. (**tx**) Eggers 1924: 109; Schedl 1950d: 31, 1953d: 70, 1957e: 882, 1962j: 286, 1964k: 313, 1965c: 74, 1977b: 195, 1979c: 35.

robertsi Browne 1963b: 247. Holotype ♀; Nigeria: Abuja, Doma For. Res.; BMNH, London.
Synonymy: Schedl 1964k: 313.
References: (**tx**) Browne 1963b: 247; Schedl 1964k: 313.

barumbuensis mendosus Schedl 1965c: 74. Holotype ♀; Madagascar, Montagne d'Ambre; Schedl Collection in NHMW, Wien.
References: (**tx**) Schedl 1965c: 74, 1977b: 196, 1979c: 35.

***basalis* Schedl** 1972e: 292. Holotype ♀; Ghana, Ashanti Region, Kumasi, Nhissu, 320 m, N 6 43, W 1 36; NHMB, Budapest.
Distribution: Africa (Ghana).
References: (**tx**) Schedl 1972e: 292.

***batoensis* Eggers** 1923a: 178. Holotype ♀; Batoe Inseln (Tanah Masa); Coll. "Natura Artis Magistra" in Amsterdam.
Distribution: Indonesia (Batu Island).
References: (**tx**) Eggers 1923a: 178, 1927c: 101; Schedl 1935f: 270.

***beckeri* Bright** 1972d: 84. Holotype ♀; Hardwar Gap, 4000 feet, St. Andrew Parish, Jamaica; CNCI, Ottawa.
Figures: Bright 1972d: 75, 95.
Distribution: Antilles Islands (Jamaica).
References: (**ds**) Bright 1985c: 173. (**tx**) Bright 1972d: 75, 84, 95, 1985c: 173; McNamara 1977: 200.

***betsileo* Schedl** 1965c: 74. Holotype ♀; Madagascar, Montagne d'Ambre; Schedl Collection in NHMW, Wien.
Distribution: Madagascar.
References: (**tx**) Schedl 1965c: 74, 77, 1977b: 196, 1979c: 37.

***bezanozano* Schedl** 1961e: 152. Holotype ♀; Madagascar, Perinet; IRSM, Madagascar.
Distribution: Madagascar.
Hosts: *Alchornea* sp., *Vernonia* sp.
References: (**hb**) Schedl 1977b: 165. (**ds**) Schedl 1977b: 165. (**tx**) Schedl 1961e: 152, 1977b: 165, 1979c: 37.

***biconicus* Eggers** 1928c: 97. Holotype ♀; Brazil; USNM, Washington.
Figures: Pedrosa-Macedo & Schonherr 1985: 25.
Distribution: South America (Argentina/ Brazil/ Paraguay).
Hosts: *Guettarda* sp., *Mangifera indica*.
References: (**cn**) Mumford 1961: 38; Silva, Cayao, & Castro 1959: 1. (**hb**) Viana 1964: 123. (**ds**) Blackwelder 1947: 779; Mumford 1961: 38; Nun-

berg 1958a: 481, 1961: 224, 1964a: 236; Pedrosa-Macedo & Schonherr 1985: 25; Schedl 1960a: 79, 1966f: 87, 1967d: 2, 1970e: 88, 1973d: 157, 1976a: 53; Viana 1964: 123. (**tx**) Anderson, W. H. & Anderson 1971: 6; Eggers 1928c: 97; Nunberg 1958a: 481, 1959a: 415–416, 1964: 236; Pedrosa-Macedo & Schonherr 1985: 25; Schedl 1951h: 285–286, 1952a: 445–446, 1958f: 35.

bicinctus Schedl 1972g: 69. Holotype ♀; Brazil, Jacareacanga, Para; Schedl Collection in NHMW, Wien, preoccupied by Schedl 1965. Synonymy: Wood 1989: 176.

References: (**ds**) Schedl 1976a: 53. (**tx**) Schedl 1972g: 69, 1974f: 338, 1977b: 212, 1979c: 37; Wood, S. L. 1989: 176.

bicinctulus Schedl 1974f: 338. Holotype ♀; Brazil, Jacareacanga, Para; Schedl Collection in NHMW, Wien, automatic. Synonymy: Wood 1989: 176.

References: (**tx**) Schedl 1974f: 338; Wood, S. L. 1989: 176.

***bidentatus* (Motschulsky)** 1863: 514 (*Phloeotrogus*). Holotype ♀; published as Du continent indien, type labeled India Occidentale; IZM, Moscow.

Figures: Kumar & Chandra 1977: 40, Nobuchi 1978a:pl. 2, Nunberg 1959a:pl. 27, figs. 1–4, Wood 1960a: 53.

Distribution: Africa (Kenya/ Mozambique/ Tanzania), Asia (Burma/ Andaman Islands in India/ Malaya/ Thailand/ Vietnam), Australia, Bismarck Islands, Indonesia (Borneo, Celebes, Java, Sumatra), Madagascar, Micronesia (Palau Islands), New Guinea, Philippine Islands.

Hosts: *Afzelia bijuga*, *Agathis* sp., *Anisoptera* sp., *Avicennia* sp., *Canarium euphyllum*, *Carapa* sp., *Dipterocarpus turbinatus*, *Excaecaria agallocha*, *Garcinia merguensis*, *Intsia bijuga*, *Mimusops littoralis*, *Pterocarpus dalbergioides*, *Rhizophora mucronata*, *Shorea acuminata*, *Sonneiatia apelata*, *Stephegyne diversifolia*, *Terminalia bialata*, *Xylocarpus gangeticus*, *X. granatum*.

Notes: (3) Kumar & Chandra 1977: 32 (described male).

References: (**cn**) Gray, B. & Wylie 1974. (**ec**) Beeson 1922c. (**hb**) Beeson 1922c; Gray, B. 1968: 311; Gray, B. & Wylie 1974; Schedl 1962j: 282. (**ds**) Beeson 1915: 8–11, 1922c: 497, 1930: 228, 1941: 392–393, 1961: 303; Bhasin, Roonwal, & Singh 1958: 68; Browne 1935a: 4, 1941: 60, 68, 1961a: 305, 1966: 251; Chadwick & Nikitin 1968; Corbett & Gater 1926: 22; Gemminger & Harold 1872: 2692; Gray, B. 1968: 311; Hagedorn 1910d: 99; Kalshoven 1959: 162; Kleine 1913b: 168, 1914b: 270, 1934a: 172; Nobuchi 1978a: 26; Ohno, Yoneyama, & Nakazawa 1982a: 4, 1982b: 8, 1987a: 88, 1987b: 94; Ohno, Yoshioka, Yoneyama, & Nakazawa 1988a: 93; Ohno, Yoshioka, Uchida, Yoneyama, & Tsukamoto 1989: 61; Roonwal 1954: 40; Schedl 1936d: 4, 1937f: 1, 1942d: 6, 1950g: 897, 1955b: 278, 1958i: 215, 1962i: 72, 1962k: 282, 1964c: 306, 1964i: 248, 1965e: 353, 1965g: 25, 1966b: 48, 1966g: 31, 1968e: 263, 1969d: 4, 1971f: 148, 1972a: 144, 1977a: 164; Wood, S. L. 1960a: 51–55. (**tx**) Beeson 1930: 228; Blandford 1896a: 21; Eggers 1922b: 174, 1923a: 130, 1925: 153, 1927a: 199, 1930d: 191; Eichhoff 1878b: 505–506; Hagedorn 1905: 414, 1910a: 152, 155, 1910b: 9–11; Kumar & Chandra 1977: 32, 40; Motschulsky 1863: 514; Nobuchi 1978a:pl. 2, 1983: 302; Schaufuss 1905: 72 (reprint p. 3); Schedl 1935j: 1, 1952k: 162, 1953d: 70, 1960h: 107, 1962j: 282–283, 1977b: 164; Wood, S. L. 1960a: 51, 53, 1969c: 119.

riehli Eichhoff 1878b: 346. Holotype ♀; Celebes Insula Asiatica; IRSNB, Brussels. Synonymy: Schedl 1962j: 282.

Notes: (3) Eggers 1930d: 190 (described male).

References: (**cn**) Beeson 1916: 1–5; Ishikura 1966; Mathur & Singh 1961a: 61; Roonwal 1954: 40. (**hb**) Browne 1935a, 1941, 1961c: 139; Kalshoven 1959c: 162. (**ds**) Beeson 1919: 1–23, 1930, 1961: 308; Browne 1935a, 1961c: 139–140; Hagedorn 1910d: 110; Ishikura 1966; Kalshoven 1959c: 162; Kleine 1913b: 162, 1914b: 295, 1934a: 175; Mathur & Singh 1961a: 61; Roonwal 1954: 40; Schedl 1936d: 4, 1937f: 15, 1962i: 72. (**tx**) Beeson 1930: 77, 253; Eggers 1927a: 199, 1927b: 399, 1930d: 190–191; Eichhoff 1878b: 346; Hagedorn 1910a: 156, 1910b; Nunberg 1959a: 436; Schedl 1942d: 6, 1950g: 897, 1955b: 278, 1960h: 107, 1962j: 282.

laeviusculus Blandford 1896a: 21. Holotype ♀; Indo-China: Mytho; BMNH, London. Synonymy: Schedl 1960i: 108.

References: (**cn**) Beeson 1915: 8–11; Stebbing 1914: 603. (**ec**) Beeson 1922c: 498; Stebbing 1914: 603. (**hb**) Beeson 1922c: 498; Stebbing 1914: 602–603. (**ds**) Beeson 1922c: 498; Hagedorn 1910d: 106; Kleine 1913b: 168, 1914b. (**tx**) Blandford 1896a: 21; Hagedorn 1910a: 155, 1910b; Schedl 1950g: 897, 1958i: 215, 1960i: 108, 1962j: 282; Stebbing 1914: 603.

stephegynis Hopkins 1915b: 58 (*Boroxylon*). Holotype ♀; Calapan, Philippine Islands; USNM, Washington. Synonymy: Wood 1960a: 54.

References: (**ds**) Kleine 1934a: 178. (**tx**) Hopkins 1915b: 58–59; Schedl 1952k: 162, 1962j: 282; Wood, S. L. 1960a: 54.

brevidentatus Eggers 1930d: 190. Holotype ♀; Andamanen Inseln; FRI, Dehra Dun. Synonymy: Schedl 1960i: 107.

References: (**cn**) Mathur & Singh 1961b: 28. (**ds**) Beeson 1930, 1961: 303; Kleine 1934a: 172; Mathur & Singh 1961b: 28. (**tx**) Beeson 1930: 228; Eggers 1930d: 190; Schedl 1960i: 107, 1962j: 282, 1979c: 46.

quadridens Eggers 1930d: 191. Holotype ♀; Borneo; FRI, Dehra Dun. Synonymy: Wood 1989: 176.

References: (**tx**) Eggers 1930d: 191; Schedl 1962j: 559; Wood, S. L. 1989: 176.

***birmanus* Eggers** 1930d: 200. Holotype ♀; Burma (North Pegu Division); FRI, Dehra Dun.
Distribution: Asia (Burma/ Malaya/ Thailand).
Hosts: *Dolichandrone stipulata*, *Intsia palembanica*, *Xylia dolabriformis*.
References: (**cn**) Mathur & Singh 1961b: 96. (**hb**) Beaver & Browne 1975: 298; Browne 1961c: 154. (**ds**) Beaver & Browne 1975: 298; Beeson 1930: 228 (reprint p. 52), 1961: 303; Browne 1961c: 154–155; Mathur & Singh 1961b: 96. (**tx**) Eggers 1930d: 200 (reprint p. 24); Schedl 1958b: 100, 1979c: 40.

***bispinus* Nobuchi** 1981b: 147. Holotype ♀; Kumano, Takimoto, Wakayma; Nobuchi Collection, Ibaraki.
Figures: Nobuchi 1981b: 153.
Distribution: Asia (Honshu in Japan).
Hosts: *Castanopsis cuspidata*.
References: (**ec**) Kielczewski & Wisniewski 1983. (**tx**) Nobuchi 1981b: 147, 153.

***biuncus* Browne** 1984d: 96. Holotype ♀; New Guinea: Stony L. A.; BMNH, London.
Distribution: New Guinea.
Hosts: *Protium* sp.
References: (**tx**) Browne 1984d: 96.

***blandus* Schedl** 1954c: 160. Lectotype ♀; Borneo; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 42.
Distribution: Indonesia (Borneo).
References: (**tx**) Schedl 1954c: 160, 1979c: 42.

***bodoanus* Reitter** 1913a: 82. Syntypes 3 ♀; Ostsibirien: Sotka-gora; NHMB, Budapest.
Distribution: Asia (E USSR).
References: (**hb**) Stark 1952: 436. (**ds**) Stark 1952: 436. (**tx**) Eggers 1923a: 202; Reitter 1913a: 82; Schedl 1934f: 1645; Stark 1952: 436.

***bolivianus* Eggers** 1943a: 385. Holotype ♀; Bolivia; USNM, Washington.
Distribution: South America (Bolivia).
References: (**tx**) Anderson, W. H. & Anderson 1971: 7; Eggers 1943a: 385.

***borneensis* Browne** 1986a: 92. Holotype ♀; Borneo: Bintulu (Sarawak) to Nagoya, Japan, imported; BMNH, London.
Distribution: Indonesia (Borneo).
Hosts: *Dipterocarpus* sp. log.
References: (**tx**) Browne 1986a: 92.

***brevicollis* Browne** 1984d: 97. Holotype ♀; New Guinea: Gumi; BMNH, London.
Distribution: New Guinea.
Hosts: *Castanopsis* sp.
References: (**tx**) Browne 1984d: 97.

***brunneus* Browne** 1981b: 601. Holotype ♀; Tatau (Sarawak, Borneo) to Nagoya (Japan), imported; BMNH, London.
Distribution: Indonesia (Sarawak in Borneo).
References: (**tx**) Browne 1981b: 601.

***bryanti* Sampson** 1919: 110. Holotype ♀; Borneo, Sarawak (Mt. Matang); BMNH, London.
Distribution: Indonesia (Sarawak in Borneo).
References: (**ds**) Sampson 1919: 110. (**tx**) Sampson 1919: 110.

***buxtoni* Beeson** 1929: 243. Holotype ♀; Samoa, Upolu: Malololelei, 2000 ft.; BMNH, London.
Figures: Wood 1960a: 65.
Distribution: Cook Islands, Micronesia (Caroline Islands, Palau Islands), Samoan Islands.
References: (**ds**) Beeson 1938b: 191; Schedl 1972b: 267; Wood, S. L. 1960a: 51. (**tx**) Beaver & Maddison 1990: 1373; Beeson 1929: 243; Schedl 1951k: 139; Wood, S. L. 1960a: 51, 65.

***cachoeirinhae* Schedl** 1951m: 125. Syntypes ♂?; Brasilien, Bahia, Cachoeirinha-Una; Schedl Collection in NHMW, Wien (Schedl 1979c: 49).
Distribution: South America (Brazil).
Notes: (1) Schedl 1979c: 49 (citation of holotype invalid). (3) Schedl 1951m: 125 (may be male of *majusculus*).
References: (**tx**) Schedl 1951m: 125, 1979c: 49.

***cacuminatus* Eggers** 1928c: 98. Holotype ♀; Brasil (Amazonas-Gebiet); Hamburg Museum, lost? (see note 1).
Distribution: South America (Brazil).
Notes: (1) Schedl 1979c: 49 (holotype in Schedl Collection in NHMW, Wien; if this is the holotype, it must have been on loan to Eggers when Schedl obtained it).
References: (**ds**) Blackwelder 1947: 779. (**tx**) Eggers 1928c: 98, 1933b: 33; Schedl 1979c: 49.

***californicus* Wood** 1975b: 399. Holotype ♀; Stanford University, Palo Alto, California [USA]; CAS, San Francisco.
Distribution: North America (California, Oregon in USA).
Notes: (3) This is an obvious importation; its origin is unknown.
References: (**ds**) Wood, S. L. 1982b: 838. (**tx**) McNamara 1984: 759; Wood, S. L. 1975b: 399, 1982b: 838.

***calvus* Schedl** 1942a: 187. Holotype ♀; Borneo; Schedl Collection in NHMW, Wien.
Distribution: Indonesia (Borneo).
References: (**tx**) Schedl 1942a: 187, 1979c: 50.

***canarii* Browne** 1984a: 155. Holotype ♀; Pomio (New Britain) to Nagoya (Japan), imported; BMNH, London.
Distribution: New Guinea.
Hosts: *Canarium* sp.
References: (**ds**) Ohno et al. 1988a: 93, 1989: 61. (**tx**) Browne 1984a: 155.

***canarivorus* Browne** 1896a: 96. Holotype ♀; New Guinea: Fak fak to Nagoya, Japan, imported; BMNH, London.
Distribution: New Guinea.

Hosts: *Canarium* sp. log.
References: (**tx**) Browne 1986a: 96.

***cancellatus* Eggers** 1936c: 89. Holotype ♀; Java (Batoerraden, G. Slamet); ZMA, Amsterdam.
Figures: Nunberg 1959a:pl. 17, figs. 1–3.
Distribution: Indonesia (Java).
Hosts: *Castanea argentea*, *Neesia altissima*, *Plectronia* sp., *Symplocos* sp., *Turpinia pomifera*.
References: (**ec**) Kalshoven 1960b. (**hb**) Kalshoven 1959c: 147, 1960a: 120. (**ds**) Kalshoven 1959c: 147; Schedl 1965g: 24. (**tx**) Eggers 1936e: 89; Nunberg 1959a: 417; Schedl 1942d: 6, 1951i: 43, 1954a: 140, 1954c: 155, 1958k: 145, 1965g: 24, 1979c: 51.
cancellatus pronunciatus Eggers 1936e: 90. Holotype ♀; Java: "G. Tangkoebon Frahoe," 4000–5000 Fuss, Preanger; ZMA, Amsterdam.
Notes: (1) Schedl 1979c: 51 (lectotype designation invalid because a type had previously been designated).
References: (**tx**) Eggers 1936e: 90–91; Schedl 1958k: 145, 1979c: 51.

***canus* Niisima** 1909: 161. Holotype ♀; Sapporo, Hokkaido, Japan; Nobuchi Collection, Ibaraki.
Distribution: Asia (Japan).
References: (**cn**) Anonymous 1980g; Murayama 1954a: 19. (**ds**) Anonymous 1980g; Kleine 1913b: 160, 1914b: 261; Murayama 1954a: 19; Nobuchi 1985c: 24. (**tx**) Hagedorn 1910a: 152; Murayama 1930: 25, 31; Niisima 1909: 161; Schedl 1934f: 1646.

***caraibicus* Eggers** 1941a: 103. Holotype ♀; Guadeloupe; USNM, Washington.
Figures: Nunberg 1959a:pl. 17, figs. 4–6.
Distribution:Antilles Islands (Dominica/ Guadeloupe/ Trinidad), North America (Costa Rica/ Panama), South America (Bolivia/ Brazil/ Colombia/ Venezuela).
Hosts: *Ochroma* sp., *Theobroma cacao*.
References: (**hb**) Wood, S. L. 1982b: 813. (**ds**) Bright 1981c: 156, 1982b: 165, 1985c: 173; Schedl 1976a: 53; Wood, S. L. 1982b: 813. (**tx**) Anderson, W. H. & Anderson 1971: 9; Bright 1985c: 173; Eggers 1941a: 103; Nunberg 1959a: 417; Wood, S. L. 1972e: 197, 1982b: 813.
variabilis Schedl 1948f: 281. Syntypes ♀; Bolivia: Rio Aguacatal, Colomb. W. Coc.; Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 176.
Notes: Schedl 1979c: 264 (citation of holotype invalid).
References: (**tx**) Schedl 1948f: 279, 281, 1979c: 264; Wood, S. L. 1989: 176.
trinidadensis Schedl 1961a: 530. Holotype ♀; Trinidad, River Estate; BMNH, London. Synonymy: Wood 1972e: 197.
Notes: (3) Schedl 1966f: 118 (described male).
References: (**tx**) Schedl 1961a: 530, 1966f: 118, 1979c: 256; Wood, S. L. 1972e: 197.

***carinensis* Eggers** 1923a: 180. Holotype ♀; Carin Cheba (Birma?), 900–1100 m; MCG, Genova.
Distribution: Asia (Burma).
References: (**tx**) Eggers 1923a: 180.

***carinulatus* Eggers** 1920: 41. Lectotype ♀; Mauritius; Schedl Collection in NHMW, Wien.
Distribution: Africa (Mauritus Island).
References: (**ds**) Schedl 1969d: 11. (**tx**) Eggers 1920: 41; Schedl 1962j: 330, 1979c: 53.

***caudatus* Schedl** 1957d: 110. Holotype ♀; Congo Belge: Yangambi; MRCB, Tervuren.
Figures: Nunberg 1963b:pl. 8, figs. 5–8, Schedl 1962j: 562.
Distribution: Africa (Zaire).
Hosts: *Antrocaryon micraster*, *Klainedoxa gabonensis*, *Musanga cecropioides*, *Pterocarpus soyauxii*.
References: (**hb**) Schedl 1962j: 562. (**ds**) Schedl 1962j: 562. (**tx**) Nunberg 1963b: 22, pl. 8; Schedl 1957d: 84, 110, 1962j: 562, 1979c: 55.

***cavatus* Browne** 1980c: 487. Holotype ♀; Donggala (Celebes) to Nagoya (Japan), imported; BMNH, London.
Distribution: Indonesia (Celebes).
Hosts: *Diospyros ebeneum*.
References: (**ds**) Browne 1980c: 487, 1983a: 555.

***cavuloides* Browne** 1984c: 451. Holotype ♀; Tg. Mani (Sarawak) to Nagoya (Japan), imported, BMNH, London.
Distribution: Indonesia (Sarawak in Borneo).
Hosts: *Dipterocarpus* sp.
References: (**ds**) Ohno, Yoneyama, & Nakazawa 1982b: 8. (**tx**) Browne 1984c: 451.

***cavulus* Browne** 1974b: 538. Holotype ♀; Malaya: Kepong, Forest Research Institute Insectary; BMNH, London.
Distribution: Asia (Malaya).
References: (**tx**) Browne 1974b: 538.

***celsoides* Hagedorn** 1908: 379. Holotype ♀; Australia; IRSNB, Brussels.
Distribution: Australia.
References: (**ds**) Hagedorn 1910d: 100; Kleine 1913b: 160, 1914b: 298. (**tx**) Hagedorn 1908: 379, 1910a: 152.

***celsus* Eichhoff** 1868a: 400. Syntypes ♀; America boreali [USA]; Hamburg Museum, lost.
Figures: Bright 1976d: 132, Gagne & Kearby, Nunberg 1959a:pl. 17, figs. 7–8, pl. 18, figs. 1–2.
Distribution: North America (Arkansas, Connecticut, District of Columbia, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Louisiana, Maryland, Michigan, Mississippi, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Texas, Vermont, Virginia, West Virginia in USA).
Hosts: *Carya* spp.
References: (**ay**) Gagne & Kearby 1979. (**bv**) Gagne & Kearby 1974, 1978, 1979; Meixner 1937:

1218; Roling & Kearby 1975b: 1977; Turnbow & Franklin 1980. (**cn**) Blackman 1950; Chamberlin 1924, 1939: 454; Doane et al. 1936; Felt 1906: 446, 1916: 76, 1923: 89, 1926: 247, 277, 1930a: 247, 277, 1942; Felt & Rankin 1932: 260; Herrick 1935: 221; Hopkins 1896d: 249, 1897b: 150, 1904a: 39; Hubbard 1897b: 24; Kowal 1949a: 12–13; Morris 1955: 139; Packard 1890: 92, 297; Pierson 1927: 72; Rhoads 1924: 151; Roling & Kearby 1977; Smith, J. B. 1900: 363; Swaine 1918a: 126, 128. (**ec**) Batra 1963b: 217; Chamberlin 1939: 454; Felt 1906: 446; Roling & Kearby 1977; Steinhaus 1946: 403. (**hb**) Baker, W. L. 1972: 270; Beal & Massey 1945: 154–155; Bellevoye 1898; Blackman 1922b: 117–120, 1950; Blackman & Stage 1924: 151–153; Bright 1976d: 136; Chamberlin 1939: 454; Chittenden 1890; Deyrup & Atkinson 1987a: 65; Doane et al. 1936; Drooz 1985: 373; Dyakowski 1911; Felt 1906: 446, 1926: 247, 277, 1930a: 247, 277; Felt & Rankin 1932: 260; Gagne & Kearby 1974, 1978, 1979; Herrick 1935: 221; Hopkins 1904a: 39, 1905a: 384; Hubbard 1897a: 422, 1897b: 24; Lengerken 1954: 312; Packard 1890: 297; Pierce 1907: 291; Pierson 1927: 72; Skaife 1954: 253; Swaine 1918a: 126, 128; Wood, S. L. 1982b: 833. (**ds**) Anonymous 1926c: 520; Baker, W. L. 1972: 270; Beal & Massey 1945: 154–155; Beaulne 1941; Blackman 1922b: 117–120, 1950; Blatchley & Leng 1916: 623; Bright 1968b: 1310, 1976d: 136; Britton 1920a; Chamberlin 1939: 454; Chittenden 1890; Deyrup 1981b: 6; Deyrup & Atkinson 1987a: 65; Dodge 1938: 13, 54; Drooz 1981b: 6; Felt 1926: 247, 277, 1930a: 247, 277; Felt & Rankin 1932: 260; Gagne & Kearby 1978, 1979; Gemminger & Harold 1872: 2685; Hagedorn 1910d: 100; Hamilton 1895: 346, 378; Harrington 1884a; Henshaw 1885: 148; Hopkins 1893a: 135, 1893b: 211; Hubbard & Schwarz 1878a: 666; Kirk 1969, 1970; Kleine 1913b: 160, 1914b: 393; Leng 1920: 342; Leonard 1928: 520; MacGillvray, A. & Houghton 1902; Schedl 1971f: 148; Smith, J. B. 1900: 363, 1910: 402; Swaine 1909: 151; Turnbow & Franklin 1980; Wenzer 1915: 188; Wheeler 1922: 521; Wood, S. L. 1982b: 833. (**tx**) Beal & Massey 1945: 154–155; Blackman 1922b: 117–120; Blatchley & Leng 1916: 623; Bright 1968b: 1310, 1976d: 132, 136; Chamberlin 1939: 454; Dodge 1938: 13, 54; Eggers 1928c: 96, 1931a: 21; Eichhoff 1868a: 400, 1875: 203, 1878b: 399; Gagne & Kearby 1979: 298; Hagedorn 1910a: 153; Hopkins 1915b: 62, 67; Hubbard 1897b: 22, 24; Jacques 1951: 353; LeConte 1868: 159, 1876: 359–360; Meixner 1937: 1218; Nunberg 1959a: 418; Swaine 1909: 151, 1918a: 126, 128; Wood, S. L. 1982b: 833; Zimmermann 1868: 145.

biographus LeConte 1868: 160. Holotype ♂; Illinois [USA]; MCZ, Cambridge. Synonymy: Eichhoff 1878b: 399.
References: (**cn**) Felt 1906: 447. (**ds**) Gemminger & Harold 1872: 2685; Henshaw 1882: 269, 1885: 148; Hubbard & Schwarz 1878a: 666; Leng 1920: 342; Schwarz 1878d: 468, 666; Swaine 1909: 152. (**tx**) Eichhoff 1878b: 399–400; Hopkins 1896: 249; LeConte 1868: 159–160, 1876: 359–360, 1878a: 468; Swaine 1909: 152.

***chujoi* Schedl** 1951i: 73. Syntypes ♀; Formosa; Schedl Collection in NHMW, Wien.
Distribution: Asia (Taiwan).
Notes: (1) Schedl 1979c: 57 (citation of holotype invalid).
References: (**ds**) Nobuchi 1967: 21. (**tx**) Schedl 1951i: 73–74, 1979c: 57.

***ciliatoformis* Schedl** 1953f: 81. Lectotype ♀; Brisbane, Australia, in imported logs of Borneo cedar; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 57.
Distribution: Asia (Malaya), Indonesia (Borneo), New Guinea.
Hosts: *Pasania sundaica*, *Shorea balanocarpoides*.
References: (**bv**) Gray, B. 1974c. (**hb**) Browne 1961c: 115; Gray, B. 1974c. (**ds**) Browne 1961c: 115, 1986c: 662. (**tx**) Schedl 1953c: 290, 1953f: 81, 1979c: 57.

***ciliatus* Eggers** 1940: 141. Holotype ♀; Java (Tjibodas, G. Gedeh); Kalshoven Collection.
Distribution: Asia (Fujian in China), Australia, Indonesia (Java).
Hosts: *Eupatorium* sp.
References: (**ds**) Schedl 1979a: 158. (**tx**) Eggers 1940: 141–142; Schedl 1942d: 5, 1951i: 67, 1952c: 64, 1953f: 81, 1954a: 140, 1958k: 148, 1979c: 57.

***cinctipes* Schedl** 1979g: 105. Holotype ♀; Papua, Bulolo, Morobe Dist., New Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1979g: 105.

***circumspinosus* Schedl** 1972i: 52. Holotype ♀; New Guinea (NE), Umboi I., 1 km N Awelkon, 600 m; BPBM, Honolulu.
Distribution: New Guinea.
Notes: (3) Schedl 1975f: 363 (described male).
References: (**tx**) Schedl 1972i: 52, 1975f: 363, 1979c: 58.

***clerodendronae* Schedl** 1952i: 17. Holotype ♀; Congo Belge: Kivu, Mulungu; MRCB, Tervuren.
Figures: Nunberg 1963b:pl. 9, figs. 1–4, Schedl 1962j: 266.
Distribution: Africa (Ghana/ Tanzania/ Zaire).
Hosts: *Acacia molissima*, *Albizzia* sp., *Brillantaisia* sp., *Cinnamomum camphora*, *Clerodendron* sp., *Klainedoxa gabonensis*, *Myrianthus holstii*, *Trichilia* sp.
References: (**hb**) Beaver & Loyttyniemi 1985a: 74; Browne 1963a: 240. (**ds**) Beaver & Loyttyniemi 1985a: 74; Browne 1963a: 240; Mayne & Donis 1962: 317; Nonveiller 1984: 41; Schedl

1962j: 266. (**tx**) Nunberg 1963b: 23, pl. 9; Schedl 1952i: 17–18, 1957d: 84, 98, 1962j: 266, 1962k: 1099, 1979c: 58.

clerodendronae alpinus Schedl 1957d: 98. Syntypes ♀; Hembe-Bitale; not given in original description, apparently in MRCB, Tervuren and NHMW, Wien.

Notes: (1) Schedl 1979c: 59 (citation of holotype invalid).

References: (**hb**) Roberts 1969: 131; Schedl 1962j: 266. (**ds**) Schedl 1962h: 60, 1962k: 1099, 1965e: 354. (**tx**) Nunberg 1963b: 24; Schedl 1957d: 98, 1962j: 266, 1979c: 59.

clerodendronae morosus Schedl 1962j: 267. Holotype ♀; Congo Belge: Yangambi; Schedl Collection in NHMW, Wien.

References: (**tx**) Schedl 1962j: 267, 1979c: 59.

***cognatus* Blandford** 1896a: 19. Syntypes ♀; Indo-China: Mytho and Saigon; BMNH, London.

Figures: Nobuchi 1978a:pl. 4.

Distribution: Africa (Cameroon), Asia (Burma/ Andaman Islands, Bengal, Nicobar Islands in India/ Malaya/ Thailand/ Vietnam), Australia, Fiji Islands, Indonesia (Borneo, Java, Sumatra), New Guinea, Philippine Islands, Solomon Islands (Rennell Island).

Hosts: *Bombax insigne*, *Bruguiera parviflora*, *Canarium euphyllum*, *Diospyros oocarpa*, *Dipterocarpus turbinatus*, *Excaecaria agallocha*, *Heritiera fomes*, *Lagerstroemia hypoleuca*, *Mimusops littoralis*, *Planchonia andamanica*, *Parishia insignis*, *Pterocarpus dalbergioides*, *Rhizophora apiculata*, *R. mucronata*, *Salmalia insignis*, *Sterculia alata*, *S. campanulata*, *Terminalia* spp.

Notes: (3) Hagedorn 1912a: 343 (described male).

References: (**en**) Aulmann 1913: 1–126; Green 1916: 608–636; Hagedorn 1913a; Ishikura 1966; Kleine 1932a: 307; Mathur & Singh 1960c, 1961a: 10, 1961b: 28; Yunus & Hua 1980: 230. (**ec**) Neger 1911a: 52; Roberts 1977a: 254. (**hb**) Browne 1961c: 144–145; Hagedorn 1913a; Kalshoven 1959c: 141, 1963; Kleine 1932a: 307; Roberts 1977a: 254. (**ds**) Beeson 1930: 229, 1961: 303; Bhasin, Roonwal, & Singh 1958; Browne 1961a: 304, 1961c: 144, 1968c: 113, 1974a: 65; Choo & Woo 1983; Hagedorn 1910d: 100, 1913a; Ishikura 1966; Kalshoven 1959c: 141, 1963; Kleine 1913b: 160, 1914b: 274, 279, 1932a: 307, 1934a: 172; Mathur & Singh 1960c, 1961a: 10, 1961b: 28; Nobuchi 1978a: 40; Ohno, Yoneyama, & Nakazawa 1982a: 4, 1982b: 8, 1987: 94; Ohno et al. 1987: 88, 1988a: 93, 1989: 61; Roberts, H. 1977a: 254; Schedl 1936d: 3, 1937f: 15, 1959a: 502, 1961c: 70, 1962b: 184, 1962i: 74, 1962k: 1099, 1964i: 248, 1965g: 23, 1966b: 48, 1966g: 31, 1968e: 263, 1969c: 52, 1971c: 362, 1972a: 145, 1974c: 262; Yunus & Hua 1980: 230. (**tx**) Beeson 1930: 53, 229; Blandford 1896a: 19; Hagedorn 1910a: 153, 1912a: 343–344; Nobuchi 1978a:pl. 4, 1983: 302; Schedl 1931c: 346, 1937e: 543, 1939e: 333, 1942d: 7, 1953b: 124, 1954a: 141, 1955b: 281, 283, 285, 1958i: 215, 1959a: 502, 1965g: 23, 1962k: 1099.

***collis* Niisima** 1910a: 12. Syntypes 3 ♀; Kumanotaira bei Karuisawa, Henskih, Japan; Nobuchi Collection, Ibaraki.

Distribution: Asia (Japan).

References: (**ds**) Murayama 1954b: 176; Nobuchi 1985c: 24. (**tx**) Murayama 1954b: 176; Niisima 1910a: 12; Schedl 1934f: 1645.

***commixtus* Blandford** 1898b: 208. Lectotype ♀; Bugaba, Chiriqui, Panama; BMNH, London.

Distribution: North America (Costa Rica/ Panama), South America (Colombia).

Hosts: *Pouteria* sp., *Theobroma cacao*.

References: (**hb**) Wood, S. L. 1982b: 814. (**ds**) Blackwelder 1947: 779; Hagedorn 1910d: 100; Kleine 1913b: 100, 1914b: 371; Schedl 1960a: 77; Steinhausen 1956: 48; Wood, S. L. 1982b: 814. (**tx**) Blandford 1898b: 208; Hagedorn 1910a: 153; Schedl 1940a: 367, 1951m: 123, 1961i: 229, 1979c: 60; Steinhausen 1956: 48; Wood, S. L. 1982b: 814.

***comparabilis* Schedl** 1957d: 91. Holotype ♀; Congo Belge: Kivu, Hembe-Bitale, and Ruanda: Ihembe; MRCB, Tervuren.

Figures: Nunberg 1963b:pl. 10, figs. 1–4.

Distribution: Africa (Zaire).

Hosts: *Alchornea hirtella*, *Ficus* sp., *Pachystela laurentii*, *Strombosia scheffleri*.

References: (**ec**) Schedl 1958d: 192. (**hb**) Schedl 1962j: 256. (**ds**) Schedl 1962j: 256. (**tx**) Nunberg 1963b: 24, pl. 10; Schedl 1957d: 91, 1957e: 881, 1962j: 256, 1979c: 60.

***concentus* Wood** 1974a: 39. Holotype ♀; Tapanti, Cartago, Costa Rica; Wood Collection.

Distribution: North America (Costa Rica), South America (Venezuela).

Hosts: *Alexa imperatricia*, *Phoebe mexicana*.

References: (**hb**) Wood, S. L. 1982b: 817. (**ds**) Wood, S. L. 1982b: 817. (**tx**) Wood, S. L. 1974a: 39, 1982b: 817.

***conditus* Schedl** 1971c: 379. Holotype ♀; India: Dehra Dun, Mussoorie; Schedl Collection in NHMW, Wien.

Distribution: Asia (Uttar Pradesh in India/ Nepal).

References: (**ds**) Schedl 1973b: 211. (**tx**) Schedl 1971c: 379, 1979c: 61.

***confluens* Schedl** 1966f: 113. Holotype ♀; Argentinien, Prov. Buenos Aires; Schedl Collection in NHMW, Wien.

Distribution: South America (Argentina/ Brazil/ Uruguay).

References: (**ds**) Schedl 1976a: 54, 1979e: 58. (**tx**) Schedl 1966f: 113, 1979c: 61.

***congruens* Schedl** 1966f: 114. Holotype ♀; Bolivien; Schedl Collection in NHMW, Wien.

Distribution: South America (Bolivia).

References: (**tx**) Schedl 1966f: 114, 1979c: 63.

***conidens* Eggers** 1936d: 632. Holotype ♀; Mysore: Wynaad; BMNH, London.
Distribution: Asia (Mysore in India).
Hosts: *Coffea* sp.
References: (**tx**) Eggers 1936d: 632–633.

***conradti* Hagedorn** 1910b: 8. Syntypes ♀; Kamerun; MNB, Berlin.
Figures: Nunberg 1963b:pl. 5, figs. 1–4, Schedl 1962j: 228.
Distribution: Africa (Cameroon/ Equatorial Guinea/ Gabon/ Ghana/ Ivory Coast/ Nigeria/ South Africa/ Zaire).
Hosts: Many listed by Schedl 1962j: 230–231. *Canarium* sp., *Macrolobium* sp., *Terminalia ivorensis*.
References: (**ec**) Schedl 1962j: 227. (**hb**) Ghesquiere 1933a: 31–34, 1933b: 780; Jones, Roberts, & Baker 1959: 13; Roberts 1969: 131; Schedl 1962j: 227. (**ds**) Aulmann 1912: 40–41; Browne 1980b: 382; Cachan 1957: 15, 43–53; Hagedorn 1910d: 100; Kleine 1913b: 160, 1914b: 312, 1928: 307; Schedl 1962j: 227, 1965g: 21, 1979b: 416; Webb & Jones 1957: 25–38; Wichmann 1954: 521. (**tx**) Browne 1970: 571; Eggers 1920: 42–43, 1932c: 23, 1933g: 18; Hagedorn 1910a: 153, 1910b: 8–9, 1913a: 19–20, 1913b: 255; Schedl 1950d: 15, 1950e: 211, 1952i: 7, 1954d: 871, 1954e: 51, 64, 67, 1957d: 84, 88, 1962j: 227–228, 1963i: 63, 1965g: 21.

ambasius Hagedorn 1912a: 342. Holotype ♀; Kamerun; Hamburg Museum, lost. Synonymy: Schedl 1963i: 63.
References: (**cn**) Anonymous 1953j: 25; Aulmann 1913: 1–126; Ghesquiere 1933a; Hagedorn 1913a; Kleine 1932a: 307; Thompson, G. H. 1960. (**ec**) Anonymous 1953j: 25. (**hb**) Browne 1963a: 240; Green 1916: 608–636; Hagedorn 1913a; Kleine 1932a: 307. (**ds**) Browne 1963a: 240; Hagedorn 1913a; Kleine 1913b: 160, 1914b: 312, 1932a: 307; Roberts 1960b: 36, 1960e, 1960f; Schedl 1964e: 68, 1979b: 416. (**tx**) Eggers 1920: 41, 1931c: 18, 1932c: 23, 1933g: 18; Hagedorn 1912a: 342, 1913b; Nunberg 1963b: 17–18, pl. 5; Schedl 1950d: 15, 1950e: 211, 1953d: 97, 1954d: 871, 1954e: 50–51, 1957d: 84, 1962j: 227, 1963i: 63.

carbonarius Eggers 1927a: 190. Holotype ♀; Belg.-Congo (Haut-Uele: Moto); MRCB, Tervuren. Synonymy: Schedl 1962j: 223.
References: (**tx**) Eggers 1927a: 190, 1931c: 18, 1932c: 23, 1933g: 18; Schedl 1962j: 227.

***consobrinus* Eggers** 1932d: 296. Holotype ♀; Congostaat (Haut-Uele: Moto); MRCB, Tervuren.
Figures: Nunberg 1963b:pl. 10, figs. 5–8.
Distribution: Africa (Uganda/ Zaire).
Hosts: *Alstonia boonei*, *Beilschmiedia gilbertii*, *Celtis mildbraedii*, *C. zenkeri*, *Chlorophora excelsa*, *Khaya anthontheca*, *Millettia ferruginea*, *Oxystigma oxyphyllum*, *Scorodophloeus zenkeri*, *Trema guineensis*.
References: (**ds**) Browne 1973a: 281, 1980c: 486, 1984c: 450; Mayne & Donis 1962: 318; Schedl 1962j: 258. (**tx**) Eggers 1932d: 296–297; Nunberg 1963b: 25, pl. 10; Schedl 1937b: 403, 1941d: 380, 1950c: 205, 1950d: 29, 1962j: 258.

***continentalis* Eggers** 1920: 42. Holotype ♀; Natal (Durban); MNB, Berlin.
Distribution: Africa (Natal in South Africa).
References: (**tx**) Eggers 1920: 42; Schedl 1962j: 330.

***convexicauda* Eggers** 1932d: 303. Holotype ♀; Westafrica (Goldkuste); USNM, Washington.
Distribution: Africa (Ghana).
References: (**tx**) Anderson, W. H. & Anderson 1971: 10; Beeson 1935: 121; Eggers 1932d: 303–304, 1933b: 37; Schedl 1954e: 47, 1957d: 84, 1962j: 320.

***cornivorus* Murayama** 1950b: 63. Holotype ♀; Irazuyama, Shikoku, Japan; Murayama Collection in USNM, Washington.
Distribution: Asia (Japan).
Hosts: *Carpinus laxiflora*, *Cornus controversa*.
References: (**ds**) Murayama 1954b: 176; Nobuchi 1985c: 24. (**tx**) Murayama 1950b: 63, 1954b: 176.

***cornutus* Schaufuss** 1891: 17. Holotype ♀; Madagascar; Hamburg Museum, lost.
Distribution: Madagascar.
References: (**ds**) Alluaud 1900: 440; Fairmaire 1892b; Frappa 1933: 179; Hagedorn 1910d: 100; Kleine 1913b: 160, 1914b: 326; Schedl 1977b: 143. (**tx**) Anderson, W. H. & Anderson 1971: 10; Blandford 1898b: 207; Fairmaire 1892b; Hagedorn 1910a: 153, 1913b: 256; Schaufuss 1891: 17; Schedl 1953d: 69, 1977b: 143, 1979c: 65.

***corpulentus* Eggers** 1930d: 198. Holotype ♀; Assam (Lakhimpur, Upper Dihing Reserve); FRI, Dehra Dun.
Distribution: Asia (Xizang [Tibet] in China/ Assam in India/ Nepal).
Hosts: *Acrocarpus fraxinifolius*, *Albizzia lebbek*, *Artocarpus chaplasha*, *Canarium euphyllum*, *Sterculia villosa*, *Vatica lanceaefolia*.
References: (**cn**) Mathur & Singh 1961a: 72, 1961b: 71; Roonwal 1954: 33. (**ds**) Beeson 1930: 55, 1961: 303; Bhasin, Roonwal, & Singh 1958; Kleine 1934a: 172; Mathur & Singh 1961a: 72, 1961b: 71; Roonwal 1954: 33; Schedl 1973b: 211. (**tx**) Beeson 1930: 55; Eggers 1930d: 198–199.

***costaricensis* Blandford** 1898b: 210. Holotype ♀; Volcan Irazu, Costa Rica; BMNH, London.
Distribution: North America (Costa Rica/ Panama).
Hosts: *Phoebe mexicana*.
References: (**hb**) Wood, S. L. 1982b: 823. (**ds**) Blackwelder 1947: 779; Hagedorn 1910d: 101; Kleine 1913b: 160, 1914b: 271; Wood, S. L. 1982b:

823. (**tx**) Blandford 1898b: 210; Hagedorn 1910a: 153; Wood, S. L. 1979b: 136, 1982b: 823.

nevermanni Schedl 1935d: 93. Lectotype ♀; Costa Rica, Vara Blanca; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 165. Synonymy: Wood 1979b: 136.

References: (**ds**) Blackwelder 1947: 780; Schedl 1966f: 77. (**tx**) Schedl 1935d: 93, 1979c: 165; Wood, S. L. 1979b: 136.

***costatomorphus* Schedl** 1950g: 897. Lectotype ♀; ex imported logs of "Borneo cedar" at Brisbane, Australia, Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 67.

Figures: Nobuchi 1978a:pl. 2.

Distribution: Asia (Singapore), Indonesia (Borneo), Philippine Islands.

Hosts: Borneo cedar, *Rhizophora* sp. seedlings.

References: (**ds**) Nobuchi 1978a: 26; Schedl 1966g: 31, 1975a. (**tx**) Nobuchi 1978a:pl. 2, 1983: 302; Schedl 1950g: 897, 1975a: 458, 1979c: 67.

***costulatus* Eggers** 1940d: 147. Holotype ♀; Java (Preanger, G. Tangkoeban Prahoe); Drescher Collection [Eggers cotype in NHMW, Wien].

Distribution: Indonesia (Java).

Notes: (1) Schedl 1979c: 67 (cited holotype in Schedl Collection when one already existed in the Drescher Collection).

References: (**tx**) Eggers 1940d: 147–148; Schedl 1979c: 67.

***crenulatus* Eggers** 1920: 117. Holotype ♀; Ostafrika; Hamburg Museum, lost.

Distribution: Africa (Tanzania).

References: (**tx**) Eggers 1920: 117, 1932d: 301; Schedl 1962j: 297.

***cribratus* Eggers** 1940d: 145. Holotype ♀; West Java (Tjampea); Kalshoven Collection.

Distribution: Indonesia (Java).

References: (**hb**) Kalshoven 1959c: 150. (**ds**) Kalshoven 1959c: 150. (**tx**) Eggers 1940d: 145; Schedl 1979c: 68.

***cribripennis* Eggers** 1927a: 191. Holotype ♀; Belg.-Congo (Sankuru); MRCB, Tervuren.

Figures: Nunberg 1963b:pl. 11, figs. 1–2.

Distribution: Africa (Zaire).

Hosts: *Ouratea* sp.

References: (**ds**) Ghesquiere 1933a: 31–35, 1933b: 781; Roberts 1969: 131; Schedl 1962j: 233. (**tx**) Eggers 1927a: 191, 1933b: 33, 1935c: 310; Nunberg 1963b: 26, pl. 11; Schedl 1962j: 233.

***crinitulus* Wood** 1974a: 34. Holotype ♀; 40 km SE Socopo, Barinas, Venezuela; Wood Collection.

Distribution: North America (Panama), South America (Venezuela).

Hosts: *Hirtella triandra*.

References: (**tx**) Wood, S. L. 1974a: 34.

***crinitus* Schedl** 1962j: 301. Holotype ♀; Congo Belge: Hembe-Bitale; Schedl Collection in NHMW, Wien.

Distribution: Africa (Nigeria/ Zaire).

Hosts: *Anthonotha* sp., *Garcinia* sp., *Lovoa trichilioides*.

References: (**tx**) Schedl 1962j: 301, 1979c: 69.

nigericus Browne 1970: 572. Holotype ♀; Nigeria: Boshi Extension Forest Reserve, 5000 ft.; BMNH, London. Synonymy: Schedl 1972p: 155, Wood 1989: 176.

References: (**tx**) Browne 1970: 572; Schedl 1972p: 155.

***cruciatus* Schedl** 1973e: 90. Holotype ♀; Vanapa River, Central District [New Guinea]; CSIRO, Canberra.

Distribution: New Guinea.

Hosts: *Dracontomelum* sp.

References: (**tx**) Schedl 1973e: 90, 1979c: 70.

***cryptographus* (Ratzeburg)** 1837: 160 (*Bostrichus*). Syntypes ♀; presumably sudlichen Deutschland; not located.

Figures: Balachowsky 1949a: 226, 231, Grune 1979: 157, Pfeffer 1989a:pl. 8.

Distribution: Asia (Siberia in E USSR), Europe (Austria/ Czechoslovakia/ Denmark/ Finland/ France/ Germany/ Greece/ Hungary/ Norway/ Poland/ Sweden/ W USSR).

Hosts: *Populus* spp.

References: (**ay**) Escherich 1923b: 488; Feytaud 1950a; Klimesch 1914: 215; Nunberg 1928: 140. (**bv**) Grune 1979: 157; Meixner 1937: 1217; Nuorteva 1956c: 58. (**cn**) Escherich 1923b: 488; Esterberg 1959; Feytaud 1950a; Grandi 1951; Kontkanen 1932: 63; Kovacevic 1957: 69; Muller 1912: 186; Nusslin 1913: 286; Rhumbler 1922: 328, 1927: 345; Schimitschek 1937c: 53; Wachtl 1901: 381; Wichmann 1927b: 360. (**ec**) Balazy & Michalski 1960; Bukowski 1930; Heqvist 1963: 155; Hirschmann & Wisniewski 1982,1983; Jamnicky 1957b: 20; Kangas 1940a, 1941, 1942a; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1980b, 1983; Kleine 1908c: 219, 1909a: 49, 77, 1944: 72; Lundberg 1984; Neger 1911a: 50; Nosek 1959a: 118, 1959b: 87; Nuorteva 1957b: 68; Nusslin 1927: 345; Palmen 1946: 195; Pfeffer 1928b: 2, 1943b: 181; Pfeffer & Prihoda 1950: 3; Ruhm 1956b: 4; Sedlaczek 1935a: 162; Slaby 1947: 375; Tudor 1969: 34; Vite 1952a: 107. (**hb**) Altum 1881c: 322; Bach 1864; Barbey 1901: 27, 105; Eggers 1899c: 291, 1908d; Eichhoff 1881a: 53, 276; Escherich 1923b: 488; Feytaud 1950a; Gornostaev 1916: 314; Grandi 1951; Gyorfi 1957; Henschel 1895a: 191; Karpinski 1933b: 30; Karpinski & Strawinski 1948: 156; Karsch 1883: 142; Lekander 1963b; Lengerken 1954: 311; Mjoberg 1906: 137–142; Nosek 1959a: 118, 1959b: 87; Nunberg 1929a: 110, 1929c: 121; Nuorteva 1956c: 58; Nusslin 1898: 275, 1913: 286, 1927: 345; Pfeffer 1942a: 3; Postner 1974: 465; Ratzeburg 1837: 130, 167, 1839: 157; Rhumbler 1922: 328, 1927:

345; Rupertsberger 1880: 232; Sedlaczek 1935a: 162; Spessivtsev 1913a: 99; Stark 1926a: 336, 1952: 431; Vite 1952a: 107; Wachtl 1876a: 453, 1901: 381; Wichmann 1927b: 360. (**ds**) Acloque 1896; Andersch 1851; Barthe 1896; Bau 1888; Bedel 1888b; Bejer-Petersen & Jorum 1977: 24; Benick 1921; Blanchere & Robert 1889; Borchert 1951; Brakman 1966b: 206; Brancsik 1871, 1906; Butovitsch & Heqvist 1947; Calwer 1884, 1893; Carpentier & Delaby 1908; Chapuis & Candeze 1853; Dombrowsky 1887; Eggers 1904; Endrodi 1958b, 1981: 184; Escherich 1923b: 488, 1932b; Esterberg 1959; Eyquem 1891; Fjellberg 1966: 154; Gaubil 1849: 126; Gemminger & Harold 1872: 2687; Gornostaev 1917: 308–315; Gozis 1875: 80; Grune 1979: 156–157; Hagedorn 1910d: 101; Hansen, V. 1939, 1956, 1964: 463; Hellen 1947; Henschel 1895a: 191; Heyden 1876: 301; Heyden, Reitter, & Weise 1883: 182, 1891: 674, 1906: 713; Horion 1951, 1956: 123; Jansson 1935: 77; Jazentkovsky 1912: 292; Kangas 1940: 32–34, 1941: 359–365; Karpinski 1925: 216, 1931: 28, 1933b: 30; Karpinski & Strawinski 1948: 156; Kestercanek 1881a: 12; Klefbeck & Sjoberg 1960: 232; Kleine 1912a: 268, 1913a: 36, 1913b: 160, 1934a: 172; Kontkanen 1932: 68; Kovacevic 1957: 69; Kozikowsky 1921: 181; Kraatz 1869: 59; Krogerus 1925: 45; Kurenzov 1936b: 350; Lacordaire 1866: 381; Langhoffer 1915c: 158; Lekander 1963b: 96; Lentz 1857: 139; Lomnicki 1913b: 148; Lucht 1987: 279; Lundberg 1988; Lundblad 1950c: 117; Mahler 1987: 232; Mequignon 1938: 183–185; Negru 1966b: 402, 1968a: 456; Nunberg 1928b: 88, 110, 1954: 61, 1960b: 157; Nusslin 1898: 275; Palm 1959: 24, 353; Palmen 1946: 195; Pfeffer 1924a: 96, 1928b: 2, 1931b: 73, 1935: 159, 1989a: 87, pl. 8; Pittioni 1943: 176; Postner 1974: 465; Rapp 1934: 735; Ratzeburg 1837: 130, 167, 1839: 157; Redtenbacher 1858: 835, 1874: 380; Reitter 1869b: 155, 1894a: 91, 1916: 395; Roubal 1941: 274; Saalas 1931: 67; Sainte-Claire & Mequignon 1938: 449; Schaufuss 1915: 1238; Schaum 1859: 96, 1862: 101; Schedl 1980a: 19, 1981b: 94; Scheerpeltz & Winkler 1930: 258; Schilsky 1909: 189; Seidlitz 1872: 397, 1891a: 567, 1891b: 613; Stark 1926a: 336, 1926b: 104, 1926j: 127, 1927b: 89, 1931a: 26, 1936e: 142, 1952: 411; Stein 1868: 114; Stein & Weise 1877: 165; Tredl 1907: 19; Tressens 1952: 90; Tvermyr 1960: 121; Wachtl 1876a: 453; Wanka 1915: 213; Wichmann 1927a: 70. (**tx**) Acloque 1896; Bach 1854, 1864; Balachowsky 1949a: 224–226; Barbey 1901: 27, 105; Bedel 1888b; Bertolini 1872; Brancsik 1871; Carpentier & Delaby 1908; Chapuis & Candeze 1853; Dombrowsky 1887; Eggers 1927a: 189, 1927b: 401, 1930d, 1933f: 54; Eichhoff 1864b: 39, 1878b: 337, 1881a: 53, 276, 1883a: 115, 141; Endrodi 1957b; Escherich 1923b: 488; Fauvel 1889; Ferrari 1867a: 28, 31, 1867b: 114; Fleischer 1905, 1927; Formanek 1907: 53; Grune 1979: 157; Hagedorn 1910a: 153; Hansen, V. 1956, 1964: 463; Henschel 1895a: 191; Jacquelin du Val & Fairmaire 1868: 109; Karpinski & Strawinski 1948: 156; Kuhnt 1913: 1060; Lacordaire 1866: 381; Letzner 1891: 377; Lucht 1987: 279; Lundberg 1988; Meixner 1937: 1217; Negru 1966b: 402; Nunberg 1928a: 140, 1929c: 121, 1954: 61; Pfeffer 1932b: 21, 1942a: 3, 1955a: 195, 1989a: 87, p. 8; Portevin 1935: 330; Postner 1974: 465; Quaschik 1953: 35; Ratzeburg 1837: 130, 167, 1839: 157; Redtenbacher 1849: 790, 1858: 835, 1874: 380; Reitter 1894a: 91, 1913a: 83, 1916: 295; Rhumbler 1922: 328, 1927: 345; Rupertsberger 1880: 232, 1927: 345; Schedl 1934f: 1646, 1958f: 35, 1980a: 19, 1981b: 94; Schimitschek 1937c: 53–57; Schlechtendal & Wunsche 1879: 126; Seidlitz 1872: 397, 1891a: 567, 1891b: 613; Spessivtsev 1913a: 98–99, 1922a: 477, 491; Stark 1952: 431; Tieffenback 1860: 321. (**ms**) Escherich 1932b.

villosus Ratzeburg 1837: 160 (*Bostrichus*). Syntypes ♂; presumably sudlichen Deutschland; not located. Synonymy: Balachowsky 1949a: 226.

References: (**ds**) Schilsky 1909: 189. (**tx**) Balachowsky 1949a: 226; Letzner 1891: 377; Ratzeburg 1837: 160.

***cuneiformis* Schedl** 1958b: 104. Lectotype ♀; Malaya, Selangor, Kepong; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 71.
Distribution: Asia (Malaya).
Hosts: *Shorea* spp.
References: (**hb**) Browne 1961c: 123. (**ds**) Schedl 1971c: 364. (**tx**) Schedl 1958b: 104, 1979c: 71.

***cuneipennis* Schedl** 1950d: 31. Holotype ♀; Congo Belge, Elisabethville; MRCB, Tervuren.
Figures: Nunberg 1963b:pl. 12, figs. 1–4.
Distribution: Africa (Angola/ Tanzania/ Zaire).
References: (**hb**) Loyttyniemi, Beaver, & Loyttyniemi 1984. (**ds**) Beaver & Loyttyniemi 1985a: 74; Ferreira 1965: 1122; Schedl 1959p: 20, 1962j: 286. (**tx**) Nunberg 1963b: 28, pl. 12; Schedl 1950d: 31, 1957e: 882, 1962j: 286, 1979c: 71.

***cuneolus* Eggers** 1927c: 92. Holotype ♀; Philippinen: Luzon, Prov. Laguna, Mt. Maquiling; USNM, Washington.
Distribution: Philippine Islands (Luzon).
References: (**ds**) Schedl 1966b: 50. (**tx**) Anderson, W. H. & Anderson 1971: 10; Eggers 1927c: 92–93, 1930d: 203, 1940d: 150; Nobuchi 1983: 302.

***curtidentis* Schedl** 1961e: 156. Holotype ♀; Madagascar, Perinet; IRSM, Madagascar.
Distribution: Madagascar.
Hosts: *Ocotea laens*.
References: (**tx**) Schedl 1961e: 156, 1977b: 207, 1979c: 72.

***curvatus* Browne** 1986a: 98. Holotype ♀; New Guinea: Fak fak to Nagoya, Japan, imported; BMNH, London.

Distribution: New Guinea.
Hosts: *Hopea* sp. log.
References: (**tx**) Browne 1986a: 98.

***cyclopus* Schedl** 1940b: 440. Holotype ♀; Dutch New Guinea, Cyclops Mts., Mt. Lina, 3500–4000 ft.; BMNH, London.
Distribution: New Guinea.
Hosts: *Heritiera trifolia*.
References: (**tx**) Schedl 1940b: 435, 440–441, 1979c: 73.

***cylindromorphus* Eggers** 1927: 96. Lectotype ♀; Philippinen: Mindanao, Prov. Surigao, Surigao; USNM, Washington, designated by Anderson & Anderson 1971: 11.
Figures: Nobuchi 1978a:pl. 2.
Distribution: Asia (Malaya), Indonesia (Borneo), Philippine Islands (Mindanao).
Hosts: *Balanocarpus heimii*, *Shorea maxwelliana*.
References: (**ds**) Beaver & Browne 1978: 607; Browne 1961c: 157, 1980c: 483; Nobuchi 1978a: 13, 20; Schedl 1965g: 24, 1966b: 50. (**tx**) Anderson, W. H. & Anderson 1971: 11; Eggers 1927c: 96–97; Nobuchi 1978a:pl. 2, 1983: 302; Schedl 1933d: 192, 200, 1965g: 24, 1979c: 74.

***cylindrus* Schedl** 1951i: 94. Lectotype ♀; Birma (?); Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 74.
Distribution: Asia (Burma).
References: (**tx**) Eggers 1927b; Schedl 1951i: 94, 1979c: 74.

***darwini* Schedl** 1972a: 148. Holotype ♀; Northern Territory: Darwin [Australia]; Schedl Collection in NHMW, Wien.
Distribution: Australia (Northern Territory).
References: (**tx**) Schedl 1972a: 148, 1979c: 75.

***declivis* Eichhoff** 1869a: 280. Holotype ♀; Teapa, Tabasco, Mexico; Hamburg Museum, lost.
Figures: Nunberg 1959a:pl. 19, figs. 1–2.
Distribution: North America (Costa Rica/ Guatemala/ Tabasco, Veracruz in Mexico), South America (Guyana).
Notes: (1) Schedl 1979c: 76 (neotype designation invalid).
References: (**hb**) Wood, S. L. 1982b: 840. (**ds**) Atkinson & Equihua 1986a: 421, 1988: 102; Blackwelder 1947: 779; Blandford 1898b; Ferrer 1942; Gemminger & Harold 1872: 2685; Hagedorn 1903b: 546, 1910d: 161; Kleine 1913b: 160, 1914b: 355, 372; Schedl 1966f: 77, 1972g: 38; Wood, S. L. 1982b: 840. (**tx**) Blandford 1898b; Eichhoff 1869a: 280, 1878b: 401; Hagedorn 1903b: 546, 1910a: 153; Nunberg 1959a: 422; Schedl 1940a: 361, 1950i: 147, 1951a: 461, 1962p: 207, 1979c: 76; Wood, S. L. 1972e: 197, 1982b: 840.

pseudoprocer Schedl 1948f: 279. Holotype ♀; Guatemala; Schedl Collection in NHMW, Wien. Synonymy: Wood 1972e: 197.
References: (**tx**) Schedl 1948f: 279, 1979c: 201; Wood, S. L. 1972e: 197.

***decumans* Schedl** 1953c: 301. Lectotype ♀; Malaya, Kelantan; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 76.
Distribution: Asia (Malaya).
Hosts: *Dipterocarpus kunstleri*, *Shorea* spp.
References: (**tx**) Browne 1961c: 150. (**ds**) Browne 1961c: 150, 1986b: 333; Nunberg 1961b: 610. (**tx**) Schedl 1953c: 301, 1959a: 508, 1979c: 76.

***defensus* Blandford** 1894d: 118. Holotype ♀; Japan, Sapporo; BMNH, London.
Figures: Nakane et al. 1963:pl. 192 (adult).
Distribution: Asia (Japan).
References: (**bv**) Choo, Woo, & Park 1988. (**cn**) Murayama 1954a: 25. (**ds**) Blandford 1894c: Choo, Woo, & Park 1988; Hagedorn 1910d: 101; Kleine 1913b: 160, 1914b: 260; Murayama 1936a: 132, 1954a: 24–25, 1954b: 177, 1955: 104; Nakane et al. 1963: 384; Nobuchi 1985c: 24. (**tx**) Blandford 1894d: 118; Eggers 1927c: 96; Hagedorn 1910a: 53; Murayama 1934c: 299, 1936a: 132, 1954b: 177, 1955: 104; Nakane et al. 1963: 384, pl. 192; Nüsima 1909: 163; Schedl 1934f: 1646.

***deformatus* Browne** 1974a: 70. Holotype ♀; Fiji: Viti Levu, Nandarivatu; BMNH, London.
Distribution: Fiji Islands.
References: (**ec**) Roberts 1977a: 255. (**hb**) Roberts 1977a: 255. (**ds**) Browne 1974a: 65, 70; Roberts 1977a: 255.

***demissus* Wood** 1974a: 40. Holotype ♀; Rincon de Osa, Puntarenas, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: Small log.
References: (**ds**) Wood, S. L. 1982b: 822. (**tx**) Wood, S. L. 1974a: 40, 1982b: 822.

***densatus* Schedl** 1979g: 106. Holotype ♀; Papua [New Guinea]: Bulolo, Morobe Dist., Upper Manki L. A.; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1979g: 106.

***denseseriatus* Eggers** 1941b: 225. Holotype ♀; Fukien (Kuatun, 2300 m); Alexander Konig Museum, Bonn.
Distribution: Asia (Fujian in China).
References: (**tx**) Eggers 1941b: 225.

***densicornis* Schedl** 1957d: 95. Holotype ♀; Congo Belge: Hembe-Bitale; MRCB, Tervuren.
Figures: Nunberg 1963b:pl. 12, figs. 5–8.
Distribution: Africa (Zaire).
Hosts: *Lovoa trichilioides*.
References: (**hb**) Schedl 1962j: 302. (**ds**) Schedl 1962j: 302. (**tx**) Nunberg 1963b: 29, pl. 12; Schedl 1957d: 95, 1962j: 302.

***dentatulus* Browne** 1981a: 131. Holotype ♀; Kamdaru (New Ireland) to Nagoya (Japan), imported; BMNH, London.
Distribution: New Guinea.

References: (**ds**) Ohno, Yoshioka, et al. 1988a: 93, 1989: 61. (**tx**) Browne 1981a: 131.

***dentatus* Blandford** 1895a: 323. Syntypes ♀; Ceylon, Dikoya, Hadley tea Estate and Bogawantalawa, 4900–5200 ft.; BMNH, London.
Distribution: Asia (India/ Malaya/ Sri Lanka).
Hosts: *Gordonia zeylanica*.
References: (**cn**) Kalshoven 1954: 13; Mathur & Singh 1960b: 20. (**hb**) Browne 1941. (**ds**) Beeson 1961: 304; Browne 1961c: 154; Hagedorn 1910d: 101; Kleine 1913b: 160, 1914b: 274; Mathur & Singh 1960b: 20; Schedl 1936j: 20, 1959a: 508. (**tx**) Blandford 1895a: 323; Hagedorn 1910a: 153; Schedl 1959a: 508, 1960h: 108.

***dentipennis* Browne** 1983a: 558. Holotype ♀; Tatau (Sarawak) to Nagoya (Japan), imported; BMNH, London.
Distribution: Indonesia (Sarawak in Borneo).
Hosts: Seraya log.
References: (**ds**) Browne 1983a: 558, 1986a: 89; Ohno, Yoneyama, & Nakazawa 1982b: 8.

***deplanatulus* Schedl** 1950f: 53. Holotype ♀; Fiji; Eggers Collection, in NHMW, Wien.
Distribution: Fiji Islands.
Hosts: *Schefflera* sp.
References: (**ds**) Browne 1974a: 65. (**tx**) Schedl 1950f: 53, 1979c: 78.
duplex Browne 1974a: 68. Holotype ♀; Fiji: Viti Levu, Nandarivatu; BMNH, London. Synonymy: Schedl 1980: 121.
References: (**ec**) Roberts 1977a: 256. (**hb**) Roberts 1977a: 256. (**ds**) Browne 1974a: 65; Roberts 1977a: 256. (**tx**) Browne 1974a: 65–68; Schedl 1980: 121.

***deplanatus* Eggers** 1933b: 32. Holotype ♀; Franz. Guayana (Charvein, Nouveau Chantier, St. Laurent du Maroni, Les Hattes); MNHN, Paris.
Distribution: South America (Cayenne).
Hosts: *Talisia* sp.
References: (**ds**) Blackwelder 1947: 779. (**tx**) Eggers 1933b: 33; Schedl 1948f: 273; Wood, S. L. 1972e: 197.
longideclivis Wood 1968b: 1. Holotype ♀; Bartica triangle, British Guiana; BMNH, London. Synonymy: Wood 1972c: 197.
References: (**tx**) Wood, S. L. 1968b: 1, 1972c: 197.

***depressurus* Browne** 1985a: 192. Holotype ♀; Pomio (New Britain) to Nagoya (Japan), imported; BMNH, London.
Distribution: Indonesia (Moluccas), New Britain Island.
Hosts: *Agathis* sp., *Celtis* sp.
References: (**ds**) Ohno, Yoneyama, & Nakazawa 1987: 94; Ohno et al. 1989: 61. (**tx**) Browne 1985a: 192.

***derelictus* Hagedorn** 1910b: 12. Holotype ♂; Ostafrika; MNB, Berlin.
Distribution: Africa (Tanzania).
References: (**ds**) Hagedorn 1910d: 101; Kleine 1913b: 160, 1914b: 323. (**tx**) Hagedorn 1910a: 153, 1910b: 12; Schedl 1962j: 576.

***desertus* Schedl** 1971c: 379. Holotype ♀; Timor: Pimao, 1200 m; Schedl Collection in NHMW, Wien.
Distribution: Indonesia (Timor Island).
Notes: (1) The holotype is damaged, only abdomen, hind wings, and legs remain (DEB).
References: (**tx**) Schedl 1971c: 379–380, 1979c: 78.

***despectus* Schedl** 1975j: 294. Holotype ♂; Malaisia, Selangor, Kuala Lumpur; MHNG, Geneve.
Distribution: Asia (Malaya).
Notes: (1) Possible synonym notation; Schedl Collection paratypes marked male are actually female *Coccotrypes gedeanus*.
References: (**tx**) Schedl 1975j: 294, 1979c: 79.

***detectus* Schedl** 1975a: 458. Holotype ♀; Dong Dang [Vietnam]; Schedl Collection in NHMW, Wien.
Distribution: Asia (Vietnam).
Hosts: *Pinus massoniana*.
References: (**tx**) Schedl 1975a: 458, 1979c: 79.

***detritus* Eggers** 1927b: 402. Holotype ♀; Java; Eggers Collection, in NHMW, Wien.
Distribution: Indonesia (Java).
References: (**tx**) Eggers 1927b: 402–403; Schedl 1931c: 341–342, 1954c: 160, 1979c: 79.

***devius* Schedl** 1979g: 106. Holotype ♀; Papua [New Guinea]: Bulolo, Morobe Dist., Upper Manki L. A.; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1979g: 106.

***dichrous* Eichhoff** 1868c: 144. Holotype ♀; Brasilia; Hamburg Museum, lost.
Distribution: South America (Brazil/ Guyana).
References: (**ds**) Blackwelder 1947: 779; Gemminger & Harold 1872: 2685; Hagedorn 1910d: 101; Kleine 1913b: 160, 1914b: 337; Sampson 1921: 33. (**tx**) Eggers 1933b: 35; Eichhoff 1868c: 144, 1875: 202; Hagedorn 1905a: 412, 1908, 1910a: 153; Sampson 1921: 32–33.

***diglyptus* Schedl** 1956a: 33. Holotype ♀; British Cameroons, Mt. Cameroon, Buea Slope; CAS, San Francisco.
Distribution: Africa (Cameroon).
References: (**tx**) Schedl 1956a: 33, 1962j: 493, 1964f: 622, 1979c: 80.

***dimidiatus* Eggers** 1927b: 404. Holotype ♀; Perak [Malaya]; USNM, Washington.
Distribution: Asia (Malaya).
References: (**hb**) Browne 1961c: 150. (**tx**) Anderson, W. H. & Anderson 1971: 12; Eggers 1927b: 404.

***discrepans* Schedl** 1950d: 29. Syntypes ♀; D. Ost. Afrika, Usumbara, Kwai; Schedl Collection in NHMW, Wien.

Distribution: Africa (Ivory Coast/ Kenya/ Principe Island/ Sao Tome Island/ Tanzania).

References: (**ds**) Schedl 1962j: 259, 1979b: 416. (**tx**) Schedl 1950d: 29, 1962j: 259, 1979c: 82.

***discretus* Eggers** 1933b: 29. Holotype ♀; Marcapata, Peru; USNM, Washington.

Distribution: North America (Costa Rica/ Chiapas in Mexico), South America (Cayenne/ Guyana/ Peru/ Venezuela).

Hosts: *Alexa imperatricia*.

References: (**hb**) Wood, S. L. 1982b: 818. (**ds**) Atkinson & Equihua 1986a: 421; Blackwelder 1947: 779; Wood, S. L. 1982b: 818. (**tx**) Anderson, W. H. & Anderson 1971: 12; Eggers 1933b: 29–30; Schedl 1952h: 70; Wood, S. L. 1972c: 197, 1982b: 818.

usticus Wood 1968b: 3. Holotype ♀; Bartica Dist., British Guiana; BMNH, London. Synonymy: Wood 1972c: 198.

References: (**tx**) Wood, S. L. 1968b: 3, 1972c: 198.

***dispar* (Fabricius)** 1792: 363 (*Apate*). Syntypes 3 ♀; Germaniae; UZMC, Copenhagen.

Figures: Balachowsky 1949a: 222, 228, 1963a: 1283, Bevan 1987: 116, Burton et al. 1968: 191, Chararas 1962c: 317, Duffy 1953: 15, Grune 1979: 156, Pfeffer 1989a:pl. 7, Postner 1974: 462, Reisch 1966b: 172.

Distribution: Asia (Heilongjiang in China/ India/ Turkey/ E USSR), Europe (Austria/ Belgium/ Bulgaria/ Corsica/ Czechoslovakia/ Denmark/ England/ Finland/ France/ Germany/ Greece/ Hungary/ Italy/ Netherlands/ Norway/ Poland/ Sardinia/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia), North America (introduced: British Columbia, Nova Scotia, Ontario in Canada/ District of Columbia, Idaho, Illinois, Maine, Maryland, Massachusetts, Michigan, New Jersey, New York, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, Utah, Virginia, Washington, West Virginia in USA).

Hosts: *Acer* spp., *Aesculus* spp., *Alnus* sp., *Betula* spp., *Carpinus turczaninowii*, *Castanea dentata*, *Celtis* sp., *Corylus* spp., *Crateagus* sp., *Fagus* sp., *Fraxinus mandschurica*, *F.* sp., *Gleditsia* sp., *Ilex* sp., *Juglans* spp., *Liriodendron* sp., *Malus* spp., *Pinus* sp., *Plananus* sp., *Populus* spp., *Prunus* spp., *Punica* sp., *Pyrus communis*, *Quercus* spp., *Rosa* spp., *Salix* spp., *Sorbus alnifolia*, *Tsuga* sp., *Vitis* spp.

References: (**ay**) Batra 1963b: 227; Bugnion 1887b; Chapman 1904; Escherich 1923b: 466, 487, 633; Feytaud 1950a; Finnegan 1963: 137; Fisher 1954; Francke-Grosmann 1956b, 1956c, 1957, 1958: 141; French, J. R. J. & Roeper 1973; Hadorn 1933; Happ, Happ, & French 1976; Hopkins 1894g; Imhoff 1856: 228; Leisewitz 1906: 104; Lhoste & Roche 1960; Murayama 1933a: 3; Nosek 1958a: 87; Nunberg 1928a: 140; Nusslin 1911a: 338, 89; Schneider 1976; Schneider-Orelli 1911: 186, 1912: 279, 1913: 25–110, 1915: 65–67, 1916: 5–21; Schwerdtfeger 1929: 360; Sedlaczek 1902b: 244; Uchastnova 1988: 39. (**bv**) Daterman, Rudinsky, & Nagel 1965; Grune 1979: 157; Klimetzek et al. 1986: 270; Kovach 1986a; Magema, Gasper, & Severin 1982; Meixner 1937: 1216; Schroeder & Lindelow 1989. (**cn**) Acatay 1943a: 71; Ahlberg 1942; Alkan 1959b: 196; Altum 1880a; Anonymous 1878b: 398, 1896c: 28, 1931b: 325, 1940b: 8, 1962h, 1978u; Balachowsky 1963a: 1282; Barbey 1901: 104, 1902: 167, 1906d, 1925: 617; Beauverie 1912, 1913; Becker 1950; Berlese 1915; Blandford 1892b; Boocock 1959d; Bovier & Thomsen 1950: 156–157; Brandt 1952, 1957, 1960: 136; Britton 1899, 1916, 1917: 140; Brooks 1917: 1–15; Browne 1968: 714; Bud 1972; Cermack 1938; Champion 1923; Chararas 1957e; Chittenden 1895: 385, 1902; Chorbadzhievo 1929; Collinge 1915: 789–791; Eckstein 1915, 1921, 1926: 572; Egger, A. 1973; Egorov 1958: 1492; Eichhorn & Graf 1974; Engel 1949; Escherich 1923b: 466, 487, 633; Essig 1926: 520, 1958: 520; Esterberg 1959; Falck 1916: 168; Felt 1906: 446; Felt & Bromley 1937a; Feytaud 1950a; Fisher 1937a, 1952a; Fletcher 1887: 14, 1898, 1905: 240; Froggatt 1899, 1900; Gabler 1955; Garcia-Tejero 1955: 235; Gentry, J. W. 1965: 134; Geschwind 1919; Gossard 1911: 97, 116, 1913: 65, 1914: 12; Gradojevic 1938; Grandi 1951; Grill 1899; Groschke 1952b: 297, 1953: 81; Guse 1885; H. S. 1907; Hagedorn 1910c; Hahmann 1937: 140, 1938: 116; Harris 1843a, 1843b; Hartig 1872b, 1877: 195; Harvey & Munson 1899: 107–114; Hatch 1938: 194; Hauptfleisch 1930: 86; Henao 1958; Herfs 1950: 7; Hesjedal & Edland 1988; Hess 1900: 40, 1907: 240, 259; Hess & Beck 1914: 288, 1927: 344; Hill, D. S. 1987: 341; Hoffmann 1913: 218–220, 1916: 260; Hopkins 1894b: 295, 1894g: 278; Houba 1913: 252; Hubbard 1897b: 22–23; Ihssen 1907: 14–18; Jary & Austin 1937: 9–15; Joakimov 1925: 65; Johannsen 1910: 41, 1912: 363, 1913: 1–18; Johannsen & Patch 1910: 328, 1911: 235; Judeich & Nitsche 1895: 546; Kamp 1954: 4; Kauschinger 1893: 192; Kholodkovskii 1912: 279, 1912: 320; Kleine 1932a: 308; Kobakhidze 1960: 1851; Koch 1956; Kollar 1840: 254; Konig, E. 1957: 111; Koppa 1962; Koppen 1882: 252; Kotte 1941: 64, 1948: 70, 1958: 117; Kovacevic 1957: 69; Kovach 1986a; Kovach & Gorsuch 1985; Kristek 1966; Kurir 1953: 1–4, 1955: 1–4, 1957: 1–4; Lampa 1902: 112; Leach 1940b: 59; Lekander, M. 1951: 108; Lindblom 1938: 29; Lovett 1920: 55–57, 1921: 127, 1923: 5; Lugger 1899: 85–331; Luitjes et al. 1954: 118; Lundberg 1956b: 128; Lustner 1913a: 5, 1913c: 1; Majernik 1957: 72; Maksimovic 1959: 3–13; Marcu 1926c: 64; Miller & Thompson 1937: 12; Muller 1912: 186; Muller-Thurgau et al. 1917: 416–426; Noll 1938: 43; Novak, V., Hrozinka, & Stary 1976: 87;

Nusslin 1913: 204; O'Kane 1914: 249; Ormerod 1889a: 145, 1889b: 92, 1898: 185; Osterwalder 1921: 8; Paillot 1926: 838; Palm 1951: 233; Patch & Johannsen 1916: 8; Pelekassis 1962; Philipp 1950: 225; Picard 1921: 15; Reisch 1966a: 120–122, 1966b: 171–180; Reisinger 1947a: 211; Reissig 1949: 131; Reuter 1902: 18; Rhumbler 1922: 328, 1927: 343; Riley & Howard 1895: 419; Ritzema 1915: 301–331; Rodary 1959: 852; Roediger 1956: 36; Rossem 1954: 247, 1957: 57; Rutherford 1914b: 221; Saalas 1949: 343, 378; Savary 1946: 94; Schaal 1922: 205; Schimitschek 1935b: 147, 1936c, 1937c: 53, 1938c: 2119, 1939a: 458, 1939d: 2119, 1944: 179, 1955a: 136, 1955c: 85; Schmidt 1881: 55; Schneider-Orelli 1907: 289, 1915a: 66, 1915b: 47, 1917a: 5, 1917b: 463, 1938: 293, 1946: 318; Schock 1879: 367; Schoyen 1916: 32; Schreier 1950: 393; Schruft 1963: 410–419; Schuster 1918: 101; Schvester 1951b: 3, 1952b: 1, 1952c: 3, 1953: 1, 1954a: 225–257, 1954b: 9, 1956: 35; Schwappach et al. 1929: 186; Schwerdtfeger 1944a: 185, 1957a: 190; Slingerland & Crosby 1914: 232; Smith, J. B. 1900: 362; Soenen 1966: 149; Soenen & Paternotte 1972; Solinal 1966; Spirchez 1965; Stehli 1911: 475; Stephan 1952: 10; Strohmeyer 1906b: 330; Swaine 1910: 58; Taraschkewitsch 1934: 357; Theobald 1909: 367; Thompson 1946: 90–91; Tullgren 1916: 104; Vappula 1962: 123; Vasseur & Schvester 1948: 86, 1953: 167; Vayssiere 1920: 342; Vigiani 1943: 100; Vrydagh 1955a: 111; Wachtl 1901: 381; Wahl 1914: 1–4; Warburton 1917: 209–219; Weber, H. 1926: 572; Wichmann 1927b: 354, 360, 1957a: 95; Wilson 1913: 97–105, 1915: 6, 46–50; Wilson, G. F. & Becker 1960: 87; Wolff & Krausse 1922: 91; Wood, C. D. 1897: 78; Wood, S. L. 1977a: 73; Zimgiebl 1901: 58; Zurn 1902: 19, 27; Zwolfer 1949: 401. (**ec**) Annila 1977; Apel 1983; Ashe 1934; Baert & Maelfait 1977; Balazy & Michalski 1960, 1964b; Barbey 1902: 167; Batra 1963a, 1963b: 216; Batra & Michie 1963: 476; Beauverie 1910a, 1910b; Brammanis 1940; Buchner 1928, 1949; Dereksen 1941; Eichhorn & Graf 1974; Felt 1906: 446; Finnegan 1963: 137; Fisher 1954; Francke-Grosmann 1956b, 1956c, 1957; French, J. R. J. 1972; French, J. R. J. & Roeper 1972a, 1972b, 1973, 1975; Fuchs 1914b; Fuller 1958: 98; Gyorfi 1941b; Hagedorn 1907c; Hartig 1844; Heliovaara & Lilja 1989; Heqvist 1963: 155; Hesjedal & Edland 1988; Janka 1908; Joly 1949a: 10; Kabir & Gilese 1966b: 894; Kharazishvili 1957: 693; Kleine 1908c: 219, 1909a: 49, 1944: 76; Klimesch 1914c: 59; Knauer 1908: 500; Kobakhidze 1960: 1851; Kostenko 1929; Leach 1940b: 59; Leach et al. 1940: 227; Michalski & Ratajczak 1989; Mote 1935: 1–6; Neger 1908b: 279, 1908c: 276, 1908d: 322, 1909a: 374, 1909b: 408, 1911a: 50, 1911b: 223, 1915: 45; Nikitsky 1978; Norris 1979; Nosek 1956: 204, 1959a: 118, 1959b: 85; Novak 1952: 417; Nusslin 1927: 345; Palmen 1946: 195; Peklo et al. 1950: 191; Perris 1856a: 244; Pfeffer 1923a: 331, 1928b: 2, 1943b: 179; Pfeffer & Prihoda 1950: 3; Poinar 1975: 170; Ratzeburg 1869a: 176; Reiche 1966; Rodary 1959: 852; Roeper & French 1981; Ruhm 1955d: 70, 1956b: 4; Ruschka 1923: 201; Russ 1966; Saalas 1949: 343, 378; Scheerpeltz & Hofler 1948: 280; Scheidter 1936: 236; Schimitschek 1936a: 558, 1939: 449–461, 1941a: 315, 1955a: 136; Schneider 1976; Schneider-Orelli 1911: 186, 1912a: 324, 1912b: 279, 1913: 25–110; Schoyen 1914: 31–58, 1915: 37–92, 1916: 32, 1918; Schuster 1918: 101; Schvester 1950: 48, 1952: 1–9, 1954a: 225–257, 1954b: 9–12, 1955: 225–257; Schwerdtfeger 1927: 360, 1944a: 185, 1957a: 190; Sedlaczek 1915a: 45, 1935a: 162; Silvestri 1911: 396; Slaby 1947: 375; Speyer 1937: 30; Steinhaus 1946: 402, 1949: 92; Theobald 1914: 1–158, 1915; Thompson, W. R. 1943: 117; Turnau 1984; Uchastnova 1988: 39; Umnov 1958: 50–52; Vasseur & Schvester 1953: 167–172; Verrall 1943: 141; Vite 1952a: 103–104; Webb 1945: 64; Wichmann 1955a: 95; Yanovskii 1977b; Zimmermann 1908b: 717; Zimmermann, G. 1973. (**hb**) Acatay 1943a: 71–73; Ahlberg 1942; Alkan 1959b; Altum 1877, 1879c, 1879d, 1881c: 319; Anca 1961; Annila 1977; Anonymous 1878b: 398, 1934a: 747; Apel 1983; Ashe 1934: 94; Bach 1864; Baeta Neves 1943a; Balachowsky 1963a: 1255; Balachowsky & Mesnil 1935: 22; Barbey 1901: 27, 104, 1906d, 1913, 1925: 617, 1942; Bargmann 1899d: 8; Baudys 1929; Becker 1950; Beeson 1916a; Beffa 1961; Bellovoye 1894: 89–111, 1898, 1900: 89–111; Berlese 1915; Blandford 1892b; Boas 1923: 361; Bonnemaison 1953; Brandt 1960: 136; Bright 1976d: 134; Bright & Stark 1973: 76; Britton 1899; Browne 1968: 714; Budge 1949; Budkov 1897; Bugnion 1887b; Bukowsky 1930; Buysson 1910; Cairaschi & d'Agiler 1957; Cecconi 1903, 1924; Cermak 1938; Chamberlin 1958: 185; Chapman 1904: 100–102; Chararas 1957e, 1962c: 318; Chorbadzhievo 1929; Daterman, Rudinsky, & Nagel 1965; Deyrup & Atkinson 1987a: 65; Dombrowsky 1887; Drooz 1985: 373; Dyakowski 1911; Eckstein 1889, 1897, 1915, 1921, 1926: 572; Egger, A. 1973; Eichhoff 1881a: 53, 269, 1882a: 245, 1882c: 705; Eichhorn & Graf 1974; Escherich 1923b: 466, 487, 633; Essig 1926: 520, 1958: 520; Everts 1902, 1903: 769; Falck 1916: 168; Felt 1900: 446; Feytaud 1950a; Fisher 1936a, 1952a, 1954; Floericke 1924; French, J. R. J. & Roeper 1975; Froggatt 1899, 1900; Fuchs 1904a; Furniss, M. M. & Johnson 1987: 380; Furst 1888: 113; Gabler 1955; Gerhard 1908; Gillanders 1908; Gornostaev 1916: 314; Graber 1879: 130; Grandi 1951; Granlund 1921; Groschke 1952a, 1952b, 1953a; Gyorfi 1936: 526, 529, 1957; Hadorn 1933; Hagedorn 1903a, 1910c; Hartig 1872b, 1877: 195; Henschel 1876a: 210, 240, 1895a: 191; Hesjedal & Edland 1988; Hess 1900: 40, 1907: 240, 259; Hess & Beck 1914: 288,

1927: 344; Hilter 1909; Holmgren 1867: 115, 136; Hopkins 1894g, 1898b: 26; Hubbard 1897b: 22; Husson 1955: 354; Iknoevich, Matesova, & Mitisev 1958: 353; Jacobi 1906: 148; Joly 1949a: 10, 1950; Judeich & Nitsche 1895: 546; Karpinski & Strawinski 1948: 156; Karsch 1883: 142; Kauschinger 1893: 192; Kholodkovskii 1912: 279; Kleine 1932a: 308; Kleinert 1980: 68; Knotek 1894a: 559, 1899b: 18, 1901: 575; Kollar 1840: 254; Konig, E. 1957: 111; Koppa 1962; Kostin 1960: 136; Kotte 1941: 64–65; Kovach 1986a; Kozikowsky & Nunberg 1925: 135; Krivolutskaya 1960: 78; Lengerken 1939: 35, 1954; Lepiney & Mimeur 1932: 45; Lesne 1917: 222–224; Liese 1950: 141; Lindemann 1875a: 138; Lovett 1923: 5; Lunardoni & Leonardi 1889: 481; Lustner 1913a: 5; Madon 1930: 98; Magema, Gasper, & Severin 1982; Majernik 1957: 72; Marcu 1941: 403; Masutti 1964; Miestinger 1914: 183; Mjoberg 1906: 137; Morstatt 1924: 39; Munro 1926: 57; Nordlinger 1855: 180, 1856: 34, 1869: 229; Nosek 1956: 204, 1959a: 118, 1959b: 85; Novak, V., Hrozinka, & Stary 1976: 87; Nusslin 1898: 283, 1913: 204, 1927: 345; Ormerod 1889a: 145, 1889b: 92, 1890: 330–334, 1898: 185; Osterwalder 1921: 8; Palm 1951: 233, 1953a: 14; Perris 1856a: 244; Petrenko 1966; Pfeffer 1942a: 3; Postner 1974: 461; Ratzeburg 1837: 130, 169, 1839: 157, 204; Reichardt 1907: 830; Reisinger 1947a: 211; Rhumbler 1922: 328, 1927: 343; Riley 1889: 145, 1890a: 279, 1892: 17; Roediger 1956: 36; Rupertsberger 1880: 232; Saalas 1913a: 67, 85, 1949: 343, 378; Scheidter 1936a: 236; Schimitschek 1939a: 458, 1944: 179, 1955a: 136; Schmidt 1881: 55; Schneider-Orelli 1913: 25–110, 1947b: 157; Schoch 1878: 367, 387; Schvester 1954a: 225–257, 1954b: 9; Schwappach et al. 1929: 186; Schwarz 1890: 41, 1891d: 62; Schwerdtfeger 1929: 360, 1944a: 185, 1957a: 190, 1981: 196; Sedlaczek 1935a: 162; Silvestri 1911: 396; Simmel 1919a: 34–36; Soenen 1966: 149; Soenen & Paternotte 1972; Solinas 1966; Spessivtsev 1913a: 97; Speyer 1937: 30; Stark 1926a: 336, 1952: 427; Stehli 1911: 475; Stephan 1952: 10; Strohmeyer 1906b: 330; Swaine 1907: 191, 1910c: 58, 1912b: 141; Taschenberg 1880: 238, 1901: 107; Theobald 1909: 367; Thomsen 1948: 807; Tragardh 1914: 93, 1939b: 229; Tschorbadjiev 1929: 168; Vasseur & Schvester 1948: 85; Vite 1952a: 103–104; Wachtl 1876a: 452, 1901: 381; Weber, H. 1926: 572; Wichmann 1909a: 149, 1927a: 70, 1927b: 354, 360; Wilson 1915: 6, 46–50; Wilson, G. F. & Becker 1960: 87; Wissman 1846: 25; Wolff & Krausse 1922: 91; Wood, S. L. 1982b: 794; Zirngiebl 1901: 58; Zurn 1902: 19, 27. (**ds**) Acloque 1896; Altum 1880a; Ammann & Knabl 1923; Andersch 1851; Anonymous 1978u; Arru, Covassi, & de Bellis 1966: 34; Audras & Schaefer 1957; Bach 1854: 124, 131, 1864: 52; Baker, W. L. 1972: 271; Balachowsky 1944b, 1963a: 1282; Balazy & Michalski 1960; Barthe 1896; Bartindale & Bartindale 1948: 138; Bau 1888; Beck 1817; Bedel 1888b; Beeson 1916a: 218; Bejer-Petersen & Jorum 1977: 24; Benick 1921; Bielz 1851, 1887; Blanchere & Robert 1889; Boas 1923: 361; Borchert 1951; Brakman 1966b: 206; Brancsik 1871, 1906; Bright 1968b: 1307, 1976d: 134; Bright & Stark 1973: 76; Browne 1968: 714; Bruggemann 1878; Buck 1955b: 191; Budkov 1897; Bukowsky 1930; Buresh & Lazarov 1956; Buysson 1910; Calwer 1884; Cecconi 1897, 1903; Chamberlin 1917: 356, 1958: 185; Chapuis & Candeze 1853; Chittenden 1895b, 1902; Chorbadzhievo 1924d, 1929; Chrystal 1937; Debatisse 1945; Dejean 1821, 1825, 1837; Deyrup 1981b: 7; Deyrup & Atkinson 1987a: 65; Doebner 1862: 183; Drooz 1985: 373; Duftschmidt 1825; Eckstein 1923; Eder 1934; Eggers 1904, 1912f; Endrodi 1958a, 1958b, 1981: 185, 1986: 217; Ericson & Sandin 1893; Ermisch 1953; Escalera 1919; Escherich 1923b: 466, 487, 633, 1932b; Essig 1926: 520, 1958: 520; Esterberg 1928, 1959; Everts 1922: 648; Eyquem 1891; Fairmaire 1863: 165–166; Favre 1890; Fedorov 1930: 225–229; Feige 1918; Felt & Bromley 1937a; Fisher 1936a; Forster 1849: 439; Fowler 1891; Fox-Wilson 1923: 200; Fricken 1889: 352; Fuchs 1904a; Furniss, M. M. & Johnson 1987: 380; Furniss, R. L. & Carolin 1977: 412; Ganglbauer 1904; Gaubil 1849: 126; Gemminger & Harold 1872: 2685; Gentry, J. W. 1965: 134; Gerhardt 1903a; Gobang 1870: 133; Gornostaev 1917; Gozis 1875: 80; Gredler 1866: 375; Grill 1895: 311; Grune 1979: 157; Gyllenhal 1827: 624; Gyorfi 1936: 526, 529, 1941b; Hagedorn 1903a, 1910d: 101; Hamilton 1894b: 346, 406, 1895a: 378; Hansen, V. 1936, 1939, 1956, 1964: 463; Heinemann 1908a; Hellen 1947; Hennig 1954: 264; Henschel 1895a: 191; Henshaw 1895: 44; Herger 1985a: 79; Heyden 1876: 301; Heyden, Reitter, & Weise 1883: 182, 1891: 674, 1906: 713; Hickin 1963; Hill, D. S. 1987: 341; Hoffmann 1942: 13; Holmgren 1867: 115, 136; Hopping 1922: 128–134; Horion 1935, 1949, 1951; Ihssen 1907; Illiger 1805: 129; Janetschek 1957: 262; Jazentkovsky 1902: 292; Joly 1960; Judeich & Nitsche 1895: 546; Kaltenbach 1874: 87, 155, 178, 541, 624, 646, 679; Karpinski 1925: 216, 1932b: 54; Karpinski & Strawinski 1948: 156; Keen 1929: 40; Keler 1925b: 275; Kersten 1933: 75; Kestercanek 1881a: 11; Kharazishvili 1957: 693; Kiefer et al. 1942: 529; Klefbeck & Sjoberg 1960: 232; Kleine 1912a: 162, 267–268, 1913a: 36, 1913b: 168, 1914b: 248, 250, 410, 1932a: 308, 1934a: 177; Kloft & Hinks 1945: 218; Knauer 1908: 498–501; Knotek 1892a: 38, 1894a: 559, 1899b: 18, 1901: 575; Kobakhidze 1957: 178; Koca 1905: 192; Kolenati 1846: 39; Koltze 1901: 154; Koppen 1882: 252; Koschitsky 1900: 84; Kostenko 1929; Kovacevic 1957: 69; Kozikowsky & Kuntze 1925: 21; Kraatz 1869: 60; Kristek 1966; Krivolutskaya 1960: 78, 1983; Krogerus 1921a: 57; Krol

1877: 34; Kurir 1947c: 22; Langhoffer 1915c: 158; Leclercq 1971; Leng 1918: 211; Lentz 1857: 139; Lepiney & Mimeur 1932: 45; Liegel 1886: 43; Liese 1950: 141; Lindemann 1884b: 264; Linnaniemi 1935: 45; Lokaj 1868: 64; Lomnicki 1886a: 243, 1913b: 148; Lucht 1987: 279; Luitjes et al. 1954: 118; Lunardoni & Leonardi 1889: 481; Lundberg 1980: 149; Majzlan et al. 1987; Marcu 1926c: 64; Massee 1935: 164–170, 1941: 61–65, 1946: 90–95; Matthews & Fowler 1883: 42; Mienert 1887: 70; Mokrzecki 1907, 1909: 179–180, 1910: 11; Muhl 1911: 66; Negru 1966b: 402, 1968a: 456; Novak, P. 1952: 417; Nunberg 1928b: 88, 109, 1954: 58; Nusslin 1898: 283; Orest 1926c: 64; Ortzen 1886: 280; Pacher 1865: 152; Paganetti-Hummler 1901: 150; Palm 1953a: 14, 1959: 60, 214; Palmen 1946: 195; Pelekassis 1962; Perris 1876a: 256, 1877a: 415; Pfeffer 1924a: 96, 1924b: 472, 1928b: 2, 1931b: 73, 1950b: 76, 1989a: 86; Pittioni 1943: 176; Pjatnitskii 1930a: 165; Poppius 1900: 108; Postner 1974: 461 Rapp 1934: 736; Ratzeburg 1837: 130, 169, 1839: 157, 204; Redtenbacher 1858: 836, 1874: 381; Reissig 1949: 131; Reitter 1869b: 155, 1888b: 280, 1894a: 92, 1916: 294, 351; Rohrig 1955: 37; Roubal 1941: 275; Rye 1876: 7–8; Saalas 1913a: 67, 85, 1931: 67; Sahlberg 1900: 106; Sainte-Claire 1914: 475; Sainte-Claire & Mequignon 1938: 449; Schaschl 1854: 133; Schaufuss 1915: 1236; Schaum 1859: 96, 1862: 101; Schedl 1959h: 100, 1961b: 185, 1967c: 73, 1980a: 19, 1981b: 93; Scheerpeltz & Winkler 1930: 257; Schilsky 1909: 189; Schiodte 1873: 103; Schneider & Leder 1977: 55; Schwarz 1890a: 41, 1891: 62–64; Schwerdtfeger 1981: 196; Seidlitz 1872: 397, 1891a: 568, 1891b: 614; Sharp & Fowler 1893: 34; Sick 1939: 110; Siebke 1875: 284; Smith, J. B. 1900: 362, 1910: 402; Stark 1926a: 336, 1926b: 104, 1926j: 126, 1927b: 89, 1931d: 548, 1952: 427; Stein 1868: 114; Stein & Weise 1877: 165; Stephens 1829a: 144, 1830: 353, 1839: 206; Stierlin 1898: 448; Stierlin & Gautard 1871: 293, 1906: 206; Sturm 1826: 102, 1843: 230; Swaine 1909: 152; Thatcher 1951: 79; Thomson 1865: 369, 1868: 223; Tragardh 1914: 93, 1939b: 229; Tredl 1907: 18; Tschorbadjiev 1929: 168; Vayssiere 1920: 342; Vite 1953: 42; Vrydagh 1955a: 111; Wachtl 1876a: 452; Wanka 1908: 231, 1915: 213; Weber & McPherson 1991: 54; Wessel 1877: 391; Westhoff 1882: 240; Wichmann 1927a: 70, 1955a: 95, 1957a: 95; Wiepken 1883: 89; Winter, T. G. 1983: 28; Wood, S. L. 1977a: 73, 1982b: 794; Yanovskii 1974, 1977a, 1989: 64; Yanovskii & Tegshzhargal 1985: 413; Yin, Huang, & Li 1984: 172; Zinovjev 1955: 187; Zoufal 1920: 21. (**tx**) Acloque 1896; Altman 1844; Apel 1983; Bach 1854, 1864; Balachowsky 1944b, 1949a: 220, 1963a: 1282–1283; Balachowsky & Mesnil 1935: 22–24; Barbey 1901: 27, 104; Beaulieu 1923; Bedel 1888b: 403, 420; Beffa 1949, 1961; Benoit 1985: 284; Bertolini 1972; Blandford 1892b; Boas 1923: 361; Brancsik 1871; Brandt 1960:pl. 28; Bright 1968b: 1307, 1976d: 134; Burton et al. 1968: 191; Buysson 1880; Calwer 1858; Chamberlin 1958: 185; Chapuis & Candeze 1853; Chararas 1962c: 317; Chorbadzhievo 1924d; Dejean 1821, 1825; Dombrowsky 1887; Duffy 1953: 15; Duftschmidt 1825; Eggers 1912f: 29, 1920: 231, 1922c: 17, 1923a: 176, 180, 185, 1927a: 180, 1927b: 402, 1928c, 1929e: 41, 1930d: 179–199, 1931a: 19, 1933b: 27, 1935c: 209, 1937b: 335, 1940d: 139, 1941a: 101, 1942c: 36; Eichhoff 1864b: 37–38, 1866: 277, 1868d: 419, 1875: 201, 1876: 378–379, 1878b: 320, 1881a: 53, 269, 1883a: 115, 141; Endrodi 1957b; Erichson 1836: 63; Escherich 1923b: 466, 487, 623; Escherich & Escherich 1897; Everts 1903: 769, 1922: 648; Fabricius 1792: 363, 1801: 382; Fauvel 1887, 1889; Ferrari 1867a: 24, 26, 1867b: 114; Fleischer 1927; Fricken 1889: 352; Gabler 1955; Gillanders 1908; Groschke 1952a, 1953a; Grune 1979: 156–157; Gyllenhal 1813: 363, 1827: 624; Hagedorn 1908, 1910a: 153, 1910b, 1912a: 343; Hansen, V. 1956, 1964: 463; Hartig 1844: 73–74; Henry 1892: 12; Henschel 1876a: 210, 240, 1895a: 191; Hill, D. S. 1987: 341; Hopkins 1914: 117, 1915b: 68, 1915c: 211; Hubbard 1897b: 22; Iablokoff-Khnzorian 1961: 89; Illiger 1907: 321; Jacobi 1906: 148; Jacquelin du Val & Fairmaire 1868: 107, 109; Judeich & Nitsche 1895: 546; Kalina 1970: 129; Karpinski & Strawinski 1948: 156; Keen 1929: 40; Kestercanek 1881b: 254; Kinghorn 1960b: 50; Koppa 1962: 76; Knotek 1892a: 38; Kuhnt 1913: 1060; Letzner 1891: 377; Leunis 1886: 181; Lindemann 1875a: 138, 1875c: 372; Lovendal 1889b: 72, 1898: 184; Lucas 1920: 674; Lucht 1987: 279; Lunardoni & Leonardi 1889: 481; Meixner 1937: 1216; Murayama 1933a: 3, 27, 33; Negru 1966b: 402; Niisima 1910: 11; Nordlinger 1848: 249, 1856: 34; Nosek 1958: 87–90; Novak, V., Hronzinka, & Stary 1976: 87, 98; Nunberg 1928a: 140, 1954: 58; Nusslin 1911a: 89, 338; Ormerod 1889b: 92; Panzer 1795a: 287; Perris 1877a: 415; Pfeffer 1932b: 20, 1942a: 3, 1955a: 192, 1989a:pl. 7; Portevin 1935: 329; Postner 1974: 461; Quaschik 1953: 35; Ratzeburg 1837: 130, 169, 1839: 157, 204–208; Redtenbacher 1849a: 358, 1849b: 26, 1858: 836, 1874: 381–382; Reisch 1966b: 172; Reitter 1894a: 92, 1913a: 80, 1916: 294, 351; Rey 1892b: 30; Rhumbler 1922: 328, 1927: 343; Riley & Howard 1890: 279; Rupertsberger 1880: 232; Saalas 1913a: 67, 85, 1949: 343, 378; Schaufuss 1897: 108; Schedl 1934f: 1646, 1937b: 400, 1938h: 462, 1942d: 29, 1951b: 376, 1951i: 63, 1952f: 88, 1954a: 155, 1957d: 82, 84, 1957e: 881, 1959a: 155, 1959h: 100, 1960g: 11, 1964k: 220, 1980a: 19, 1981b: 93; Schimitschek 1937c: 53, 1955c: 85; Schlechtendal & Wunsche 1879: 126; Schreier 1950: 393; Seidlitz 1872: 397, 1891a: 568, 1891b: 614; Sokanovskii 1954: 20; Spessivtsev 1913a: 97–98, 1922a: 476–477, 492; Stark 1952: 427; Stephens 1829a:

144, 1829b: 12, 1830: 353, 1839: 206; Stierlin 1898: 448; Stresemann et al. 1989: 353; Swaine 1909: 152–153, 1910b: 162–164; Taschenberg 1880: 238, 1901: 107; Thomson 1865: 369, 1868: 223; Titus, Meikle, & Harrison 1985: 128; Vulinec & Davis 1984; Wissman 1846: 25; Wood, S. L. 1957a: 337, 1982b: 794; Yin, Huang, & Li 1984: 172. (**ms**) Boocock 1959d; Burton et al. 1968: 190; Eggers 1912e; Eichhoff 1868d: 419; Escherich 1932b; Hatch 1938: 194; Heinemann 1908a; Kestercanek 1881b: 254; Klimesch 1914c: 59; Lucas 1920: 674; Merino-Rodriguez 1966: 50; Ritter 1929: 555; Schwappach 1924: 57; Swaine 1907: 191, 1912b: 141.

brevis Panzer 1793: 34 (*Bostrichus*). Syntypes ♀; Germany (?); not located, presumed lost. Synonymy: Eichhoff 1878b: 321.

References: (**ds**) Illiger 1805: 129; Stephens 1829a: 144; Swaine 1909: 153. (**tx**) Bechstein 1818: 76, 216; Bechstein et al. 1805; Eichhoff 1878b: 321; Kestercanek 1881b: 254; Panzer 1793: 34, fig. 20, 1795a: 288; Redtenbacher 1849: 851; Stephens 1829a: 144; Swaine 1909: 153. (**ms**) Kestercanek 1881b: 254.

thoracicus Panzer 1793: 34 (*Bostrichus*). Syntypes ♀; Germany; not located, presumed lost. Synonymy: Hagedorn 1910d: 102.

References: (**ds**) Illiger 1805: 129; Stephens 1829a: 144; Swaine 1909: 153. (**tx**) Bechstein 1818: 75, 215; Bechstein et al. 1805: 104; Eichhoff 1878b: 221; Hagedorn 1910d: 102; Kestercanek 1881b: 254; Panzer 1793: 34, 1795a: 288, 1805: 118; Redtenbacher 1849a: 851; Stephens 1829a: 144; Swaine 1909: 153. (**ms**) Kestercanek 1881b: 254.

pyri Peck 1817: 207 (*Scolytus*). Syntypes ♀; Massachusetts [USA]; not found, presumed lost. Synonymy: Hubbard 1897: 22–23; Swaine 1918: 124.

References: (**bv**) Moeck 1971. (**cn**) Baker, W. L. 1972: 269; Blackman 1950; Britain 1927: 41–42; Brooks 1916: 14; Chamberlin 1939: 444–445; Childs et al. 1946: 3; Cook 1891: 130–131; Currie 1905: 13, 20; Doane et al. 1936; Downes 1936: 36, Drake 1921: 203–204; Eddy 1943: 48; Gossard 1913: 65, 1914: 12; Harris 1826, 1841: 75, 1842: 75, 1844, 1852a: 80, 1852b: 80, 1854: 214, 1855: 204, 1863: 91, 1890: 90; Hatch 1933; Hewitt 1915: 25, 1916: 1–40; Lintner 1887b: 84, 107, 110, 1890a: 198; Lochhead 1902: 109, 1919: 340; Lugger 1899a: 310; MacNay 1966; MacNay & Creelman 1958: 14; Mote 1935: 4, 1944: 5–7; Newcomer 1933: 32–34, 1941: 36, 1966: 35; Ormerod 1898: 185; Packard 1890: 92; Quaintance & Siegler 1922: 66, 1931b: 75; Riley & Howard 1890: 279; Roling & Kirby 1973; Ruppel 1967: 9; Saunders 1883: 143; Schuh & Mote 1948: 118–119; Swaine 1918a: 124, 125; Thompson, B. G. et al. 1944: 6, 1948: 607; Titus & Pratt 1904: 20; Walsh 1860: 308–309, 1866: 7, 1867b: 58; Whitcomb & Bourne 1940: 20. (**ec**) Chamberlin 1939: 444–445; Kinghorn 1960b; Mathers 1940: 189–190; Mote 1944: 5. (**hb**) Baker, W. L. 1972: 269; Beal & Massey 1945: 150; Blackman 1950; Chamberlin 1939: 444–445; Doane et al. 1936; Harris 1841: 75; Kinghorn 1960b; Lintner 1887b: 84, 107, 110, 1896: 270; Lugger 1899a: 310; Mather 1940: 189; Morstatt 1924: 56; Newcomer 1933: 33, 1966: 35; Packard 1890: 92; Peck 1817: 207; Roling & Kearby 1973; Saunders 1883: 143; Schwarz 1889: 138; Swaine 1918a: 124–125; Thompson, B. G. et al. 1944: 6; Titus & Pratt 1904: 20, 31. (**ds**) Anonymous 1926c: 520; Baker, W. L. 1972: 269; Beal & Massey 1945: 150; Beaulne 1956; Blackman 1950; Blatchley & Leng 1916: 626; Britton 1920a; Chamberlin 1925, 1939: 444–445; Chapuis & Candeze 1853; Cook 1891; Currie 1905; Forbes 1890: 295; Frost & Dietrich 1929; Gemminger & Harold 1872: 2686; Hatch 1933; Henshaw 1885: 148; Hopkins 1893a: 135, 1893b: 210; Keen 1929: 40; Kinghorn 1940: 84, 1960: 50; Kleine 1934a: 177; Leng 1920: 342; Leonard 1928: 520; MacNay & Creelman 1958: 14; Melsheimer 1853: 87; Patterson & Hatch 1945: 153–154; Provancher 1877: 567; Ruppel 1967: 9; Schuh & Mote 1948: 118; Schwarz 1886: 41, 45; Smith, J. B. 1900: 362, 1910: 402; Swaine 1909: 153; Wood, S. L. 1948: 72, 1951a: 128, 1957c: 403. (**tx**) Beal & Massey 1945: 150; Blatchley & Leng 1916: 626; Chamberlin 1939: 444–445; Chapuis & Candeze 1853; Comstock 1948; Eichhoff 1878b: 323; Hopkins 1915b: 68–69, 1915c: 211; Hubbard 1897: 22–23; Keen 1929: 40; LeConte 1868: 159, 1876: 358–360; Peck 1817: 205–207, 1819: 307–313; Provancher 1877: 567; Schedl 1960a: 11; Schwarz 1886: 41–45, 1887: 20; Swaine 1909: 153, 1910b: 161, 1918a: 124–125; Titus, Meikle, & Harrison 1985: 24; Wood, S. L. 1951a: 128, 1957c: 403; Zimmermann 1868: 144. (**ms**) Essig 1931: 699.

tachygraphus Sahlberg 1834: 52 (*Bostrichus*). Syntypes ♀; presumably Finland; not located. Synonymy: Eichhoff 1878b: 321.

References: (**hb**) Chittenden 1897c; Wachtl 1876a: 460. (**ds**) Calwer 1884, 1893; Gemminger & Harold 1872: 2692; Kleine 1914b: 393; Schaum 1872: 2692; Schilsky 1909: 189; Stein 1868: 114; Stein & Weise 1877: 165; Swaine 1909: 153; Wachtl 1876a: 460. (**tx**) Eichhoff 1864b: 46, 1878b: 321–323; Ferrari 1967b: 110; Kestercanek 1881b: 254; Letzner 1891: 377; Sahlberg 1834: 52, 1836: 152; Swaine 1909: 153.

ratzeburgi Kolenati 1846: 39 (*Bostrichus*). Syntypes, sex?; Iberia et Caucaso; Mus. Acad. Sc.

Petrop. et Dris. Kolenati. Synonymy: Ferrari 1867a: 27, Eichhoff 1878b: 321, 323.

References: (**ds**) Kolenati 1846: 39; Schilsky 1909: 189; Swaine 1909: 154. (**tx**) Eichhoff 1878b: 321–323; Ferrari 1867a: 27; Kolenati 1846: 39; Letzner 1891: 377; Swaine 1909; 154.

swainei Drake 1921: 203 (*Anisandrus*). Holotype ♀; Wanakena, New York; USNM, Washington. Synonymy: Wood 1957c: 403.

References: (**ec**) Thompson, W. R. & Simmonds 1964: 39, 1965: 83. (**hb**) Chamberlin 1939: 444; Drake 1921: 201–205. (**ds**) Anonymous 1926c: 520; Chamberlin 1939: 444; Leng & Mutchler 1927: 52; Leonard 1928: 520. (**tx**) Chamberlin 1939: 444; Drake 1921: 201–204; de Ruette 1970: 97, Wood, S. L. 1957c: 403.

dispar rugulosus Eggers 1922c: 17. Lectotype ♂; Brout Vernet in Frankreich; USNM, Washington, designated by Anderson & Anderson 1971: 28.

References: (**tx**) Anderson, W. H. & Anderson 1971: 28; Eggers 1922c: 17; Schedl 1934f: 1646.

cerasi Eggers 1937b: 335. Holotype ♀; Italien (Montella, Prov. Avellino); Eggers Collection, in NHMW, Wien. Synonymy: Schedl 1964k: 220.

References: (**tx**) Eggers 1937b: 355; Schedl 1938h: 462, 1964k: 220, 1979c: 55.

***dissimulatus* Wood** 1974a: 38. Holotype ♀; Tapanti, Cartago, Costa Rica; Wood Collection.

Distribution: North America (Costa Rica).

Hosts: *Miconia caudata*, and a liana.

References: (**hb**) Wood, S. L. 1982b: 816. (**ds**) Wood, S. L. 1982b: 816. (**tx**) Schedl 1980d: 121; Wood, S. L. 1974a: 38, 1982b: 816.

***distinguendus* Eggers** 1930d: 205. Holotype ♀; Almora, United Provinces (Kali Valley, 9000 feet); FRI, Dehra Dun.

Distribution: India (Uttar Pradesh).

Notes: (1) This species may belong to *Cyclorhipidion*; additional study needed.

References: (**tx**) Eggers 1930d: 204–206.

***dolosus* Blandford** 1896b: 225. Holotype ♀; Borneo, Sarawak; BMNH, London.

Distribution: Asia (Malaya), Indonesia (Sarawak in Borneo), Philippine Islands.

Hosts: *Balanocarpus heimii*, *Dipterocarpus crinitus*, *Shorea* spp.

Notes: (3) Schedl 1971c: 381 (described male).

References: (**hb**) Browne 1961c: 152; Kalshoven 1959c: 141, 152. (**ds**) Browne 1961c: 152, 1981a: 126; Hagedorn 1910d: 103; Kalshoven 1959c: 141, 152; Kleine 1913b: 161, 1914b: 289; Ohno et al. 1987: 88; Schedl 1959c: 167, 1971c: 364; Wood, S. L. 1982b: 793. (**tx**) Blandford 1896b: 225; Eggers 1927e: 97–98, 1940d: 150; Hagedorn 1910a: 153; Schedl 1942d: 44, 1959c: 167, 1971c: 381; Wood, S. L. 1982b: 793.

***dorsalis* Schedl** 1965g: 27. Holotype ♀; Cote d'Ivoire, Abidjan; Schedl Collection in NHMW, Wien.

Distribution: Africa (Ivory Coast).

References: (**tx**) Schedl 1965g: 27, 1979c: 84.

***dorsosulcatus* Beeson** 1930: 219. Holotype ♀; Burma: Bilumyo Reserve, Myitkyina; FRI, Dehra Dun.

Distribution: Asia (Burma).

Hosts: *Pentacme suavis*.

References: (**tx**) Beeson 1930: 43–44, 57, 219, 1961: 304.

***dossuarius* Eggers** 1923a: 187. Syntypes 2 ♀; Mt. Makiling auf Luzon; 1 in SMTD, Dresden, 1 in Hamburg Museum, lost.

Distribution: Asia (Vietnam), Philippine Islands (Luzon).

References: (**ds**) Schedl 1936g: 531, 1966b: 51. (**tx**) Eggers 1923a: 187–188, 1927b: 406, 1930d: 198; Nobuchi 1983: 302; Schedl 1933e: 101–102, 106, 1936g: 531, 1952b: 367, 1961f: 90, 1979c: 84.

***dryographus* (Ratzeburg)** 1837: 167 (*Bostrichus*). Syntypes ♀; apparently sudlichen Deutschland; not located.

Figures: Grune 1979: 154.

Distribution: Africa (Algeria/ Egypt/ Libya/ Morocco/ Tunisia), Asia (Iran/ Japan/ Turkey), Europe (Austria/ Belgium/ Bulgaria/ Corsica/ Czechoslovakia/ England/ France/ Germany/ Greece/ Hungary/ Italy/ Luxemburg/ Norway/ Poland/ Sardinia/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia).

Hosts: *Castanea vesca*, *Fagus* sp., *Phytophthora cambivora*, *Quercus* spp., *Ulmus* sp.

References: (**ay**) Bugnion 1887b; Crowson 1938; Escherich 1923b: 488, 632; Feytaud 1950a; Fisher 1954; Francke-Grosmann 1957; Hadorn 1933; Schwerdtfeger 1929: 360. (**bv**) Grune 1979: 155; Meixner 1937: 1216. (**cn**) Androic 1966: 46; Barbey 1925: 435; Becker 1950; Chorbadzhievo 1929; Eckstein 1926: 572; Escherich 1923b: 488, 632; Feytaud 1950a; Gabler 1955; Goidanich & Goidanich 1934; Grandi 1951; Groschke 1953b; Hess 1900: 39; Hess & Beck 1914: 291, 1927: 347; Jacquiot 1951a: 2; Judeich & Nitsche 1895: 546; Kamp 1954: 4; Kleine 1932a: 308; Konig, E. 1957: 109; Koppen 1882: 260; Marcu 1926c: 64; Nusslin 1913: 205; Pierce, W. D. 1917: 40; Reissig 1949: 131; Rhumbler 1922: 329, 1927: 346; Schimitschek 1937c: 53, 1944: 181, 1955a: 137, 1955c: 86; Schwerdtfeger 1944a: 185, 1957a: 190; Strohmeyer 1906b: 330; Wachtl 1901: 381; Weber, H. 1926: 580; Wichmann 1927b: 360, 1957a: 96; Wolff & Krausse 1922: 93; Zwolfer 1949: 401. (**ec**) Fisher 1954; Francke-Grosmann 1957; Gyorfi 1941b; Kleine 1908c: 219, 1909a: 49, 78, 1944: 73; Kostenko 1929; Michalski & Ratajczak 1989; Neger 1909b: 408, 1911a: 50; Nosek 1959a: 118, 1959b: 87; Novak 1952: 417; Nusslin 1927: 182;

Perris 1856a: 197; Pfeffer 1928b: 2, 7, 1943b: 182; Pfeffer & Prihoda 1950: 3; Poinar 1972, 1975: 170; Roubal 1934b: 178; Ruhm 1955d: 71, 1956b: 4; Schimitschek 1955a: 137; Schwerdtfeger 1929: 360, 1944a: 185, 1957a: 190; Sedlaczek 1915a: 127, 1935a: 162; Slaby 1947: 375; Vite 1952a: 106; Wichmann 1955a: 95. (**hb**) Adeli 1972: 14; Altum 1881c: 317; Bach 1864; Baeta Neves 1943a; Baeta Neves & Goes 1944; Barbey 1901: 28, 108, 1925: 435; Bargmann 1906; Becker 1950; Bugnion 1887b; Bukowsky 1930; Cecconi 1903, 1924; Charvat 1950; Chorbadzhievo 1929; Dombrowsky 1887, 1892; Duprez 1944; Dyakowski 1911; Eckstein 1897, 1926: 572, 1928; Eggers 1908d; Eichhoff 1881a: 54, 282, 1882a: 245; Escherich 1923b: 488, 632; Everts 1902; Feytaud 1950a; Fisher 1954; Fuchs 1904a; Furst 1888: 113; Gabler 1955; Girard 1873; Grandi 1951; Groschke 1953b; Gyorfi 1936: 525, 529, 1957; Hadorn 1933; Hagedorn 1903a; Henschel 1876a: 216, 240, 1895a: 192; Hergula 1939: 305; Hess 1900: 39; Hess & Beck 1914: 291, 1927: 347; Husson 1955: 352; Jacquiot 1951a: 2; Judeich & Nitsche 1895: 546; Karpinski & Strawinski 1948: 156; Karsch 1883: 142; Kleine 1932a: 308; Knotek 1894a: 559, 1896: 150; Konig, E. 1957: 109; Lengerken 1954: 318; Liese 1950: 141; Lunardoni & Leonardi 1889: 484; Marcu 1941: 403; Mjoberg 1906: 137; Munro 1926: 57; Nosek 1959a: 118, 1959b: 87; Nusslin 1898: 283, 1913: 205, 1927: 346; Perris 1856a: 197; Pfeffer 1942a: 3; Postner 1974: 467; Ratzeburg 1837: 130, 167, 1839: 157, 203; Rhumbler 1922: 329, 1927: 346; Rupertsberger 1880: 232; Schimitschek 1944: 181, 1955a: 137; Schwarz 1891e: 79; Schwerdtfeger 1929: 360, 1944a: 185, 1957a: 190, 1981: 196; Sedlaczek 1935a: 162; Spessivtsev 1913a: 101; Stark 1952: 435; Strohmeyer 1906: 330, 1910b: 89; Tschorbadjiev 1929: 169; Vite 1952a: 106; Wachtl 1876a: 456, 1901: 381; Weber, H. 1926: 580; Wichmann 1927b: 360; Wissman 1846: 25; Wolff & Krausse 1922: 93. (**ds**) Acatay 1960: 12; Acloque 1896; Adeli 1972: 14; Andersch 1851; Androic 1966: 46; Audras & Schaefer 1957; Aulmann 1913: 1–126; Baeta Neves & Goes 1944; Barthe 1896; Bau 1888; Bedel 1888b: 402, 419; Blanchere & Robert 1889; Borchert 1951; Brakman 1966b: 206; Brancsik 1871, 1906; Brandis 1890: 185; Buck 1955b: 191; Bukowsky 1930; Buresh & Lazarov 1956; Calwer 1893; Cecconi 1897, 1903; Charvat 1950; Chorbadzhievo 1924d, 1929; Chrystal 1937; Crotch 1863; Duprez 1938a; Eggers 1904, 1912f; Endrodi 1958a, 1958b, 1981: 185; Ericson & Sandin 1893; Escherich 1923b: 488, 632, 1932b; Fedorov 1930; Fowler 1891; Frennet 1947; Fuchs 1904a, 1905a; Gaubil 1849: 126; Gemminger & Harold 1872: 2685; Gerhardt 1901; Gozis 1875: 80; Gredler 1866: 375; Grill 1895: 311; Grune 1979: 155; Gyorfi 1936: 525, 529, 1941b; Hagedorn 1903a, 1910d: 103; Henschel 1895a: 192; Heyden 1876: 300; Heyden, Reitter, & Weise 1883: 182, 1891: 674, 1906: 713; Hickin 1963; Hoffmann 1936; Holdhaus 1912: 454; Horion 1951; Judeich & Nitsche 1895: 546; Kadyrov 1989; Kaltenbach 1874: 646; Karpinski & Strawinski 1948: 156; Kersten 1933: 75; Kestercanek 1881a: 12; Kleine 1912a: 262, 268, 1913a: 36, 1913b: 161, 1914a: 16, 1932a: 308, 1934a: 173; Kloft & Hinks 1945: 218; Knotek 1892a: 38, 1894a: 559; Koca 1905: 192; Kolbe, W. 1918: 211; Koltze 1901: 154; Koppen 1882: 260; Kostenko 1929; Kraatz 1869: 60; Lacordaire 1866: 351; Langhoffer 1915c: 158; Leclercq 1971; Lentz 1857: 140; Liese 1950: 141; Lomnicki 1913b: 148; Lucht 1987: 280; Luna de Carvalho 1950: 15; Lunardoni & Leonardi 1889: 484; Marcu 1926c: 64; Matthews & Fowler 1883: 42; Murayama 1954b: 177; Negru 1966b: 402, 1968a: 456, 1968c: 91; Novak, P. 1952: 417; Nunberg 1928b: 88, 110, 1954: 62, 1960b: 157; Nusslin 1898: 283; Orest 1926c: 64; Ortzen 1886: 280; Paganetti-Hummler 1901; Perris 1876a: 256, 1877a: 416; Pfeffer 1928b: 2, 7, 1931b: 73, 1989a: 88; Pierce, W. D. 1917: 40; Pittioni 1943: 176; Postner 1974: 467; Prossen 1913: 84; Ragusa 1924: 117; Rapp 1934: 736; Ratzeburg 1837: 130, 167, 1839: 157, 203; Redtenbacher 1858: 835, 1874: 381; Reissig 1949: 131; Reitter 1869b: 155, 1894a: 90, 1916: 294; Roubal 1935b: 73, 1941: 275; Rye 1868: 189; Sainte-Claire 1914: 475; Sainte-Claire & Mequignon 1938: 449; Schaufuss 1915: 1238; Schaum 1859: 96, 1862: 101; Schedl 1961b: 185, 1964a, 1967c: 73, 1971b: 529, 1971d: 427, 1972n: 351, 1980a: 19, 1981d: 94; Schilsky 1909: 189; Schwarz 1891e: 79; Schwerdtfeger 1981: 196; Seidlitz 1872: 396, 1891a: 568, 1891b: 613; Sharp & Fowler 1893: 34; Stark 1927b: 89, 1952: 435; Stein 1868: 114; Stein & Weise 1877: 165; Stierlin 1898: 447; Stierlin & Gautard 1871: 293, 1906: 206; Sturm 1843: 230; Thomson 1865: 369, 1868: 223; Tredl 1907: 18; Tschorbadjiev 1929: 169; Wachtl 1876a: 456; Westhoff 1882: 240; Wichmann 1927a: 70, 1955a: 95, 1957a: 96; Winter, T. G. 1983: 28. (**tx**) Acloque 1896; Bach 1854, 1864; Balachowsky 1949a: 227; Barbey 1901: 28, 108; Bedel 1888b: 402, 419; Bertolini 1872; Brancsik 1871; Charvat 1950; Chorbadzhievo 1924d; Dombrowsky 1887, 1892; Donisthorpe 1940: 157; Duffy 1953; Eggers 1912f: 29; Eichhoff 1864d: 37–38, 1868d: 423, 1878b: 362–363, 382, 1881a: 54, 282, 1883a: 116, 142; Endrodi 1957b; Escherich 1923b: 488, 632; Escherich & Escherich 1897; Fabricius 1801: 382; Fauvel 1889; Ferrant 1911; Ferrari 1867a: 20, 22, 24, 1867b: 114; Fleischer 1927; Formanek 1907: 53; Gabler 1955; Gebien 1907: 197; Girard 1873; Grune 1979: 154–155; Hagedorn 1910a: 153, 1912a, 1913b; Henry 1892: 12; Henschel 1876a: 216, 240, 1895a: 192; Hoffmann 1936: 44–45; Hopkins 1898: 28; Jacquelin du Val & Fairmaire 1868: 107; Judeich & Nitsche 1895: 546; Karpinski & Strawinski 1948: 156; Knotek 1892a: 38;

Kuhnt 1912: 1060; Lacordaire 1866: 381; Letzner 1891: 378; Leunis 1886: 181; Lucht 1987: 280; Lunardoni & Leonardi 1889: 484; Meixner 1937: 1216; Murayama 1954b: 177; Negru 1966b: 402; Nunberg 1954: 62; Perris 1877a: 416; Pfeffer 1932b: 21, 1942a: 3, 1955a: 198; Portevin 1935: 330; Postner 1974: 467; Quaschik 1953: 35; Ratzeburg 1837: 130, 167, 1839: 157, 203; Redtenbacher 1849a: 358, 1849b: 26, 1858: 835, 1874: 381; Reitter 1894a: 90, 1913a: 82, 1916: 294, 1918: 83; Rhumbler 1922: 329, 1927: 346; Roubal 1937: 67–68; Rupertsberger 1880: 232; Schedl 1934f: 1646, 1952f: 88, 1957d: 82, 1980a: 19, 1981b: 94; Schimitschek 1937c: 53–54, 1955c: 86; Seidlitz 1872: 396, 1891a: 568, 1891b: 613; Spessivtsev 1913a: 101–103, 1922a: 478, 1931: 59; Stark 1952: 435; Stierlin 1898: 447; Strohmeyer 1910: 88–91, 1912b: 57; Swaine 1909: 158; Thomson 1865: 369, 1868: 223; Wissman 1846: 25; Wood, S. L. 1977b: 211. (**ms**) Eichhoff 1868d: 423; Escherich 1932b; Schwappach 1924: 59.

flavus Stephens 1830: 356 (*Tomicus*). Holotype, sex?; Norfolk or New-forest; Stephens Collection, not located, preoccupied by Fabricius 1801. Synonymy: Rye 1868: 189.
References: (**tx**) Rye 1868: 189; Stephens 1830: 356.

sampsoni Donisthorpe 1940: 6. Holotype ♀; Richmond Park, London; BMNH, London, preoccupied by Eggers 1930. Synonymy: Blair 1940: 40.
References: (**tx**) Blair 1940: 40; Donisthorpe 1940: 6; Schedl 1951i: 51.

linearis Schedl 1948f: 273. Lectotype ♀; America borealis; USNM, Washington, designated by Wood 1977b: 211. Synonymy: Wood 1977b: 211.
Notes: (1) The type is an obviously mislabeled or intercepted specimen; the species is not established anywhere in America.
References: (**tx**) Schedl 1948f: 273, 1948h: 578, 1979c: 139; Wood, S. L. 1977b: 211.

donisthorpi Schedl 1951i: 51. Holotype ♀; Richmond Park, London; BMNH, London, automatic. Synonymy: Blair 1940: 40.
References: (**tx**) Blair 1940: 40; Schedl 1951i: 51.

***dubiosus* Perkins** 1900: 177. Holotype ♀; Maui: Iao Val.; BMNH, London.
Figures: Samuelson 1981: 56.
Distribution: Hawaiian Islands (Maui, Oahu, Molokai).
Hosts: *Bobea* sp., *Coprosma* sp., *Eugenia sandwicensis*, *Perrottetia sandwicensis*, *Physalis peruviana*, *Pipturus* sp., *Psychotria* sp.
Notes: (3) Samuelson 1981: 70 (described male).
References: (**ds**) Beeson 1938b: 292; Hagedorn 1910d: 103; Kleine 1913b: 161, 1914b: 302; Samuelson 1981: 70. (**tx**) Eggers 1927b; Hagedorn 1910a: 153; Perkins 1900: 177; Samuelson 1981: 56, 70;

***duodecimspinatus* Schedl** 1936g: 531. Lectotype ♀; North-East Papua: Mt. Lamington, 1300–1500 feet; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 85.
Distribution: New Guinea.
Notes: (1) Most references cite this species as *12–spinatus*.
References: (**ds**) Schedl 1936g: 531–532. (**tx**) Schedl 1979c: 85.

***duploarmatus* Browne** 1962c: 204. Holotype ♀; Sarawak: Kuching; BMNH, London.
Distribution: Asia (Malaya), Indonesia (Sarawak in Borneo).
References: (**ds**) Parsons 1963: 114. (**tx**) Browne 1962c: 204.

***eggersi* Beeson** 1930: 215. Holotype ♀; Bengal: Lopchu, Debrepani, Senchal Range, Darjeeling; FRI, Dehra Dun.
Distribution: Asia (Bengal in India).
Hosts: *Litsaea umbrosa*, *Symplocos theaefolia*, *Turpinia hepalensis*.
References: (**cn**) Mathur & Singh 1961a: 64. (**ds**) Beeson 1961: 304; Mathur & Singh 1961a: 64. (**tx**) Beeson 1930: 215–216, 233; Schedl 1950g: 895.

***eichhoffianus* Schedl** 1950h: 110. Syntypes ♀; Madagascar; USNM, Washington, automatic.
Figures: Nunberg 1963b:pl. 13.
Distribution: Africa (Ghana/ Somalia/ South Africa/ Zaire), Madagascar.
Hosts: *Albizzia zygia*, *Ficus exasperata*, *Gossweilerodendron balsamiferum*, *Terminalinus ivorensis*, *Triplochiton scleroxylon*.
References: (**ds**) Alluaud 1900: 438–442; Frappa 1933: 179; Mayne & Donis 1960: 104, 1962: 318; Thompson, G. H. 1963: 71. (**tx**) Schedl 1950h: 110, 1954d: 872, 1954e: 52, 1955c: 30–31, 1955d: 269, 272, 1955f: 259, 1957d: 16, 1977b: 157.

eichhoffi Schaufuss 1891: 25. Syntypes ♀; Madagascar; USNM, Washington, preoccupied by Schreiner 1882.
Notes: Schedl 1979c: 88 (citation of holotype invalid).
References: (**ds**) Alluaud 1900: 440; Hagedorn 1910d: 103; Kleine 1913b: 161, 1914b: 327. (**tx**) Eggers 1920; Hagedorn 1910a: 153, 1913b: 256; Nunberg 1963b: 30, pl. 13; Schaufuss 1891: 25–27; Schedl 1957d: 16, 1979c: 88.

***elevatus* Eggers** 1931a: 21. Holotype ♀; Venezuela (Caracas); MNB, Berlin.
Distribution: Antilles Islands (Puerto Rico), South America (Venezuela).
Notes: (1) Schedl 1979e: 89 (lectotype designation invalid).
References: (**ds**) Blackwelder 1947: 779; Bright 1982b: 165, 1985c: 173. (**tx**) Bright 1985c: 173; Eggers 1931: 21; Schedl 1935d: 92, 1958f: 46, 1979c: 88.

***elongatus* Eggers** 1920: 43. Holotype ♀; Mkulumusiberg bei Sigi (D.-O.-Afrika); Hamburg Museum, lost.

Distribution: Africa (Kenya/ Tanzania/ Zaire).

Hosts: *Drypetes leonensis*, *Maba abyssinica*.

References: (**hb**) Roberts 1969: 132; Schedl 1962j: 287. (**ds**) Browne 1975a: 759; Schedl 1962j: 287. (**tx**) Eggers 1920: 43; Schedl 1957b: 150–151, 158, 1962j: 288.

***emarginatus* Eichhoff** 1878b: 510. Holotype ♀; Hindostan (Birma); Hamburg Museum, lost.

Figures: Nobuchi 1978a:pl. 2, Nunberg 1959a:pl. 20, figs. 1–3, Yin & Huang 1981: 569, Yin, Huang, & Li 1984: 160.

Distribution: Asia (Burma/ Fujian, Shanxi, Sichuan, Xizang [Tibet] in China/ India/ Laos/ Malaya/ Sri Lanka/ Vietnam), Australia, Indonesia (Borneo, Java, Mentawei, Moluccas, Sumatra), New Guinea, Philippine Islands.

Hosts: *Abies fabri*, *Albizzia falcata*, *Balanocarpus heimii*, *Castanea argentea*, *Castanopsis* sp., *Cinchona* sp., *Dipterocarpus baudii*, *Durlo zibethinus*, *Fagraea gigantea*, *Ficus* sp., *Intsia palembanica*, *Koompassia excelsa*, *Mangifera foetida*, *Palaquium* sp., *Pinus tabulaeformis*, *P. yunnanensis*, *Populus* sp., *Quercus* sp., *Sarcocephalus cordatus*, *Shorea leprosula*, *Symplocos* sp.

References: (**bv**) Gray, B. 1974c. (**cn**) Mathur & Singh 1960b: 84, 1961a: 26; Yunus & Hua 1980: 230. (**hb**) Beaver & Browne 1978: 607; Browne 1935a, 1941, 1961c: 152–154; Kalshoven 1959c: 156. (**ds**) Beaver & Browne 1978: 608; Beeson 1961: 304; Browne 1935a, 1961a: 305, 1961c: 152, 1965a: 189, 1968a: 132–133; Choo & Woo 1983; Hagedorn 1907b, 1910d: 103; Kalshoven 1959c: 156; Kleine 1913b: 161, 1914b: 278; Mathur & Singh 1960b: 84, 1961a: 26; Nobuchi 1978a: 22; Ohno, Yoneyama, & Nakazawa 1982a: 4, 1982b: 8, 1987: 94, 1989: 94; Ohno et al. 1987: 88,1988a: 93,1989: 61; Schedl 1936d: 3, 1936g: 528, 1936j: 20, 1960e: 172, 1964c: 305, 1966b: 52, 1966g: 31, 1969a: 208, 1969e: 156, 1971c: 363, 1971f: 148, 1973c: 378, 1975i: 346, 1975j: 294, 1979a: 158, 1979h: 158; Yin & Huang 1981: 569; Yin, Huang, & Li 1984: 160; Yunus & Hua 1980: 230. (**tx**) Eggers 1925: 159, 1929e: 49; Eichhoff 1878a: 392, 1878b: 510; Hagedorn 1907b, 1908, 1910a: 153, 1910b; Kalshoven 1959b: 96; Keler 1928: 30; Nobuchi 1978a:pl. 2, 1983: 302; Nunberg 1959a: 424; Schedl 1939e: 331, 1940b: 435, 1941a: 43, 1942a: 170, 1942d: 6, 1954a: 141, 1954c: 160, 1955h: 45, 1960h: 108, 1965g: 22, 1973e: 93; Wylie & Yule 1977; Yin & Huang 1981: 569; Yin, Huang, & Li 1984: 160.

cinchonae Veen 1897: 135. Syntypes ♀; Java (Preanger?); Colonial Museum at Haarlem and RNH, Leiden. Synonymy: Kalshoven 1959: 96.

References: (**cn**) Kalshoven 1932: 244; Koningsberger 1898: 38; Kleine 1932a: 307. (**hb**) Kleine 1932a: 307. (**ds**) Hagedorn 1910d: 52; Kalshoven 1932: 24, 1959: 96; Kleine 1913b: 127, 1914b: 288, 1932a: 307, 1934a: 176; Koningsberger 1908: 77. (**tx**) Eggers 1923a: 203–204, 1927b: 407, 1927c: 95; Hagedorn 1910a: 104; Kalshoven 1959: 96; Schedl 1942d: 6, 1951i: 44, 83, 1954a: 140; Veen 1897a: 135, 1897b: 18.

cordatus Hagedorn 1910b: 12. Syntypes ♀; Mentawei (Modigliani); MNB, Berlin. Synonymy: Schedl 1942d: 6.

References: (**cn**) Yunus & Hua 1980: 230. (**ds**) Hagedorn 1910d: 100; Kleine 1913b: 160, 1914b: 286; Yunus & Hua 1980: 230. (**tx**) Eggers 1927b: 402, 407, 1929e: 49; Hagedorn 1910a: 153, 1910b: 12; Schedl 1936g: 528, 1942d: 6.

emarginatus semicircularis Schedl 1973e: 92. Holotype ♀; Porotop Lutheran Mission Station, Western Highlands Dist. [New Guinea]; CSIRO, Canberra. Synonymy: Wood 1989: 176.

References: (**tx**) Schedl 1973e: 92, 1979c: 90; Wood, S. L. 1989: 176.

***eurygraphus* (Ratzeburg)** 1837: 168 (*Bostrichus*). Syntypes ♀; presumably Deutschland; not located.

Distribution: Africa (Algeria/ Egypt/ Libya/ Morocco/ Tunisia), Asia (Turkey), Europe (Austria/ Corsica/ France/ Germany/ Greece/ Hungary/ Italy/ Luxemburg/ Netherlands/ Poland/ Spain/ Switzerland/ Yugoslavia).

Hosts: *Pinus* spp., *Quercus* spp., *Ulmus* spp.

References: (**ay**) Bugnion 1887b; Escherich 1923b: 488; Feytaud 1950a; Murayama 1933a: 3; Nusslin 1911a: 60. (**bv**) Grune 1979: 153. (**cn**) Anonymous 1977r, 1986: 41; Barbey 1925: 261; Escherich 1923b: 488; Falck 1916: 170; Feytaud 1946, 1950a, 1950b; Grandi 1951; Hubault 1945; Judeich & Nitsche 1895: 546; Kholodkovskii 1912: 320; Mumford 1964: 11; Nusslin 1913: 286; Pfeffer 1933: 43; Pierce, W. D. 1917: 75; Ratzeburg 1871c: 81; Rhumbler 1922: 329, 1927: 345; Rudnev 1965b; Sargos 1947: 8; Schimitschek 1944: 180, 1955c: 85; Strohmeyer 1906b: 334; Wachtl 1901: 381; Wichmann 1927b: 352. (**ec**) Apfelbeck 1916b; Kleine 1908c: 219; Kostenko 1929; Novak, P. 1952: 417; Nusslin 1927: 345; Perris 1852: 503, 1856a: 194; Pfeffer 1928b: 6, 1933: 43, 1943b: 181; Pfeffer & Prihoda 1950: 3; Schedl 1958d: 188, 1966f: 90; Speyer 1937: 30; Vite 1952a: 107. (**hb**) Altum 1881c: 322; Apfelbeck 1916b, 1917; Baeta Neves 1943a; Baeta Neves & Goes 1944; Barbey 1901: 27, 105, 1925: 261; Bugnion 1887b; Bukowsky 1930; Chararas 1962c: 323; Dombrowsky 1887, 1892; Duprez 1944; Eichhoff 1881a: 53, 277; Escherich 1923b: 488; Falck 1916: 170; Feytaud 1946: 7, 1950a; Girard 1873; Grandi 1951; Gyorfi 1957; Henschel 1895a: 192; Judeich & Nitsche 1895: 546; Karpinski & Strawinski 1948: 156; Kholodkovskii 1912: 320; Knotek

1894a: 559, 1896: 150; Mjoberg 1906: 142; Nusslin 1913: 286, 1927: 345; Perris 1852: 503, 1856a: 194; Peyerimhoff 1919: 257; Pfeffer 1941b: 37, 1942a: 3; Postner 1974: 464 Ratzeburg 1837: 168, 1839: 157, 1871c: 81; Rhumbler 1922: 329, 1927: 345; Rupertsberger 1879: 231, 1880: 232; Schimitschek 1944: 180; Spessivtsev 1913a: 100; Speyer 1937: 30; Stark 1926a: 330, 336, 1952: 433; Strohmeyer 1906b: 334; Vite 1952a: 107; Wachtl 1876a: 455, 1901: 381; Wichmann 1927b: 352. (**ds**) Acloque 1896; Baeta Neves & Goes 1944; Barthe 1896; Blanchere & Robert 1889; Bouwer 1960; Brakman 1966b: 402; Brancsik 1906; Bukowsky 1930; Calwer 1884, 1893; Choo, Woo, & Nobuchi 1988a: 134; Duprez 1938a; Endrodi 1958b; Escalera 1919; Escherich 1923b: 488, 1932b; Eyquem 1891; Friederichs 1919; Fuchs 1905a; Gaubil 1849: 126; Gemminger & Harold 1872: 2685; Georghiou 1977: 75; Gozis 1875: 80; Grune 1979: 153; Hagedorn 1910d: 103; Hallett 1923b: 13–14; Henschel 1895a: 192; Heyden, Reitter, & Weise 1883: 182, 1891: 674, 1906: 713; Hoffmann 1936; Horion 1951; Jazentkovsky 1912: 292; Judeich & Nitsche 1895: 546; Karpinski & Strawinski 1948: 156; Kestercanek 1881a: 12; Kleine 1913a: 36, 1913b: 161, 1934a: 173; Knotek 1892a: 38, 1894a: 559; Kostenko 1929; Kraatz 1869: 60; Lacordaire 1866: 381; Langhoffer 1915c: 158; Larroche & Torossian 1971; Leder 1871: 132; Lomnicki 1913b: 148; Lucht 1987: 279; Luna de Carvalho 1950: 15; Mequignon 1936: 15, 42; Mirzoian 1950: 139; Mumford 1964: 11; Negru 1966b: 402; Novak, P. 1952: 417, 1964; Nunberg 1928b: 88, 109, 1954: 62; Perris 1876a: 255, 1877a: 415; Peyerimhoff 1919: 257, 1933b: 367; Pfeffer 1928b: 6, 1930b: 120, 1931b: 74, 1933: 3–54, 1947e: 14, 1989a: 87; Pierce, W. D. 1917: 75; Pittioni 1943: 176; Pjatnitskii 1930a: 165; Postner 1974: 464; Prossen 1913: 84; Rapp 1934: 735; Ratzeburg 1837: 168, 1839: 157; Redtenbacher 1858: 835, 1874: 381; Reitter 1894a: 89, 1916: 294; Roubal 1941: 275; Rudnev 1965b; Saint-Albin 1949: 2; Sainte-Claire 1914: 475; Sainte-Claire & Mequignon 1938: 449; Schaufuss 1915: 1237; Schaum 1859: 96, 1862: 101; Schedl 1959h: 100, 1961b: 185, 1966f: 87, 1967c: 73, 1971d: 426, 1980a: 20, 1981b: 93; Scheerpeltz & Winkler 1930: 258; Schilsky 1909: 189; Schneider & Leder 1977: 55; Seidlitz 1872: 396, 1891a: 567, 1891b: 613; Stark 1926a: 330, 336, 1926b: 104, 1926g: 154, 1952: 433; Stein 1868: 114; Stein & Weise 1877: 165; Strauch 1861: 122; Sturm 1843: 230; Tredl 1907: 18; Wachtl 1876a: 455; Wichmann 1927a: 69. (**tx**) Acloque 1896; Bach 1854; Balachowsky 1949a: 225; Barbey 1901: 27, 105; Bertolini 1872; Dombrowsky 1887, 1892; Eggers 1923a: 197–201, 1930d: 206; Eichhoff 1864b: 37–38, 1878b: 355, 1881a: 53, 277, 1883a: 116, 141; Endrodi 1957b; Escherich 1923b: 488; Fauvel 1889; Ferrari 1867a: 20, 1867b: 414; Fleischer 1927; Girard 1873; Grune 1979: 152; Hagedorn 1910a: 153; Henschel 1895a: 192; Hoffmann 1936: 43–45; Iablokoff-Khnzorian 1961: 105; Jacquelin du Val & Fairmaire 1868: 107, 109; Judeich & Nitsche 1895: 546; Karpinski & Strawinski 1948: 156; Knotek 1892a: 38; Lacordaire 1866: 381; Letzner 1891: 377; Lucht 1987: 279; Murayama 1933a: 3, 1933b: 19, 27; Negru 1966b: 402; Nunberg 1954: 62; Nusslin 1911a: 60; Perris 1877a: 415; Pfeffer 1932b: 20, 1941b: 3, 7, 1942a: 3, 1947e: 14, 1955a: 196, 1989a:pl. 8; Portevin 1935: 329; Postner 1974: 464; Quaschik 1953: 35; Ratzeburg 1837: 168, 1839: 157; Redtenbacher 1849a: 791, 1849b: 26, 1858: 835, 1874: 381; Reitter 1894a: 89, 1913a: 81, 1916: 294; Rhumbler 1922: 329, 1927: 345; Rupertsberger 1879: 231, 1880: 232; Schedl 1934f: 1646, 1957d: 82, 1980a: 20, 1981b: 93; Schimitschek 1937: 54, 1955c: 85; Seidlitz 1872: 396, 1891a: 567, 1891b: 613; Spessivtsev 1913a: 99–100, 1922a: 477, 1931: 57–58; Stark 1952: 433. (**ms**) Escherich 1932b; Schimitschek 1930b: 407.

***exaratus* Blandford** 1898b: 206. Holotype ♂; Bugaba, Chiriqui, Panama; BMNH, London.
Distribution: North America (Panama).
References: (**ds**) Blackwelder 1947: 779; Hagedorn 1910d: 104; Kleine 1914b: 371. (**tx**) Blandford 1898b: 206; Hagedorn 1910a: 153; Wood, S. L. 1982b: 841.

***excavus* Schedl** 1964g: 249. Holotype ♀; Sarawak, Setapok; BMNH, London.
Distribution: Indonesia (Sarawak in Borneo).
Hosts: *Shorea* sp.
References: (**tx**) Schedl 1964g: 249, 1979c: 93.

***exesus* Blandford** 1894d: 119. Syntypes 2 ♀; Miyanoshita [Japan]; BMNH, London.
Figures: Nakane et al. 1963:pl. 192, Nunberg 1978: 112.
Distribution: Asia (Fujian in China/ Japan/ Taiwan).
Hosts: *Passenia cuspidata*, *Quercus* sp.
Notes: (1) Schedl 1973e: 92 (a synonym of *emarginatus* Eichhoff [requires confirmation]).
References: (**en**) Anonymous 1980g. (**ds**) Anonymous 1980g; Blandford 1894c; Hagedorn 1910d: 104; Kleine 1913b: 161, 1914b: 260; Murayama 1936a: 132, 1949c: 103, 1954b: 177, 1955: 100; Nakane et al. 1963: 383; Nobuchi 1985c: 24. (**tx**) Blandford 1894d: 119; Eggers 1923a: 204, 1927c: 95; Hagedorn 1910a: 154; Murayama 1934c: 299, 1936a: 132, 1954b: 177, 1955: 99–100; Nakane et al. 1963: 383; Nunberg 1978: 111–112; Schedl 1934f: 1646, 1953e: 22, 1954c: 160.

***eximius* Schedl** 1970b: 362. Holotype ♀; Borneo (Kalimantan), Samarinda to Myako (Japan), imported; PPST, Tokyo.
Figures: Nobuchi 1978a:pl. 4.
Distribution: Indonesia (Borneo).
Hosts: *Agathis borneensis*.
References: (**ds**) Nobuchi 1978a: 37. (**tx**) Nobuchi

1978a:pl. 4, 1983: 302; Schedl 1970b: 362–363, 1979c: 94.

apicenotatus Schedl 1971c: 377. Holotype ♀; Sarawak, Bintulu; BMNH, London. Synonymy: Wood 1989: 176.

References: (**ds**) Schedl 1971c: 377, 1972a: 144; Wood, S. L. 1989: 176.

***exsectus* Perkins** 1900: 179. Lectotype ♂; Maui: Haleakala; BMNH, London, designated by Samuelson 1981: 71.

Figures: Samuelson 1981: 63.

Distribution: Hawaiian Islands (Maui).

References: (**ds**) Beeson 1938b: 292; Hagedorn 1910d: 104; Kleine 1913b: 161, 1914b: 302; Samuelson 1981: 72. (**tx**) Hagedorn 1910a: 154; Perkins 1900: 179; Samuelson 1981: 63, 72.

***falcarius* Schedl** 1942c: 183. Holotype ♀; Neu-Guinea; Schedl Collection in NHMW, Wien.

Distribution: New Guinea.

References: (**tx**) Schedl 1942a: 197, 1942c: 183, 1979c: 94.

***fallax* Eichhoff** 1878b: 508. Holotype ♀; Hindostan (Birma); IRSNB, Brussels.

Figures: Nobuchi 1978a:pl. 2, Nunberg 1959a:pl. 15, figs. 3–5.

Distribution: Asia (Burma/ Assam in India/ Malaya/ Nepal/ Vietnam), Indonesia (Borneo, Java, Mentawei, Sumatra), New Guinea, Philippine Islands (Luzon).

Hosts: *Achras sapota*, *Artocarpus elasticus*, *Butea monosperma*, *Castanea argentea*, *Castanopsis tribuloides*, *Dialium* sp., *Dipterocarpus* spp., *Fagraea gigantea*, *Intsia palembanica*, *Koompassia excelsa*, *K. malaccensis*, *Kydia calycina*, *Mesua ferrea*, *Shorea* spp., *Swintonia floribunda*, *Tectona grandis*, *Turpinia pomifera*, *Xanthophyllum* sp., *Xylia dolabriformis*, *X. xylocarpa*.

References: (**cn**) Browne 1949e; Kleine 1932a: 307; Mathur & Singh 1960b: 84, 1961a: 40, 1961b: 14; Pierce, W. D. 1917: 193; Stebbing 1914: 582; Yunus & Hua 1980: 230. (**ec**) Beeson 1923; Browne 1958b; Stebbing 1914: 582. (**hb**) Beeson 1916a: 221, 1923; Browne 1935a, 1941, 1958b, 1961c: 155–156; Kleine 1932a: 307; Stebbing 1914: 582. (**ds**) Beeson 1916a: 1–5, 1923, 1930: 58, 83, 234, 1961: 304; Bhasin, Roonwal, & Singh 1958; Browne 1935a, 1961a: 305, 1961c: 155, 1965a: 189, 1980d: 491, 1983a: 556, 1985a: 90; Garthwaite 1940: 94–106; Hagedorn 1910a: 104; Kleine 1913b: 161, 1914b: 278, 1932a: 307; Mathur & Singh 1960b: 81, 1961a: 40, 1961b: 14; Nobuchi 1978a: 22; Ohno, Yoneyama, & Nakazawa 1982a: 4, 1982b: 8, 1987: 94; Ohno et al. 1987: 88, 1988a: 93, 1989: 61; Pierce, W. D. 1917: 193; Schedl 1936d: 3, 1964c: 304, 1965g: 24, 1966b: 53, 1971c: 364, 1971f: 148, 1973b: 211, 1973c: 378, 1975i: 346, 1979a: 160; Yunus & Hua 1980: 230. (**tx**) Beeson 1930: 58, 83, 234; Eggers 1923a: 203, 208, 1925: 153, 1927b: 402, 407, 1927e, 1930d; Eichhoff 1878a: 392, 1878b: 508; Hagedorn 1910a: 154, 1910b; Nobuchi 1978a:pl. 2, 1983: 302; Nunberg 1978: 112, 114; Schedl 1934g: 178, 1937e: 544, 1940b: 435, 1951i: 45, 1954a: 141, 1954c: 156, 1970i: 224; Stebbing 1914: 582.

amphicranulus Eggers 1923a: 204. Syntypes ♀; Sumatra (Si Rambe, Bandar Baroe), Engano, Mentawei; MCG, Genova, and Eggers Collection (USNM, Washington or NHMW, Wien?). Synonymy: Wood 1989: 176.

References: (**hb**) Browne 1941; Kalshoven 1958a: 187, 1959c: 156. (**ds**) Beeson 1961: 302; Kalshoven 1958a: 187, 1959c: 156; Nobuchi 1978a: 21; Schedl 1964c: 305, 1965g: 24, 1967e: 215, 1969a: 208. (**tx**) Eggers 1923a: 204, 1925: 153; Nunberg 1959a: 414; Schedl 1939e: 331, 1942d: 6, 42, 1951i: 44, 1954a: 140, 1954c: 156, 1965g: 24, 1970i: 224, 1979c: 19.

***fallaxoides* Schedl** 1955b: 302. Holotype ♀; Samoa; Schedl Collection in NHMW, Wien.

Distribution: Samoan Islands.

References: (**ds**) Schedl 1972b: 267. (**tx**) Schedl 1955b: 287, 302, 1979c: 95.

***falsus* Schedl** 1966f: 116. Holotype ♀; Venezuela, by Moritz [presumably Colonia Tovar]; Schedl Collection in NHMW, Wien.

Distribution: South America (Venezuela).

References: (**tx**) Schedl 1966f: 116, 1979c: 95.

***fastigatus* Schedl** 1935b: 402. Lectotype ♀; Acc. No. 195, Sch. of For., Univ. P.I.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 95.

Figures: Nobuchi 1978a:pl. 2.

Distribution: Asia (Malaya), New Guinea, Philippine Islands.

Hosts: Lauan.

References: (**ds**) Beaver & Browne 1978: 608; Nobuchi 1978a: 20; Nunberg 1961b: 610; Ohno et al. 1987: 88; Schedl 1966b: 54, 1966g: 32. (**tx**) Nobuchi 1978a:pl. 2, 1983: 302; Schedl 1935b: 402, 1940b: 435, 1979c: 95.

***ferox* Blandford** 1898b: 201. Holotype ♀; Bugaba, Chiriqui, Panama; BMNH, London.

Figures: Blandford 1898b:pl. 7, fig. 14, Terra 1987: 24.

Distribution: North America (Costa Rica/ Panama), South America (Colombia).

Hosts: *Coffea arabica*, *Ochroma* sp., *Theobroma cacao*.

References: (**hb**) Wood, S. L. 1982b: 800. (**ds**) Blackwelder 1947: 779; Hagedorn 1910d: 104; Kleine 1913b: 161; Wood, S. L. 1982b: 800. (**tx**) Blandford 1898b: 201; Eggers 1940c: 238; Hagedorn 1910a: 154; Terra 1987: 22, 24; Wood, S. L. 1982b: 800.

***ferrugineus* (Fabricius)** 1801: 388 (*Bostrichus*). Lectotype ♀; America meridionali; UZMC, Copenhagen, designated by Wood 1982b: 827.

Figures: Bright 1972d: 95, 1976d: 132, Nobuchi

1978a: pl. 4, Samuelson 1981: 56, Schedl 1962j: 425, 1977b: 185, Wood 1960a: 65.

Distribution: Africa (introduced: Angola/ Grande Comore in Azores Islands/ Botswana/ Burkina Faso/ Burundi/ Cameroon/ Cape Verde Islands/ Congo/ Ethiopia/ Equatorial Guinea/ Fernando Poo/ Gabon/ Ghana/ Guinea/ Ivory Coast/ Kenya/ Liberia/ Malawi/ Mauritania/ Mozambique/ Namibia/ Nigeria/ Ruanda/ Senegal/ Seychelles Islands/ Sierra Leon/ Somalia/ South Africa/ Sudan/ Tanzania/ Togo/ Uganda/ Zaire/ Zambia/ Zimbabwe), Antilles Islands (Bahama Islands/ Cuba/ Guadeloupe/ Dominican Republic, Haiti in Hispanola/ Jamaica/ Puerto Rico/ Trinidad), Australia, Cook Islands, Fiji Islands, Hawaiian Islands, Madagascar, Marquesas Islands, Micronesia (Guam), New Caledonia, New Guinea, Niue Island, North America (Belize/ Isla del Coco/ Costa Rica/ El Salvador/ Guatemala/ Honduras/ all states in Mexico/ Nicaragua/ Panama/ Alabama, Arizona, Arkansas, District of Columbia, Florida, Georgia, Illinois, Indiana, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Mississippi, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, West Virginia in USA), Reunion Island, Samoan Islands, South America (Argentina/ Bolivia/ Brazil/ Cayenne/ Chile/ Colombia/ Ecuador/ Galapagos Islands/ Guyana/ Paraguay/ Peru/ Suriname/ Uruguay/ Venezuela), Tahiti Islands.

Hosts: Many reported by Schedl 1962j: 446–454, Wood 1982b: 829.

Notes: (3) Schedl 1962j: 426 (cites *conformis* Koll., *biuncus* Schedl, *obtusipennis* Eggers in synonymy, nomen nudums, no status.

References: (**ay**) Abrahamson 1969b; Abrahamson & Norris 1970: 177–180; Anonymous 1971l; Baker, J. M. & Norris 1968: 246–250; Beeman & Norris 1977a, 1977b; Bridges 1975b; Bridges & Norris 1977; Chu 1978b; Chu & Norris 1976, 1979; Chu, Norris, & Carlson 1975; Chu, Norris, & Kok 1970: 1379–1387; Chu, Norris, & Rao 1980, 1982; Entwistle 1963b; Kingsolver & Norris 1977a, 1977b, 1977d; Kok 1971b; Lhoste & Roche 1960; Norris 1972; Norris & Baker 1967: 1120–1122, 1968: 1473–1475, 1969: 592–594; Norris, Baker, & Chu 1969: 413–414; Norris & Chu 1970: 1142–1145, 1971; Norris, Chu, & Rac 1983; Norris & Moore 1980; Peleg & Norris 1972a, 1973a, 1973b; Rao, K. D. P., Norris, & Chu 1982; Saunders, J. L. & Knoke 1967a; Schneider 1976. (**bv**) Atkinson, Foltz, & Connor 1988; Dixon & Payne 1979b; Entwistle 1963b; Goldman, Cleveland, & Parker 1978; Kingsolver & Norris 1977c; MacGowan, J. B. 1973b; McLean & Borden 1977: 684; Moeck 1970b: 993; Roling & Kearby 1975b, 1977; Saunders, J. & Knoke 1968; Schedl 1960f: 53; Turnbow & Franklin 1980. (**cn**) Anonymous 1953j: 25, 1970c: 14, 1970h, 1977k; Beaver 1988a: 65; Blackman 1950: 307, 341, 349; Blandford 1892b; Browne 1968: 714; Cranham 1961b, 1961c: 26; Dinther 1950: 112, 1961; Equihua-Martinez 1988; Estrada & Atkinson 1988: 207; Ferreira & Morin 1985; Gagne & Kearby 1979: 300; Ghesquiere 1933a: 27–36, 1933b: 777–786; Hamlen & Woodruff 1975; Hill, D. S. 1983: 496; Iton 1960: 461; Kudler 1978; Kumar & Youdeowei 1983: 189; Lepesme 1947: 647; MacGowan, J. B. 1973b; Maramorosch et al. 1972; Mead 1973b: 2; Roberts 1961a: 42; Roling & Kearby 1973, 1977; Santoro 1957: 25; Saunders, J., Knoke, & Norris 1967: 79–82; Williams, J. O. 1988; Wolcott 1933: 373, 1948: 383; Wood, S. L. 1977a: 73; Woodruff & Hamlen 1974; Yunus & Hua 1980: 230. (**ec**) Abrahamson 1969b; Abrahamson & Norris 1970; Anonymous 1953j: 25; Baker, J. M. & Norris 1968; Batra 1979; Dixon & Payne 1979b; Equihua & Atkinson 1986: 629; Iton 1960: 461; Kingsolver & Norris 1977c, 1977d; Kok 1971b; Kok & Norris 1972a, 1972c, 1973; Kok, Norris, & Chu 1970; Kumar & Youdeowei 1983: 109; Maramorosch et al. 1972; Naundorf 1956: 35; Naundorf et al. 1956: 30; Norris 1972, 1979; Norris & Baker 1967, 1968; Peleg & Norris 1972a, 1972b, 1973b; Roberts 1969: 132; Roling & Kearby 1977; Saunders, J. & Knoke 1967a: 462–463, 1967b: 1094–1096, 1968: 587–590; Schedl 1958d: 189, 1962j: 425; Schimitschek 1964c; Schneider 1976; Singh 1977: 105; Walt, Scott, & Van Der Klift 1971a: 456, 1971b: 463; Watson 1970: 1054; Wichmann 1955a: 97; Woodruff & Hamlen 1974. (**hb**) Anonymous 1959i: 18; Atkinson, Foltz, & Connor 1988; Baker, W. L. 1972: 270; Beaver 1976a: 24, 1988a: 65; Beaver & Loeyttyniemi 1985a: 74; Beeman & Norris 1977a, 1977b; Blandford 1892b; Bright 1976d: 136; Browne 1963a: 241, 1968: 714; Burgos & Saucedo 1983: 98, Chamberlin 1925: 31; Deyrup & Atkinson 1987a: 65; Drooz 1985: 373; Entwistle 1963b; Equihua & Atkinson 1986: 629; Ferreira & Morin 1985; Frappa 1933: 179; Froggatt 1927: 58; Goldman, Cleveland, & Parker 1978; Hagedorn 1905a: 412, 1907a: 261, 1907b: 111, 1913: 15–22; Hill, D. S. 1983: 496; Jones, Roberts, & Baker 1959: 13–36; Kalshoven 1963; Kingsolver & Norris 1977b; Lesne 1907: 1235; Loyttyniemi, Beaver, & Loyttyniemi 1984; Norris et al. 1968: 852; Norris & Baker 1967; Ostmark 1968; Peleg & Norris 1972a, 1972b; Pollet 1977; Roberts 1961a; Roling & Kearby 1973; Saunders, J. & Knoke 1967a, 1968; Saunders, J., Norris, & Knoke 1967: 419; Schedl 1962j: 425; Schedl, W. 1962: 368; Steinhausen 1956: 48–57; Sukartana 1988; Thompson, G. H. 1963: 71; Webb & Jones 1957: 25–43; Wiebes 1962; Wood, S. L. 1982b: 827; Woodruff & Hamlen 1974. (**ds**) Alluaud 1900: 440; Anonymous 1970c: 14, 1970h, 1970v, 1977k; Atkinson & Equihua 1986a: 421; Atkinson et al. 1986: 62, 1991: 160; Aulmann 1911: 438–441, 1912: 34–37, 44–48; Baker, W. L. 1972: 270;

Beaver 1976a: 24, 1987b: 65, 1988a: 65; Beaver & Loeyttyniemi 1985a: 74; Beaver & Maddison 1990: 1372–1373; Blackwelder 1947: 779; Bright 1968b: 1312, 1972d: 81, 1976d: 136, 1982a: 128, 1985c: 173; Brimblecombe 1953: 28; Browne 1962b: 47–55, 1963a: 241, 1966: 254, 1968: 714–715, 1972b: 20, 1973a: 281, 1974a: 65, 1975a: 759, 1975b: 395; Bruch 1914: 429; Burgos & Saucedo 1983: 98; Cachan 1957: 42–53; Candeze 1861; Cola 1971, 1973; Costa Lima 1956: 292; Cranham 1961a: 30; Dejean 1837: 332; Deyrup 1981b: 7; Deyrup & Atkinson 1987a: 65; Drooz 1985: 373; Equihua & Atkinson 1986: 629; Estrada & Atkinson 1988: 207; Fauvel 1897: 66; Ferreira 1965: 1122; Ferreira & Morin 1985; Fleutiaux & Salle 1889: 457; Frost 1964: 144; Gangliumi 1966: 59, 80, 199, 231; Gardner 1957a: 33; Gemminger & Harold 1872: 2685; Gibson & Carillo 1959: 141; Hagedorn 1910d: 104; Hargreaves 1937: 510; Hill, D. S. 1983: 496, 1987: 341; Hubbard & Schwarz 1878: 666; Kalshoven 1963: 236; Kirk 1969, 1970; Kleine 1913b: 161, 1914b: 378, 1928: 307, 1931: 192; Kok & Norris 1972a, 1972b, 1972c, 1973; Kok, Norris, & Chu 1970: 661–662; Kolbe 1897: 15, 283, 1910: 41; Lacordaire 1866: 383; Lara & Shenefelt 1965: 169–177; Lee 1971: 31; Leng & Mutchler 1917: 220; Mayne & Donis 1951: 335, 1960: 104, 1962: 318; Menier 1973a; Nobuchi 1978a: 38; Norris 1976; Nunberg 1956: 144, 1958: 481, 1959a: 432, 437, 1960: 294, 1961: 330, 1963c: 98; Ohno, Yoneyama, & Nakazawa 1982b: 8, 1987: 94; Ohno et al. 1987: 88, 1988a: 93, 1989: 62; Okker 1962: 56; Ostmark 1968; Pedrosa-Macedo & Schonherr 1985: 29; Pollet 1977; Roberts 1960: 35–38, 1961: 39–43, 1977a: 256; Schedl 1938d: 451, 1938h: 463, 1938i: 28, 1939a: 363, 1940c: 208, 1941f: 116, 1942b: 148–149, 1943d: 68, 1948d: 37, 1948f: 280, 1950h: 105, 1950i: 146, 1951b: 376, 1951e: 39, 1951k: 139, 1951m: 72, 1952j: 5, 1953d: 71, 1955c: 31, 1955d: 269, 1957b: 150, 1958d: 189, 1958f: 35, 1958i: 215, 1959p: 20, 1960a: 75–76, 1960f: 40, 1960h: 8, 1961a: 530, 1961d: 178, 1961j: 349, 1962h: 60–65, 1962i: 72, 1962j: 425, 1962k: 1100, 1962m: 64, 1962p: 209, 1962r: 96, 1963a: 31, 1963c: 160, 1963f: 58, 1964f: 618, 1964j: 42, 1965e: 354, 1965g: 21, 25, 1966a: 276, 1966c: 227, 1966e: 43, 1966f: 76–95, 1966g: 29, 37, 1967d: 3, 1967e: 216, 1968b: 145, 1969a: 207, 1969d: 4, 6, 12, 1970d: 233, 1970e: 83, 1970f: 582, 1971b: 266, 1971c: 362, 1971e: 1, 1971f: 148, 1971g: 193, 1972d: 152, 1972e: 283, 1972g: 38, 1972k: 296, 1973a: 368, 1973d: 158, 1974e: 52, 1975h: 350, 1975k: 277, 1976a: 54, 1977c: 394, 1977d: 279, 1977e: 43, 1978d: 73, 1979b: 416, 1979e: 58, 1980b: 184, 1982: 279; Schimitschek 1964: 178; Schmitz 1898: 157; Schneider & Farrier 1969: 412; Schonherr & Pedrosa-Macedo 1981: 55; Schreiner 1882: 248; Spahr 1981; Swezey 1941: 123, 1954: 38–216; Szent-Ivany 1963: 42, 1964: 89; Terra 1987: 25; Thatcher 1960: 17; Thompson, G. H. 1963: 71; Tucker 1952: 347; Turnbow & Franklin 1980; Urich 1915: 200; Wichmann 1954: 503–521, 1955a: 97; Wolcott 1948: 383; Wood, S. L. 1957c: 403, 1957e: 1273, 1960a: 51, 1961c: 2, 1977a: 73, 1982b: 827; Woodruff & Hamlen 1974; Yunus & Hua 1980: 230; Yust & Cavallos 1955: 432–436. (**tx**) Beal & Massey 1945: 152–171; Beeson 1929: 245–247, 1935: 108, 1938: 291, 1940: 201; Blackman 1922b: 117–119; Blandford 1892b, 1893c: 7–12, 1894d: 118, 1896b: 226, 1898b: 197, 217–218; Blatchley & Leng 1916: 616–622; Bright 1968b: 1312, 1972d: 81, 95, 1976d: 132, 136, 1985c: 173; Browne 1955: 355, 1962b; Chamberlin 1939: 451–456; Eggers 1920: 125, 1923a: 179, 1929e: 42, 1933b: 3, 1934: 83–84, 1940a: 108, 1941a: 107, 1943a: 387; Eichhoff 1868c: 146, 1878b: 384–388; Erichson 1836: 63; Fabricius 1801: 388; Ferrari 1867a: 23–24, 1867b: 107, 1868: 253; Gerstaecker 1871: 76, 1873; Hagedorn 1910a: 152–154, 1910b: 8; Hopkins 1915b: 62, 67, 1915c: 218; Kirsch 1875: 284; Lacordaire 1866: 383; LeConte 1868: 160, 1876: 359–360; Nobuchi 1978a:pl. 4, 1983: 302; Nunberg 1962: 223–237, 1963: 358, 1968: 272; Pedrosa-Macedo & Schonherr 1985: 29; Perkins 1900: 173, 177; Powell, W. 1980: 29; Sampson 1914: 387, 1923: 287, 1925: 3; Samuelson 1981: 56; Schaufuss 1897a: 210, 1897b: 103, 1905: 8; Schedl 1931: 345–346. 1939a: 468, 1939g: 170, 1939j: 565, 1941d: 381, 1950c: 205, 1950d: 9, 13, 15, 1950e: 212, 1951g: 1103, 1951h: 285–287, 1952a: 444, 1952g: 52–53, 1953g: 242, 1954d: 872, 1954e: 52, 1955c: 31, 1955d: 269, 271, 1955f: 259, 1955i: 212, 1957b: 151, 1957c: 325, 1957d: 15–16, 84, 1958c: 1, 1958i: 215, 1960h: 11, 1961c: 8, 1962j: 425–458, 1962k: 245, 1963j: 482, 1972d: 152, 1977b: 185; Schwarz 1878: 468, 1885: 40, 1892: 78–79, 1896: 16; Swaine 1909: 154; Terra 1987: 25; Wood, S. L. 1957c: 403, 1960a: 51, 65–66, 1982b: 827; Zimmermann 1868: 145.

trypanaeoides Wollaston 1867: 114 (*Tomicus*). Syntypes ♀; S. Iago, et Fogo, Cape Verde Islands; BMNH, London. Synonymy: Browne 1955: 355, Schedl 1960h: 9.

References: (**ds**) Beeson 1938: 291; Blackwelder 1947: 780. (**tx**) Browne 1955: 355; Eggers 1929e: 48; Schedl 1960h: 9; Wollaston 1867: 114.

fuscatus Eichhoff 1868a: 400. Holotype ♀; Carolina, Columbia; Hamburg Museum, lost. Synonymy: Schedl 1960h: 8.

References: (**ay**) Hopkins 1894g. (**cn**) Blackman 1950; Chamberlin 1924, 1939: 453–454; Cleare 1924: 65–68; Davis 1895; Doane et al. 1936; Felt 1906: 752; Hubbard 1897b: 21; Kleine 1932a: 307; Packard 1890: 93; Smith, J. B. 1900: 363; Swaine 1918a: 127–128. (**ec**) Chamberlin 1939: 453–454; Felt 1906: 752; Steinhaus 1946: 404. (**hb**) Beal & Massey 1945: 155–156; Blackman 1922b, 1950; Chamberlin 1939: 453–454; Chittenden 1890; Doane et al.

1936; Felt 1906: 752; Hopkins 1894g; Hubbard 1897b: 21–22; Kleine 1932a: 307; Packard 1890: 93; Pierce, W. D. 1907: 291; Schwarz 1891e: 78, 1894a: 16; Swabey 1935: 6; Swaine 1918a: 127–128. (**ds**) Anonymous 1926c: 520; Beal & Massey 1945: 155–156; Beeson 1935a, 1935b: 108, 1938b: 292; Bielz 1851; Blackman 1922b, 1950; Blackwelder 1947: 779; Blandford 1898b; Blatchley & Leng 1916: 622; Chamberlin 1939: 453–454; Chittenden 1890; Ferrer 1942; Fleutiaux & Salle 1890: 457; Gemminger & Harold 1872: 2685; Hagedorn 1910d: 104; Henshaw 1885: 148; Hoffmann 1940: 61, 1942: 13; Hopkins 1893a: 135, 1893b: 210; Hubbard & Schwarz 1898a: 666; Kleine 1913b: 161, 1914b: 343, 372, 386, 1932a: 307, 1934a: 173; Leng 1920: 342; Leonard 1928: 520; Martorell 1945: 471–472; Nunberg 1952: 20, 27, 1965b: 20, 1971: 58, 1972b: 198; Schwarz 1878d: 468, 1886: 40, 1890: 87, 1891e: 78, 1894: 16; Smith, J. B. 1900: 363, 1910: 402; Swabey 1935: 6; Swaine 1909: 154. (**tx**) Beal & Massey 1945: 155–156; Beeson 1929: 246–247, 1935a, 1935b: 108; Blackman 1922b: 116–119; Blandford 1898b: 197, 217; Blatchley & Leng 1916: 622; Chamberlin 1939: 453–454; Eggers 1932b: 303; Eichhoff 1868a: 400, 1878b: 386; Hagedorn 1910a: 154; Hopkins 1915b: 62, 67; Hubbard 1897b: 21; LeConte 1868: 160, 1876: 359–360, 1878a: 468; Nunberg 1952: 20, 27, 1963: 353, 1964: 20, 1965b: 27, pl. 2, 1971: 64, 66; Schedl 1940a: 367–368, 1960h: 8; Schwarz 1886: 40; Swaine 1909: 154, 1918a: 127–128; Wood, S. L. 1957c: 403, 1960a: 51, 64; Zimmermann 1868: 145.

impressus Eichhoff 1868a: 400. Syntypes ♀; Amer. bor. (Massachusetts); Hamburg Museum, lost. Synonymy: Schedl 1960h: 8.

References: (**cn**) Swaine 1918a: 127–128. (**hb**) Chamberlin 1939: 453; Ostmark 1968; Swaine 1918a: 127–128. (**ds**) Blatchley & Leng 1916: 622; Chamberlin 1925, 1939: 453; Gemminger & Harold 1875: 2686; Hagedorn 1910d: 105; Henshaw 1885: 148; Kleine 1913b: 161, 1914b: 392; Leng 1920: 342; Ostmark 1968; Packard 1890: 718; Swaine 1909: 154. (**tx**) Blatchley & Leng 1916: 622; Chamberlin 1939: 453; Eichhoff 1868a: 400, 1878b: 389; Hagedorn 1910a: 154; Hopkins 1915b: 62; LeConte 1868: 160, 1876: 359–360; Olivier 1795b: 12; Schedl 1950i: 146, 1960h: 8; Swaine 1909: 154, 1918a: 127–128.

confusus Eichhoff 1868a: 401. Lectotype ♀; Valli do Caracas, Venezuela; IRSNB, Brussels, designated by Wood 1982b: 16. Synonymy: Schedl 1957d: 16.

References: (**bv**) Aulmann 1911. (**cn**) Blackman 1950; Cleare 1924: 65–68; Costa Lima 1956; Dash 1917: 56–60; Doane et al. 1936; Froggatt 1926a; Ghesquiere 1933a; Gowdey 1914: 36–58, 1918: 42–51; Green 1916: 608–636; Kleine 1932a: 307; Laboy 1913: 1–153; Lesne 1907: 1236; Mayne & Donis 1951: 325; Packard 1890: 713; Small 1921: 38; Urich 1915: 200–203. (**ec**) Kleine 1929: 150; Mayne & Donis 1951. (**hb**) Aulmann 1911; Beeson 1929; Blackman 1922b: 117–119, 1950; Chamberlin 1939: 454; Costa Lima 1956; Doane et al. 1936; Froggatt 1926a; Kleine 1932a: 307; Packard 1890: 713; Viana 1964: 123. (**ds**) Beeson 1929, 1935a, 1935b, 1938b, 1940; Blackman 1922b, 1950; Blackwelder 1947: 779; Blandford 1898b: 197, 217; Bruch 1914a; Bruner et al. 1945; Callan 1954; Chamberlin 1925, 1939: 454; Costa Lima 1956; Ferrer 1942; Fleutiaux & Salle 1890: 457; Gemminger & Harold 1872: 2685; Ghesquiere 1933a; Hagedorn 1907a, 1907b, 1910d: 100; Hargreaves 1925: 21–28, 1937: 510; Hayward 1942; Herms 1926: 243–274; Kleine 1912a: 162, 212, 1913b: 160, 1914b: 296, 302, 323, 326, 332, 337, 339–340, 344, 354, 372, 379, 1932a: 307, 1934a: 172; Kolbe 1897: 15, 283, 1910: 41; Lepesme et al. 1948: 647; Martorell 1945: 470–471; Murayama 1936b: 115; Nunberg 1971: 58, 67, 1972b: 197; Roberts 1960e, 1960f; Sampson 1914: 387; Schedl 1938d: 451; Steinhausen 1956: 48; Swezey 1941: 123, 1954: 162; Tucker 1952: 347. (**tx**) Aulmann 1911, 1912; Beeson 1929: 245–246, 1935a: 106, 118, 1935b, 1938: 291, 1940: 201; Blackman 1922b: 117–119; Blandford 1898b: 197, 217; Chamberlin 1939: 454; Costa Lima 1956; Eggers 1920: 125, 1929e: 48, 1933b: 3, 33, 1940a: 108, 1941a: 107, 1941d: 179, 1943a: 387; Eichhoff 1868a: 401, 1878b: 384; Hagedorn 1905a: 412, 1907a, 1907b, 1910a: 153, 1910b, 1912a: 344–355, 1913b: 256; Hopkins 1915b: 62; Keler 1928: 29; Kirsch 1875: 284; Lara & Shenefelt 1965: 171–172, 176; Nunberg 1971: 67; Perkins 1900: 177; Sampson 1914: 387; Schaufuss 1897a: 210, 1897b: 103; Schedl 1931c: 346, 1938d: 451, 1939a: 468, 1939g: 170, 1939j: 565, 1940a: 361–363, 1940c: 208, 1941d: 381, 1941f: 116, 1942b: 147–149, 1948d: 37, 1948f: 261–262, 1950c: 205, 1950d: 9, 13, 15, 18, 1950e: 212, 1950f: 40–41, 1950h: 105, 1951b: 376, 1951e: 39, 1951h: 286, 1951k: 139, 1951m: 72–74, 1952a: 444, 1952h: 70, 1952j: 4–5, 1953d: 71, 1953g: 242, 1954d: 872, 1954e: 47, 52, 1955b: 278, 285–286, 1955d: 268, 1955f: 259, 1957d: 16, 1960h: 8; Steinhausen 1956: 48; Wood, S. L. 1957c: 403, 1960a: 64.

retusicollis Zimmermann 1868: 146. Holotype ♀; Maryland; MCZ, Cambridge. Synonymy: Bright 1868b: 1312.

References: (**cn**) Hubbard 1897b: 20; Packard 1890: 93. (**hb**) Chittenden 1890; Hubbard 1897b: 20; Packard 1890: 93; Pierce 1907: 291. (**ds**) Chittenden 1890; Gemminger & Harold

1872: 2686; Hagedorn 1910d: 110; Henshaw 1885: 148; Kleine 1913b: 162, 1914b: 396; Leng 1920: 342; Schwarz 1886: 41, 1895b: 171; Swaine 1909: 156. (**tx**) Bright 1968b: 1312; Eichhoff 1878b: 372; Hagedorn 1910a: 156; Hubbard 1897b: 20; LeConte 1868: 160, 1876: 359–360; Schwarz 1886: 41–42, 1895b: 171; Swaine 1909: 156; Zimmermann 1868: 146.

bispinatus Eichhoff 1868c: 146. Syntypes 8 ♀; Brazil; IRSNB, Brussels. Synonymy: Schedl 1960h: 8.

References: (**hb**) Viana 1964: 123. (**ds**) Blackwelder 1947: 779; Gemminger & Harold 1872: 2685; Hagedorn 1910d: 99; Kleine 1913b: 160, 1914b: 337, 340, 344; Nunberg 1958a: 481, 1960a: 294, 1961a: 330, 1962: 223; Viana 1964: 123; Wolcott 1936: 318. (**tx**) Eggers 1932d: 303, 1934a: 84; Eichhoff 1868c: 146, 1878b: 387; Hagedorn 1910a: 152; Hopkins 1915b: 62; Kirsch 1875: 283; Nunberg 1956a: 144, 1958a: 481; Schedl 1931c: 346, 1938h: 463, 1938i: 28, 1939m: 170, 1948d: 37, 1951h: 285, 287, 1952a: 446, 1958f: 35, 1960h: 8, 1966f: 76.

amplicollis Eichhoff 1869a: 280. Syntypes ♂; Puerto Rico; those in Hamburg Museum, lost, 1 in IRSNB, Brussels. Synonymy: Schedl 1960h: 8.

References: (**ds**) Blackwelder 1947: 779; Gemminger & Harold 1872: 2685; Hagedorn 1910d: 98; Kleine 1913b: 160; Wolcott 1936: 318, 1948: 383. (**tx**) Eichhoff 1869a: 280, 1878b: 388; Hagedorn 1910a: 152; Schedl 1960h: 8.

insularis Sharp 1885: 193. Syntypes ♀; Hawaii; BMNH, London. Synonymy: Schedl 1941f: 116.

References: (**ds**) Beeson 1938: 291; Sampson 1914: 387. (**tx**) Eggers 1929e: 48; Sampson 1914: 387; Schedl 1941f: 116, 1943d: 65, 1948: 383, 1960h: 8; Sharp 1885: 193, 1892: 193; Wood, S. L. 1960a: 64.

tanganus Hagedorn 1910b: 8. Syntypes ♀; Tanga, Deutsch-Ostafrica; Hamburg Museum, lost. Synonymy: Schedl 1960h: 9.

References: (**ds**) Beeson 1938: 291; Hagedorn 1910d: 112; Kleine 1913b: 163, 1914b: 323. (**tx**) Eggers 1920: 125, 1929e: 48; Hagedorn 1910a: 157, 1910b: 8; Schedl 1952c: 65, 1960h: 8–9, 1962j: 426.

soltaui Hopkins 1915b: 66. Holotype ♀; New Orleans, Louisiana; USNM, Washington. Synonymy: Bright 1968b: 1312.

References: (**ds**) Blatchley & Leng 1916: 621; Leng 1920: 342. (**tx**) Blatchley & Leng 1916: 621; Bright 1968b: 1312; Hopkins 1915b: 66.

nyssae Hopkins 1915b: 66. Holotype ♀; Nichols, South Carolina; USNM, Washington. Synonymy: Schedl 1960h: 9.

References: (**cn**) Doane et al. 1936. (**hb**) Chamberlin 1939: 455–456; Doane et al. 1936. (**ds**) Blatchley & Leng 1916: 622; Chamberlin 1939: 455–456; Kleine 1934a: 175; Leng 1920: 342. (**tx**) Blatchley & Leng 1916: 622; Chamberlin 1939: 455–456; Hopkins 1915b: 66–67; Schedl 1950i: 146, 1960h: 8–9, 1962j: 426.

hopkinsi Beeson 1929: 246. Holotype ♀; Upolu: Malololelei [Samoa]; BMNH, London. Synonymy: Schedl 1960h: 8.

References: (**ds**) Beeson 1938b: 292. (**tx**) Beeson 1929: 246–247; Schedl 1951k: 140, 1960h: 8, 1962j: 426.

argentinensis Schedl 1931c: 345. Holotype ♀; Argentina, San Ignacio; Schedl Collection in NHMW, Wien. Synonymy: Schedl 1960h: 8.

References: (**ds**) Blackwelder 1947: 779; Santoro 1957b: 25. (**tx**) Eggers 1934a: 84; Schedl 1931c: 345, 1938h: 463, 1938i: 28, 1951h: 287, 1952a: 446, 1960h: 8, 1962j: 426, 1979c: 25.

rufopiceus Eggers 1932d: 303. Holotype ♀; Congostaat (Elisabethville); MRCB, Tervuren. Synonymy: Wood 1989: 176.

References: (**hb**) Loyttyniemi, Beaver, & Loyttyniemi 1984. (**ds**) Beaver & Loyttyniemi 1985a: 76; Browne 1986b: 334; Ferreira 1965: 1125; Nunberg 1961: 331; Schedl 1959p: 21, 1962j: 458, 1962k: 1102, 1969d: 8, 1977b: 190. (**tx**) Eggers 1932d: 303; Nunberg 1963b: 50–51, pl. 25; Schedl 1960h: 11, 1961e: 147, 1962j: 458, 1977b: 190, 1979c: 215; Wood, S. L. 1989: 176.

schedli Eggers 1934a: 83. Holotype ♀; 12 km from Atlantic Ocean, Limon, Costa Rica; USNM, Washington. Synonymy: Schedl 1960h: 9.

References: (**tx**) Anderson, W. H. & Anderson 1971: 29; Eggers 1934a: 83; Nunberg 1959a: 437; Schedl 1940c: 208, 1948f: 261–262, 1960h: 8, 1962j: 426.

nesianus Beeson 1940: 200. Holotype ♀; Society Islands: Tahiti, Taohiri, Mt. Aorai Trail; BPBM, Honolulu. Synonymy: Beaver 1991: 95.

References: (**tx**) Beaver 1991: 95; Beeson 1940: 200–201.

notatus Eggers 1941a: 107. Holotype ♀; 3–Riv., Guadeloupe; USNM, Washington. Synonymy: Schedl 1960h: 8.

References: (**tx**) Anderson, W. H. & Anderson 1971: 22; Eggers 1941a: 107; Nunberg 1959a: 432; Schedl 1960h: 8, 1962j: 426, 1979c: 171.

subitus Schedl 1948f: 280. Holotype ♀; Mexico, Chiapas; Schedl Collection in NHMW, Wien. Synonymy: Schedl 1960h: 9.

References: (**tx**) Santoro 1966a; Schedl 1948f: 280, 1960h: 8–9, 1962j: 426, 1979c: 242.

***festivus* Eichhoff** 1875: 202. Syntypes ♀; Japan; IRSNB, Brussels.

Distribution: Asia (Japan/ Ryukyu Islands).

Hosts: *Pinus densiflora*.

References: (**cn**) Murayama 1954a: 11. (**ds**) Blandford 1894c; Hagedorn 1910d: 104; Kleine 1913b:

161, 1914b: 260; Murayama 1954a: 11, 1954b: 177, 1955: 100; Nobuchi 1966d: 29, 1985c: 24. (**tx**) Blandford 1894d; Eichhoff 1875: 202, 1877a: 125, 1878b: 366; Hagedorn 1910a: 154; Murayama 1954b: 177, 1955: 100; Nobuchi 1966d: 29; Schedl 1934f: 1646, 1960b: 164.

***ficus* Eggers** 1927a: 193. Syntypes ♀; Belg.-Congo, Barumbu; MRCB, Tervuren and Eggers Collection, in NHMW, Wien.
Figures: Nunberg 1963b:pl. 14, figs. 1–6.
Distribution: Africa (Fernando Poo/ "French West Africa"/ Ghana/ Ivory Coast/ Zaire).
Hosts: *Acacia pennata*, *Anthonata macrophyllum*, *Camoensia maxima*, *Chrysophullum africanum*, *Dialium pachyphyllum*, *Ficus mucuso*, *Ficus seretii*, *Hevea brasiliensis*, *Panda oleosa*, *Pentaclethra macrophylla*, *Pterocarpus tinctorius*, *Thalia geniculata*, *Theobroma cacao*.
References: (**bv**) Schedl 1960f: 53. (**cn**) Ghesquiere 1933a: 27–36. (**ec**) Schedl 1962j: 320. (**hb**) Schedl 1962j: 320. (**ds**) Ghesquiere 1933a: 27–36, 1933b: 777–786; Kleine 1934a: 173; Mayne & Donis 1962: 318; Schedl 1960f: 40, 1961m: 84, 1962j: 320, 1967e: 216, 1971g: 193, 1972e: 283. (**tx**) Beeson 1935: 114; Eggers 1927a: 193–194; Nunberg 1963b: 31, pl. 14; Schedl 1954d: 872, 1957e: 880, 1961m: 84, 1962j: 320, 1979c: 96.

***figuratus* Schedl** 1959a: 508. Syntypes ♀; Ceylon: Millawitiya Estate; Schedl Collection in NHMW, Wien.
Distribution: Asia (Sri Lanka).
References: (**ds**) Schedl 1959a: 508. (**tx**) Schedl 1959a: 508, 1979c: 96.

***fischeri* Hagedorn** 1908: 380. Syntypes ♀; Sumatra-Palembang; Hamburg Museum, lost.
Distribution: Indonesia (Borneo, Sumatra).
Hosts: *Sarcocephalus cordatus*.
Notes: (1) Schedl 1979c: 97 (neotype designation invalid).
References: (**cn**) Mathur & Singh 1961a: 26. (**ds**) Beeson 1930, 1961: 304; Hagedorn 1910d: 104; Kleine 1913b: 161, 1914b: 286; Mathur & Singh 1961a: 26. (**tx**) Beeson 1930: 58; Eggers 1923a: 203–204, 1927b: 407; Hagedorn 1908: 380, 1910a: 154; Sampson 1912: 249; Schedl 1940b: 441, 1954c: 154, 1979c: 97.

***flavipennis* Schedl** 1979g: 107. Holotype ♀; Papua [New Guinea]: Bululo, Morobe Dist., Upper Manki L. A.; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1979g: 107.

***flavopilosus* Schedl** 1936g: 533. Holotype ♀; New Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**ds**) Schedl 1936g: 533. (**tx**) Schedl 1936g: 533–534, 1955b: 300, 1979c: 97.

***foederatus* Schedl** 1963f: 58. Holotype ♀; Suriname, Dirkshoop und Maripaheuvel; Schedl Collection in NHMW, Wien.
Distribution: South America (Suriname).
References: (**tx**) Schedl 1963f: 58, 1979c: 98.

***formosae* Wood** 1992b: 80. Holotype ♀; Hualien (Formosa) to Yatsushiro (Japan), imported; BMNH, London, automatic.
Distribution: Asia (Taiwan).
References: (**tx**) Wood, S. L. 1992b: 80.

formosanus Browne 1981a: 131. Holotype ♀; Hualien (Formosa) to Yatsushiro (Japan), imported, preoccupied by Eggers 1930: 186.
References: (**tx**) Browne 1981a: 131; Wood, S. L. 1992b: 80.

***fukiensis* Eggers** 1941b: 225. Holotype ♀; Fukien (Kuatun, 2300 m); Alexander Konig Museum, Bonn.
Distribution: Asia (Fujian in China/ Nepal).
References: (**ds**) Eggers 1941b: 225; Schedl 1953e: 29, 1973b: 211.

***fulvulus* Schedl** 1942d: 35. Lectotype ♀; Sumatra, Padang; Schedl Collection in NHMW, Wien, automatic, designated by Schedl 1979c: 102.
Distribution: Indonesia (Sumatra).
Notes: *Myristica fragrans*.
References: (**hb**) Kalshoven 1959c: 143. (**ds**) Kalshoven 1959c: 143. (**tx**) Schedl 1942d: 35–37, 1979c: 101–102.

fulvus Schedl 1939f: 48. Lectotype ♀; Sumatra, Padang; Schedl Collection in NHMW, Wien, preoccupied by Murayama 1936, designated by Schedl 1979c: 102.
References: (**tx**) Schedl 1939f: 48, 1942d: 35–37, 1979c: 101–102.

***fuyugei* Schedl** 1973f: 74. Holotype ♀; Abaleti, Rossel Isl., M. Bay Dist. [New Guinea]; AMNH, New York.
Distribution: New Guinea.
References: (**tx**) Schedl 1973f: 74.

***ganshoensis* Murayama** 1952a: 16. Holotype ♀; Gansho, Izu Peninsula, Shizuoka; Murayama Collection in USNM, Washington.
Distribution: Asia (Japan).
Hosts: *Castanea crenata*.
References: (**ds**) Murayama 1952a: 16, 19, 1954b: 177; Nobuchi 1985c: 24. (**tx**) Murayama 1952a: 16, 19, 1954b: 177.

***geayi* Hagedorn** 1905a: 413. Lectotype ♀; Camopi, French Guiana; MNHN, Paris, designated by Wood 1982b: 820.
Distribution: North America (Costa Rica), South America (Brazil/ Cayenne/ Colombia/ Guyana/ Venezuela).
Hosts: *Sloania multiflora*.
References: (**ds**) Blackwelder 1947; Hagedorn 1910d: 105; Kleine 1913b: 161, 1914b: 339; Schedl

1972g: 45. (**tx**) Eggers 1933b: 26; Hagedorn 1905a: 413, 1910a: 154; Wood, S. L. 1982b: 820.

***gezei* Lepesme** 1942c: 120. Holotype ♂; Cameroun: Mont Etinde, 1000–1100 m; MNHN, Paris.
Distribution: Africa (Cameroon).
References: (**cn**) Grandi 1951. (**hb**) Grandi 1951; Paulian 1949a: 986. (**tx**) Jeannel 1949: 986; Lepesme 1942c: 120; Schedl 1962j: 576.

***gibber* Schedl** 1961e: 145. Holotype ♀; Madagascar, Perinet; IRSM, Madagascar.
Distribution: Madagascar.
Hosts: *Dalbergia pterocarpifolia*.
References: (**ds**) Schedl 1977b: 196. (**tx**) Schedl 1961e: 145, 1965c: 74, 1977b: 196, 1979c: 104.

***glabratulus* Browne** 1983a: 560. Holotype ♀; Viru Harbour (Solomon Islands) to Nagoya (Japan), imported; BMNH, London.
Distribution: Solomon Islands.
Hosts: *Terminalia* sp.
References: (**ds**) Ohno et al. 1989: 62. (**tx**) Browne 1983a: 560.

***glabratus* Eichhoff** 1877a: 127. Syntypes ♀; Japan; IRSNB, Brussels.
Figures: Nobuchi 1978a:pl. 3.
Distribution: Asia (Bonin Islands/ Burma/ Assam, Bengal in India/ Japan/ Taiwan).
Hosts: *Lindera latifolia*, *Litsaea elongata*, *Shorea robusta*.
References: (**cn**) Mathur & Singh 1961a: 46. (**ec**) Beeson 1923. (**hb**) Beeson 1923. (**ds**) Beeson 1923, 1930, 1961: 305; Blandford 1894c; Hagedorn 1910d: 105; Kleine 1913b: 161, 1914b: 260, 279; Mathur & Singh 1961a: 46; Murayama 1936a: 132, 1954b: 179; Nobuchi 1967: 22, 1978: 36; Nobuchi & Ono 1973: 182; Ohno et al. 1988a: 94; Schedl 1971c: 362, 1975a. (**tx**) Beeson 1930: 236; Blandford 1894d; Eichhoff 1877a: 127, 1878b: 381; Hagedorn 1910a: 154; Murayama 1936a: 132–133, 1954b: 179; Nobuchi 1978a: pl. 3; Schedl 1934f: 1646.

***gorggae* Schedl** 1973e: 91. Holotype ♀; New Ireland District, Papontamon; CSIRO, Canberra.
Distribution: New Ireland Island.
Hosts: *Eucalyptus deglupta*, and Gorgga log.
References: (**tx**) Schedl 1973e: 91, 1979c: 106.

***granatus* Schedl** 1979a: 161. Holotype ♀; Brisbane, Queensland, Australia; Schedl Collection in NHMW, Wien.
Distribution: Australia (Queensland).
References: (**tx**) Schedl 1979a: 161.

***grandis* Eichhoff** 1869a: 281. Holotype ♀; Colombia; IRSNB, Brussels.
Distribution: North America (Costa Rica), South America (Colombia).
Hosts: Large log.
References: (**hb**) Wood, S. L. 1982b: 821. (**ds**) Blackwelder 1947: 779; Gemminger & Harold 1872: 2685; Hagedorn 1910d: 105; Kleine 1913b: 161, 1914b: 343; Wood, S. L. 1982b: 821. (**tx**) Eggers 1933b: 26; Eichhoff 1869a: 280–281, 1878b: 350; Hagedorn 1910a: 154; Schedl 1979c: 106; Wood, S. L. 1982b: 821.

***graniger* Schedl** 1955b: 303. Holotype ♀; Neu-Guinea, Berlinhafen; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1955b: 281, 303, 1958k: 145.

***granulipes* Schedl** 1973e: 91. Holotype ♀; Mogova, Goodenough Island, Milne Bay District [New Guinea]; CSIRO, Canberra.
Distribution: New Guinea.
Hosts: *Pterocarpus indicus*.
References: (**tx**) Schedl 1973e: 91, 1979c: 112.

***granurus* Browne** 1980a: 376. Holotype ♀; Buru Island (Moluccas) to Nagoya (Japan), imported; BMNH, London.
Distribution: Indonesia (Buru Island).
Hosts: *Shorea* sp.
References: (**tx**) Browne 1980a: 376.

***gratiosus* Schedl** 1975f: 366. Holotype ♀; Minj Golf Course, Western Highlands District; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
Hosts: *Araucaria cunninghamii*.
References: (**tx**) Schedl 1975f: 366, 1979c: 112.

***gratus* Schedl** 1964g: 248. Holotype ♀; Sarawak, Semengoh; BMNH, London.
Distribution: Indonesia (Sarawak in Borneo).
References: (**tx**) Schedl 1964g: 248, 1979c: 112.

***gravelyi* Wichmann** 1914a: 411. Syntypes 2 ♀; Kobo, 400 ft.; not given.
Distribution: Asia (Bengal in India).
Hosts: *Symplocos theaefolia*.
References: (**ds**) Beeson 1961: 305. (**tx**) Wichmann 1914a: 411–412.

***grossmanni* Schedl** 1952d: 362. Holotype ♀; in Holzern aus Columbien nach Hamburg importiert; Schedl Collection in NHMW, Wien.
Distribution: South America (Colombia/ Suriname).
Hosts: *Dialyanthera otoba*, *Virola surinamensis*.
References: (**tx**) Schedl 1952d: 362, 1979c: 113.
acuminatus Schedl 1970e: 94. Nied. Guayana, Para Dist.; Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 177.
References: (**tx**) Schedl 1970e: 94, 1979c: 113; Wood, S. L. 1989: 177.

***haberkorni* Eggers** 1920: 43. Lectotype ♀; Amani, Deutsch-Ostafrika; USNM, Washington, designated by Anderson & Anderson 1971: 14.
Distribution: Africa (Tanzania), Asia (Bangladesh/ Burma/ Hainan Island in China/ India/ Malaya/ Sri Lanka/ Taiwan/ Vietnam), Indonesia (Java).
Hosts: *Albizzia moluccana*, *Artocarpus dadah*, *Coffea liberica*, *Dalbergia latifolia*, *Eugenia jambolana*, *Mangifera indica*, *Melanorrhoea*

curtisii, *Parkia speciosa*, *Piper* sp., *Salix tetrasperma*, *Shorea maxwelliana*, *S. ovata*, *S. robusta*, *Swietenia mahogoni*, *Tectona grandis*, *Terminalia myriocarpa*, *Theobroma cacao*, *Toonia sinensis*, *Tristania whiteana*, *Turpinda pomifera*, *Vitex pubescens*.

References: (**cn**) Frolich & Rodewald 1969: 99; Kalshoven 1932: 252, 1951: 849; Mathur & Singh 1961a: 8, 1961b: 34; Miller et al. 1933: 105–107, 125; Murthy et al. 1965: 5; Speyer 1923: 21; Yunus & Hua 1980: 230. (**ec**) Browne 1958b: 164–182; Norris 1979. (**hb**) Beaver & Browne 1978: 609; Browne 1958b, 1961c: 113; Kalshoven 1951: 849, 1958a: 189, 1959c: 151; Roonwal 1954: 48. (**ds**) Beaver & Browne 1978: 609; Beeson 1930: 237, 271, 1941: 397, 1961: 305; Browne 1958b, 1968a: 132–133; Kalshoven 1932: 252, 1951: 849, 1958a: 189, 249, 1959c: 150–151; Kleine 1934a: 173; Mathur & Singh 1961a: 8, 1961b: 34; Nobuchi 1967: 21; Schedl 1959a: 500, 1962b: 186, 1962j: 268, 1971a: 277, 1974c: 262; Yunua & Hua 1980: 2130. (**tx**) Anderson, W. H. & Anderson 1971: 14; Beeson 1930: 237, 271; Eggers 1920: 43–44, 1923a: 191, 1936d: 626, 632, 1939c: 114; Kleine 1934a: 173; Schedl 1942a: 171, 1942d: 5, 1959a: 500, 1962j: 268.

***haddeni* Schedl** 1933d: 101. Holotype ♀; Mount Maquiling, Laguna, Luzon; Schedl Collection in NHMW, Wien.

Distribution: Philippine Islands (Luzon).

Hosts: *Toonia calantas*.

References: (**ds**) Schedl 1936g: 531, 1966b: 56. (**tx**) Nobuchi 1983: 302; Schedl 1933e: 101, 1979c: 115.

***haesitus* Schedl** 1976a: 74. Holotype ♀; Ter. Amapa, Serra Navio [Brazil]; Schedl Collection in NHMW, Wien.

Distribution: South America (Brazil).

References: (**tx**) Schedl 1976a: 74.

***hagedornianus* Schedl** 1952k: 164. Syntypes ♀; Kaden Bilin Forest, Tharrawaddy [Lower Burma]; FRI, Dehra Dun, automatic.

Distribution: Asia (Burma/ Bengal in India).

Hosts: *Evodia fraxinifolia*, *Symplocos theaefolia*, *Tectona grandis*.

References: (**cn**) Mathur & Singh 1961a: 84, 1961b: 14. (**ds**) Mathur & Singh 1961a: 84, 1961b: 14; Pedrosa-Macedo & Schonherr 1985: 31. (**tx**) Pedrosa-Macedo & Schonherr 1985: 31; Schedl 1952k: 164, 1960i: 109.

hagedorni Stebbing 1914: 596. Syntypes ♀; Kaden Bilin Forest, Tharrawaddy [Lower Burma]; FRI, Dehra Dun, preoccupied by Iglesias 1914.

References: (**cn**) Stebbing 1914: 596. (**ec**) Stebbing 1914: 594. (**hb**) Stebbing 1914: 596. (**ds**) Beeson 1930: 237–238, 1961: 305; Kleine 1934a: 173. (**tx**) Beeson 1930: 61–62, 237; Eggers 1930d: 4, 180; Nunberg 1956: 209; Schedl 1952k: 164; Stebbing 1914: 396.

tectonae Nunberg 1956d: 209. Syntypes ♀; Kaden Bilin Forest, Tharrawaddy [Lower Burma]; FRI, Dehra Dun, automatic.

Notes: Kumar & Chandra 1977: 37 (described male).

References: (**tx**) Kumar & Chandra 1977: 37, 48; Nunberg 1956d: 209; Schedl 1960h: 109.

***halli* Schedl** 1954c: 161. Holotype ♀; British North Borneo; BMNH, London.

Distribution: Indonesia (Sarawak in Borneo).

References: (**tx**) Schedl 1954c: 161.

***hashimotoi* Browne** 1986a: 95. Holotype ♀; New Guinea: Fak fak to Nagoya (Japan), imported; BMNH, London.

Distribution: New Guinea.

References: (**tx**) Browne 1986a: 96.

***hatanakai* Browne** 1983a: 559. Holotype ♀; Tatau (Sarawak) to Nagoya (Japan), imported; BMNH, London.

Distribution: Indonesia (Sarawak in Borneo).

Hosts: Meranti log.

References: (**ds**) Ohno et al. 1987: 89. (**tx**) Browne 1983a: 559.

***hawaiiensis* Perkins** 1900: 175. Lectotype ♀; Hawaii, Hilo; BMNH, London, designated by Samuelson 1981: 74.

Figures: Nunberg 1959a:pl. 22, figs. 5–6, Samuelson 1981: 74.

Distribution: Hawaiian Islands (Hawaii, Oahu).

Hosts: *Cheirodendron* sp., *Dubautia laxa*, *Pipturus albidus*, *Tetraplasandra* spp.

References: (**ds**) Beeson 1938b: 292; Hagedorn 1910d: 105; Kleine 1913b: 161, 1914b: 303; Samuelson 1981: 74; Swezey 1941: 121, 1954: 14. (**tx**) Hagedorn 1910a: 154; Nunberg 1959a: 427; Perkins 1900: 175; Samuelson 1981: 63, 74; Schedl 1941f: 112.

***hiiaka* Samuelson** 1981: 75. Holotype ♀; Hawaii: upper Hamakua Ditch Trail; BPBM, Honolulu.

Figures: Samuelson 1981: 63.

Distribution: Hawaiian Islands (Hawaii).

Hosts: *Cheirodendron* sp.

References: (**tx**) Samuelson 1981: 63, 75.

***hirtipes* Schedl** 1969c: 53. Holotype ♀; N.E. Burma: Kambaiti, 2000 m; Schedl Collection in NHMW, Wien.

Distribution: Asia (Burma).

References: (**tx**) Schedl 1969c: 53, 1979c: 118.

***hopeae* Browne** 1986a: 96. Holotype ♀; New Guinea: Fak fak to Nagoya (Japan), imported; BMNH, London.

Distribution: New Guinea.

Hosts: *Hopea* sp. log.

References: (**tx**) Browne 1986a: 96.

***horridatus* Wood** 1967c: 135. Holotype ♀; San Isidro del General, San Jose Prov., Costa Rica; Wood Collection.

Distribution: North America (Costa Rica/ Panama), South America (Colombia).
Hosts: *Citrus sinensis*, *Theobroma cacao*.
References: (**hb**) Wood, S. L. 1982b: 797. (**ds**) Wood, S. L. 1982b: 797. (**tx**) Wood, S. L. 1967c: 135, 1982b: 797.

***horridicus* Wood** 1967c: 136. Holotype ♀; Reyes, Bolivia; Wood Collection.
Distribution: South America (Bolivia).
References: (**tx**) Wood, S. L. 1967c: 136.

***horridulus* Browne** 1961a: 307. Holotype ♀; Sarawak: Bako National Park; BMNH, London.
Distribution: Indonesia (Sarawak in Borneo).
References: (**ds**) Browne 1965a: 189; Parsons 1963: 352. (**tx**) Browne 1961a: 307, 1965a: 189.

***horridus* Eichhoff** 1869a: 282. Lectotype ♀; Teapa, Mexico; IRSNB, Brussels, designated by Wood 1982b: 796.
Figures: Nunberg 1968a:pl. 1.
Distribution: North America (El Salvador/ Guatemala/ Tabasco, Veracruz in Mexico/ Texas in USA).
Hosts: *Cassia* sp., *Hevea brasiliensis*.
References: (**ds**) Atkinson & Equihua 1985b: 237, 1986, 1988: 102; Blackwelder 1947: 780; Blandford 1898b: 195, 203; Estrada & Atkinson 1988: 207; Ferrer 1942; Gemminger & Harold 1872: 2685; Hagedorn 1910d: 105; Kleine 1913b: 161, 1914b: 354, 371; Schedl 1963c: 160, 1966f: 77, 1972g: 38, 1977e: 43; Wood, S. L. 1961c: 2, 1982b: 796. (**tx**) Blandford 1898b: 195, 203; Eichhoff 1869a: 282, 1878b: 343; Hagedorn 1908, 1910a: 154; Nunberg 1968a: 274, pl. 1; Schedl 1940a: 361; Wood, S. L. 1967c: 135–136, 1977b: 211, 1982b: 796.

flohri Schedl 1972g: 69. Holotype ♀; Mexico; Schedl Collection in NHMW, Wien. Synonymy: Wood 1977b: 211.
References: (**tx**) Schedl 1972g: 69, 1979c: 98; Wood, S. L. 1977b: 211.

***hova* Schedl** 1953d: 95. Lectotype ♀; Madagascar, Mt. d'Ambre; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 119.
Distribution: Madagascar.
References: (**tx**) Schedl 1953d: 95, 1977b: 135, 1979c: 119.

***howdenae* Bright** 1973: 18. Holotype ♀; Hardwar Gap, St. Andrew Parish [Jamaica], 4000 feet; CNCI, Ottawa, automatic.
Figures: Bright 1972d: 95.
Distribution: Antilles Islands (Jamaica).
References: (**ds**) Bright 1985c: 174. (**tx**) Bright 1973: 18, 1981c: 158, 1985c: 174.

novus Bright 1972d: 78. Holotype ♀; Hardwar Gap, St. Andrew Parish [Jamaica], 4000 feet; CNCI, Ottawa, preoccupied by Eggers 1923.
References: (**tx**) Bright 1972d: 95, 1973: 18; McNamara 1977: 200; Schedl 1974f: 332.

brighti Schedl 1974f: 335. Holotype ♀; Hardwar Gap, St. Andrew Parish [Jamaica], 4000 feet; CNCI, Ottawa, automatic.
Notes: (1) This is an unneeded replacement name, no status.
References: (**tx**) Bright 1981c: 158; Schedl 1974f: 335.

***hunanensis* Browne** 1983d: 33. Holotype ♀; China: Hunan, Changsha; IZAS, Beijing.
Distribution: Asia (Hunan in China).
References: (**tx**) Browne 1983d: 33.

***hystricoides* Browne** 1973a: 293. Holotype ♀; Zaire: Nioka; MRCB, Tervuren.
Distribution: Africa (Zaire).
References: (**tx**) Browne 1973a: 293.

***ignobilis* Perkins** 1900: 180. Lectotype ♀; Hawaii: Hilo, 2000 ft.; BMNH, London, designated by Samuelson 1981: 76.
Distribution: Hawaiian Islands (Hawaii, Lanai).
Hosts: *Freycinetia arborea*.
References: (**ds**) Beeson 1938b: 292; Hagedorn 1910d: 105; Kleine 1913b: 161, 1914b: 302; Samuelson 1981: 76. (**tx**) Hagedorn 1910a: 154; Perkins 1900: 180; Samuelson 1981: 56, 76; Schedl 1934g: 177–178, 1959a: 498.

***iheringi* Iglesias** 1914b: 129. Syntypes ♀; Butantan, S. Paulo; not given.
Distribution: South America (Brazil).
Hosts: *Eucalyptus robusta*.
References: (**cn**) Azavedo 1924b: 180–181. (**ds**) Blackwelder 1947; Kleine 1934a: 173. (**tx**) Iglesias 1914b: 128–129.

***imbellis* Blandford** 1898b: 211. Holotype ♀; San Juan, Verapaz, Guatemala; BMNH, London.
Distribution: North America (El Salvador/ Guatemala/ Veracruz in Mexico).
Hosts: *Hevea brasiliensis*.
References: (**ds**) Blackwelder 1947: 780; Hagedorn 1910d: 105; Kleine 1913b: 161, 1914b: 372. (**tx**) Blandford 1898b: 211; Hagedorn 1910a: 154.

***immersus* Schedl** 1972i: 52. Holotype ♀; Lakunai, E. New Britain Dist.; CSIRO, Canberra.
Distribution: New Britain Island.
Hosts: *Melochia odorata*.
References: (**tx**) Schedl 1972i: 52, 1979c: 122.

***immitatrix* Schedl** 1975f: 367. Holotype ♀; Upper Manki logging area, Bulolo, Morobe Dist. [New Guinea]; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1975f: 367, 1979c: 121.

***impar* Eggers** 1927c: 89. Syntypes ♂; Philippinen: Mindanao, Prov. Lanao, Kolambugan; Eggers Collection (not mentioned by either Anderson & Anderson 1971 or Schedl 1979c).
Distribution: Philippine Islands.
References: (**ds**) Schedl 1966b: 56. (**tx**) Eggers 1927c: 89–90; Nobuchi 1983: 302.

***impexus* Schedl** 1942c: 184. Holotype ♀; Neu-Guinea; Schedl Collection in NHMW, Wien.

Distribution: New Guinea.
References: (**tx**) Schedl 1942c: 184, 1979c: 122.

***improbus* Sampson** 1913: 444. Holotype ♀; Darjeeling; BMNH, London.
Distribution: Asia (Xizang [Tibet] in China/ Bengal in India).
Hosts: *Eucalyptus globulus*, *Machilus odoratissima*, *Quercus lamellosa*.
References: (**cn**) Pierce, W. D. 1917: 154; Stebbing 1914: 600. (**ec**) Stebbing 1914: 600. (**hb**) Stebbing 1914: 600. (**ds**) Beeson 1930: 238, 1961: 305; Kleine 1934a: 173; Pierce, W. D. 1917: 154. (**tx**) Beeson 1930: 216, 238; Eggers 1930d: 179; Sampson 1913: 444; Schedl 1979c: 122; Stebbing 1914: 600.

***improcerus* Sampson** 1921: 33. Holotype ♀; Siam; BMNH, London.
Distribution: Asia (India/ Malaya/ Thailand), Indonesia (Borneo).
Hosts: *Dipterocarpus cornutius*.
References: (**cn**) Yunus & Hua 1980: 230. (**hb**) Browne 1961c: 112. (**ds**) Beaver & Browne 1975: 298; Beeson 1961: 305; Sampson 1921: 33; Yunus & Hua 1980: 230. (**tx**) Sampson 1921: 33.

***improvidus* Schedl** 1935d: 92. Holotype ♀; Venezuela; Schedl Collection in NHMW, Wien.
Distribution: North America (Panama), South America (Venezuela).
References: (**hb**) Wood, S. L. 1982b: 815. (**ds**) Blackwelder 1947: 780; Wood, S. L. 1982b: 815. (**tx**) Schedl 1935d: 92, 1979c: 122; Wood, S. L. 1979b: 136, 1982b: 815.

aclinis Wood 1974a: 38. Holotype ♀; Cerro Punta near Volcan de Chiriqui (Baru), Chiriqui, Panama; Wood Collection. Synonymy: Wood 1979b: 136.
References: (**tx**) Wood, S. L. 1974a: 38, 1979b: 136.

***inaequalis* Schedl** 1934d: 87. Lectotype ♀; Java, Mt. Gede, 800 m; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 123.
Distribution: Asia (Singapore in Malaya), Indonesia (Java).
Hosts: *Desmoncus* sp., *Plectocomia elongata*, Rattan.
References: (**hb**) Kalshoven 1959c: 139. (**ds**) Browne 1970: 542; Kalshoven 1935a: 14, 1959c: 138–139. (**tx**) Schedl 1934d: 87–88, 1939f: 51, 1959a: 502, 1961c: 71, 1979c: 123.

***inarmatus* Eggers** 1923a: 209. Lectotype ♀; Tenasserim; USNM, Washington, designated by Anderson & Anderson 1971: 15.
Distribution: Asia (Burma/ India), Indonesia (Sumatra).
Hosts: *Quercus lamellosa*.
References: (**ds**) Beeson 1930: 238, 1961: 305. (**tx**) Anderson, W. H. & Anderson 1971: 15; Beeson 1930: 238; Eggers 1923a: 209–210, 1925: 159, 1927a: 189, 1930d: 205, 210; Schedl 1934d: 87.

***inconstans* Schedl** 1962j: 271. Holotype ♀; Congostaat; Schedl Collection in NHMW, Wien.
Distribution: Africa (Zaire).
References: (**tx**) Schedl 1962j: 271, 1979c: 123.

***indonesianus* Browne** 1984b: 290. Holotype ♀; Lakea (Indonesia) to Kishiwada (Japan), imported; BMNH, London.
Distribution: Indonesia.
Hosts: Meranti log.
References: (**ds**) Ohno, Yoneyama, & Nakazawa 1987: 94. (**tx**) Browne 1984b: 290.

***insignis* Browne** 1984c: 452. Holotype ♀; Wallace Bay (Sabah) to Nagoya (Japan), imported.
Distribution: Indonesia (Sabah or Sabak Island).
Hosts: *Albizzia* sp.
References: (**tx**) Browne 1984c: 452.

***insitivus* Schedl** 1959a: 509. Syntypes ♀; Ceylon: Millawitiya Estate; Schedl Collection in NHMW, Wien.
Distribution: Asia (Sri Lanka).
References: (**ds**) Schedl 1959a: 509. (**tx**) Schedl 1959a: 509, 1979c: 125.

***insulindicus* Eggers** 1923a: 177. Lectotype ♀; Neu Guinea (Sudost), Paumomufluss; USNM, Washington, designated by Anderson & Anderson 1971: 16.
Figures: Nunberg 1959a:pl. 23, figs. 5–6.
Distribution: Australia (Queensland), Fiji Islands, New Guinea.
Hosts: *Cardwellia sublimus*, *Elaeocarpus* sp., *Endiandra palmerstonii*, *Flindersia acuminata*.
Notes: (3) Schedl 1980b: 186 (described male).
References: (**hb**) Kalshoven 1959c: 137. (**ds**) Browne 1974a: 65, 1984b: 286; Kalshoven 1959c: 137; Ohno, Yoneyama, & Nakazawa 1982a: 4; Schedl 1961a: 74, 1980b: 184. (**tx**) Anderson, W. H. & Anderson 1971: 16; Beeson 1929: 234–235; Eggers 1923a: 177–178, 1927c: 101; Nunberg 1959a: 429; Schedl 1942a: 187, 1942c: 163, 1950f: 40, 1951i: 73, 1969b: 218, 1979c: 126, 1980b: 184–186.

***integer* Schedl** 1957d: 93. Holotype ♀; Congo Belge: Kivu, Mt. Kahuzi; MRCB, Tervuren.
Figures: Nunberg 1963b:pl. 18, figs. 3–6.
Distribution: Africa (Kenya/ Zaire).
Hosts: *Eucalyptus botryoides*, *Hypericum lanceolatum*.
References: (**ec**) Schedl 1958d: 192–194. (**hb**) Schedl 1962j: 303. (**ds**) Schedl 1962j: 303. (**tx**) Nunberg 1963b: 37, pl. 18; Schedl 1957d: 93, 241, 1962j: 303, 1979c: 126.

***interponens* Schedl** 1954c: 160. Lectotype ♀; Borneo, Sarawak, Mt. Penrissen, 4500 ft.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 127.
Distribution: Indonesia (Sarawak in Borneo).
References: (**tx**) Schedl 1954c: 160, 1979c: 127.

***interpunctatus* Blandford** 1898b: 206. Holotype ♀; Guatemala, Rio Naranjo; BMNH, London.

Distribution: North America (Guatemala).
References: (**ds**) Hagedorn 1910d: 106; Kleine 1913b: 161, 1914b: 371. (**tx**) Blandford 1898b: 206; Hagedorn 1910a: 154.

***intrusus* Blandford** 1898b: 213. Lectotype ♀; San Geronimo, Guatemala; BMNH, London, designated by Wood 1982b: 839.
Figures: Schwerdtfeger 1960b: 254.
Distribution: Antilles Islands (Dominican Republic in Hispanola), North America (British Columbia in Canada/ Guatemala/ Honduras/ Chiapas, Distrito Federal, Durango, Jalisco, Mexico, Morelos, Oaxaca, Puebla in Mexico/ Arizona, California, Colorado, District of Columbia, Idaho, Maryland, Montana, New Mexico, North Carolina, Oregon, Pennsylvania, South Carolina, South Dakota, Utah in USA).
Hosts: *Pinus contorta*, *P. coulteri*, *P. jeffreyi*, *P. leiophylla*, *P. mexicana*, *P. ponderosa*, *P. rudis*, *Pseudotsuga menzeisii*.
References: (**hb**) Atkinson & Equihua 1985b: 238; Atkinson et al. 1986: 35; Burgos & Saucedo 1983: 101; Furniss, M. M. & Johnson 1987: 381; Wood, S. L. 1982b: 839. (**ds**) Atkinson & Equihua 1985b: 238, 1988: 102; Atkinson et al. 1986: 35; Blackwelder 1947: 780; Bright 1985c: 174; Burgos & Saucedo 1983: 101; Drooz 1985: 374; Fall 1906: 202; Furniss, M. M. & Johnson 1987: 381; Furniss, R. L. & Carolin 1977: 413; Gast et al. 1989: 385; Hagedorn 1910d: 106; Kleine 1913b: 161, 1914b: 372; Snow 1907: 188; Wickham 1898: 312; Wood, S. L. 1982b: 839. (**tx**) Blandford 1898b: 213; Bright 1985c: 174; Hagedorn 1910a: 154; Wood, S. L. 1972e: 198, 1982b: 839.

howardi Hopkins 1915b: 62, 65. Holotype ♀; Washington, D.C. [USA]; USNM, Washington. Synonymy: Wood 1972e: 198.
References: (**hb**) Chamberlin 1939: 453. (**ds**) Baker, W. L. 1972: 271; Blatchley & Leng 1916: 620; Bright 1968b: 1318; Chamberlin 1939: 453; Leng 1920: 342. (**tx**) Blatchley & Leng 1916: 620; Bright 1968b: 1318; Chamberlin 1939: 453; Hopkins 1915b: 65–66; Wood, S. L. 1962: 79, 1972e: 198.

fitchi Hopkins 1915b: 62, 66. Holotype ♀; Hyslop, Long Island [USA]; USNM, Washington. Synonymy: Wood 1962: 79.
References: (**cn**) Blackman 1950; Doane et al. 1936. (**ec**) Savely 1939: 336. (**hb**) Beal & Massey 1945: 159; Blackman 1950; Chamberlin 1939: 453; Doane et al. 1936. (**ds**) Anonymous 1926c: 520; Beal & Massey 1945: 159; Blackman 1950; Blatchley & Leng 1916: 620; Chamberlin 1939: 453; Kleine 1934a: 173; Knull 1934: 212; Leng 1920: 342; Leonard 1928: 520. (**tx**) Beal & Massey 1945: 159; Blatchley & Leng 1916: 620; Bright 1968b: 1318; Chamberlin 1939: 453; Hopkins 1915b: 62, 66; Wood, S. L. 1962: 79.

scopulorum Hopkins 1915b: 62, 66. Holotype ♀; Black Hills, South Dakota [USA]; USNM, Washington. Synonymy: Wood 1972e: 198.
References: (**cn**) Chamberlin 1939: 453; Doane et al. 1936; Keen 1929: 56, 1948: 147; Schuder 1969: 78; Schwerdtfeger 1960b. (**ec**) Becker 1953, 1955; Chamberlin 1939: 453; Keen 1948: 147; Massey 1961: 358; Stephen & Dahlsten 1976: 292. (**hb**) Becker 1953, 1955; Bright & Stark 1973: 77; Chamberlin 1939: 453; Doane et al. 1936; Keen 1929: 56, 1948: 147. (**ds**) Becker 1953: 362; Bright 1968b: 1320; Bright & Stark 1973: 77; Chamberlin 1925, 1939: 453; Keen 1929: 42, 56, 1948: 147; Kirk 1969; Kleine 1934a: 175; Lange 1937: 174; Leng 1920: 342; Schedl 1960a: 75, 1969: 78; Schwerdtfeger 1960b; Wood, S. L. 1948: 75, 1951a: 128, 1972a: 423. (**tx**) Bright 1968b: 1320; Chamberlin 1939: 453; Hopkins 1915b: 62, 66; Keen 1929: 42; Schedl 1952d: 123, 1955g: 46–47; Schwerdtfeger 1960b: 254–256; Wood, S. L. 1972a: 422, 1972e: 198.

***ipidia* Schedl** 1972h: 63. Holotype ♀; 2 km N Ruwong Sawmill, New Ireland Dist., New Guinea.
Distribution: Australia, Fiji Islands, New Ireland Island.
Hosts: *Beilschmiedia obtusifolia*, *Canarium* sp.
Notes: (3) Schedl 1975h: 368 (described male).
References: (**bv**) Gray, B. 1974c. (**hb**) Gray, B. 1974c. (**ds**) Schedl 1980b: 184. (**tx**) Schedl 1972h: 63, 1975f: 368, 1979c: 128.

planodeclivis Browne 1974a: 70. Holotype ♀; Fiji: Viti Levu, Galoa; BMNH, London. Synonymy: Schedl 1980d: 122.
References: (**hb**) Roberts 1977a: 264. (**ds**) Browne 1974a: 65, 70; Roberts 1977a: 264. (**tx**) Browne 1974a: 65, 70; Schedl 1980d: 122.

***irregularis* Eggers** 1923a: 211. Holotype ♀; Batoe Insel (Poeloe Pini); Natura Artis Magistra, Amsterdam.
Distribution: Indonesia (Batu Island).
References: (**tx**) Eggers 1923a: 211–212, 1927c: 99; Schedl 1939f: 44.

***ishidai* Niisima** 1909: 156. Holotype ♀; Jozankei, Sapporo, Japan; Nobuchi Collection, Ibaraki.
Distribution: Asia (Japan).
References: (**ds**) Kleine 1913b: 161, 1914b: 261; Murayama 1954b: 179; Nobuchi 1985c: 25. (**tx**) Hagedorn 1910a: 154; Murayama 1954b: 179; Niisima 1909: 153–157; Schedl 1934f: 1646.

***jambolanaensis* Schedl** 1951j: 22. Lectotype ♀; Madagascar, Tsimbazaza; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 129.
Distribution: Madagascar.
Hosts: *Eugenia jambolana*.
References: (**hb**) Paulian 1951: 29. (**ds**) Paulian 1951: 29; Schedl 1977b: 197. (**tx**) McNamara 1977: 200; Schedl 1951j: 22, 1977b: 197, 1979c: 129.

***japonicus* Nobuchi** 1981b: 150. Holotype ♀; Ohshima, Wakayama, Japan; Nobuchi Collection, Ibaraki.
Figures: Nobuchi 1981b: 153.
Distribution: Asia (Japan).
Hosts: *Castanopsis cuspidata*, *Quercus myrsinaefolia*.
References: (**tx**) Nobuchi 1981b: 150–153.

***javanus* Eggers** 1923a: 188. Lectotype ♀; Java; USNM, Washington, designated by Anderson & Anderson 1971: 17.
Figures: Nunberg 1959a:pl. 23, figs. 7–8.
Distribution: Asia (Malaya), Indonesia (Borneo, Java, Sumatra).
Hosts: *Adina nubescens*, *Artocarpus* sp., *Dipterocarpus baudii*, *Dryobalanops oblongifolia*, *Eugenia* sp., *Grewia tomentosa*, *Shorea leprosula*, *S. parvifolia*, *S. sumatrana*, *Swietenia macrophylla*, *Xanthophyllum* sp.
References: (**ec**) Kalshoven 1960b. (**hb**) Browne 1961c: 138–139; Kalshoven 1959c: 146, 1960a: 120. (**ds**) Browne 1961c: 138, 1981b: 599; Kalshoven 1959c: 146; Nobuchi 1979a: 406; Nunberg 1961b: 610; Schedl 1936d: 4, 1974c: 262. (**tx**) Anderson, W. H. & Anderson 1971: 17; Eggers 1923a: 188–189, 1930d: 198; Nunberg 1959a: 430; Schedl 1933e: 101, 1942d: 5, 1951i: 43, 1954a: 141, 1960h: 109.

perdix Schedl 1939e: 351. Lectotype ♀; Malaya, Selangor: Sungei Buloh For. Res.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 189. Synonymy: Schedl 1960h: 109.
References: (**cn**) Browne 1951. (**hb**) Browne 1941. (**ds**) Beeson 1961: 308; Yunus & Hua 1980: 230. (**tx**) Schedl 1939e: 351–352, 1942a: 171, 1960h: 109, 1979c: 189.

***jongaensis* Schedl** 1941d: 404. Lectotype ♀; Mt. Cameroon, Jonga, 5000 ft., Onyanga, 5400 ft.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 130.
Distribution: Africa (Cameroon).
References: (**tx**) Schedl 1941d: 404, 1962j: 305, 1979c: 130.

***justus* Schedl** 1931c: 339. Holotype ♀; Java, Buitenzorg; Schedl (1979c: 130) Collection in NHMW, Wien.
Distribution: Asia (Malaya), Indonesia (Java).
Hosts: *Cinnamomum* sp.
References: (**ec**) Kalshoven 1960b. (**hb**) Browne 1961c: 115; Kalshoven 1959c: 151, 1960a: 120. (**ds**) Browne 1955: 356, 1981b: 598; Kalshoven 1959c: 151; Schedl 1971c: 364. (**tx**) Schedl 1931c: 339, 1953c: 290, 1953f: 81, 1979c: 130.

***kadoyamaensis* Murayama** 1934c: 290. Holotype ♀; Kadoyama, Kumamoto pref. and Tarumidzu and Nagao, Kagoshima pref., Kiushu, Japan; Murayama Collection in USNM, Washington.
Distribution: Asia (Japan/ Taiwan).
Hosts: *Diospiros kaki*.
References: (**ec**) Banno, Mikata, & Kodama 1983: 445. (**ds**) Choo & Woo 1985: 166; Murayama 1949c: 103, 1954b: 179, 1955: 100, 102; Nobuchi 1967: 22, 1985c: 25. (**tx**) Murayama 1934c: 290, 1936a: 144, 1954b: 179, 1955: 100, 102.

***kaimochii* Nobuchi** 1981b: 143. Holotype ♀; Takimoto, Kumano, Wakayama, Honshu, Japan; Nobuchi Collection, Ibaraki.
Figures: Nobuchi 1981b: 153.
Distribution: Asia (Japan).
Hosts: *Castanopsis cuspidata*.
References: (**tx**) Nobuchi 1981b: 143, 153.

***kajangensis* Schedl** 1942a: 193. Lectotype ♀; Malaya, Pahang, Kajang; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 131.
Distribution: Asia (Malaya).
Hosts: *Canarium* sp., *Shorea leprosula*.
Notes: (3) Browne 1949b: 893 (lapsus calami corrected).
References: (**hb**) Browne 1961c: 107. (**tx**) Browne 1949b: 893; Schedl 1942a: 193, 1979c: 131.

***kalshoveni* (Schedl)** 1934d: 85 (*Notoxyleborus*). Lectotype ♀; Java, Mount Gede, 1800 m; Schedl Collection in NHMW, Wien.
Distribution: Indonesia (Java).
Hosts: Rattan.
References: (**hb**) Kalshoven 1959c: 164. (**ds**) Browne 1962c: 202; Kalshoven 1959c: 164. (**tx**) Schedl 1934d: 85.

***katangensis* Eggers** 1932d: 297. Holotype ♀; Congostaat (Elisabethville und Katanga: Mulando); MRCB, Tervuren.
Figures: Nunberg 1963b:pls. 18–19, figs. 1, 7.
Distribution: Africa (Zaire).
Hosts: *Garcinia punctata*, *Scorodophloeus zenkeri*.
References: (**hb**) Loyttyniemi, Beaver, & Loyttyniemi 1984; Schedl 1962j: 110. (**ds**) Beaver & Loyttyniemi 1985a: 74, 1989; Ferreira 1965: 1123; Schedl 1962j: 110, 1971c: 365, 1972e: 284. (**tx**) Beaver & Loyttyniemi 1989; Eggers 1932d: 297; Nunberg 1963b: 38, pls. 18–19; Schedl 1953d: 98, 1959p: 20, 1962j: 110–111, 1979c: 131.

***katoi* Browne** 1986c: 666. Holotype ♀; Borneo: Kudat (Sabah) to Nagoya (Japan), imported; BMNH, London.
Distribution: Indonesia (Borneo).
Hosts: *Dipterocarpus* sp. log.
References: (**tx**) Browne 1986c: 666.

***kauaiensis* Perkins** 1900: 174. Lectotype ♀; Kauai, Halemanu and above Waimea, 4000 ft.; BMNH, London, designated by Samuelson 1981: 77.
Figures: Samuelson 1981: 63.
Distribution: Hawaiian Islands (Kauai).
Hosts: *Cheirodendron* sp.
Notes: (3) Schedl 1934g: 177 and Samuelson 1981: 77 (described male).
References: (**ds**) Beeson 1938b: 392; Hagedorn 1910d: 106; Kleine 1913b: 161, 1914b: 303; Swezey

1941: 122. (**tx**) Hagedorn 1910a: 154; Perkins 1900: 174; Samuelson 1981: 63, 77; Schedl 1934g: 177, 1941f: 116.

***kersianus* Browne** 1981a: 132. Holotype ♀; Kuala Kersi (New Britain) to Gamagori (Japan), imported.
Distribution: Fiji Islands, New Britain Island.
References: (**ds**) Browne 1983b: 77. (**tx**) Browne 1981a: 132.

***khinganensis* Murayama** 1943b: 100. Holotype ♀; Yakeshi, Ouest de Gr. Khingan [Manchuria]; Murayama Collection in USNM, Washington.
Distribution: Asia ("Manchuria" in China).
Hosts: *Pinus sylvestris*.
References: (**tx**) Murayama 1943b: 100.

***kojimai* Murayama** 1936a: 143. Holotype ♀; d'Uchinoura, Kiushu; Murayama Collection in USNM, Washington.
Distribution: Asia (Kiushu in Japan).
Hosts: *Quercus stenophylla*.
References: (**ds**) Murayama 1936a: 134, 1949c: 103, 1954b: 203; Nobuchi 1985c: 25. (**tx**) Murayama 1936a: 134, 143–144, 1954b: 203.

***kraunhiae* Niisima** 1910a: 14. Holotype ♀; Kumanotaira, Japan; Nobuchi Collection, Ibaraki.
Distribution: Asia (Japan).
Hosts: *Westalia floribunda*.
References: (**ds**) Kleine 1934a: 174; Nobuchi 1985c: 25. (**tx**) Murayama 1954: 179; Niisima 1910a: 14; Schedl 1934f: 1646.

***kumamotoensis* Murayama** 1934c: 288. Holotype ♀; Jisso, Kagoshima Pref., Kiushu, Japan; Murayama Collection in USNM, Washington.
Distribution: Asia (Japan).
Hosts: *Cinnamomum camphora*, *Machilus* spp., *Quercus* sp., *Tricalysis viridiflora*.
References: (**ds**) Murayama 1949c: 103, 1954b: 179; Nobuchi 1985c: 25. (**tx**) Murayama 1934c: 288–289, 295, 1954b: 179.

***laciniatus* Hagedorn** 1910b: 7. Holotype ♀; Sumatra; Hagedorn Collection in Hamburg Museum, lost?, now in NHMW, Wien.
Distribution: Indonesia (Sumatra).
Notes: (1) The holotype apparently was on loan to Eggers when it came into the possession of Schedl (see Introduction).
References: (**ds**) Hagedorn 1910d: 106; Kleine 1913b: 161, 1914b: 286. (**tx**) Eggers 1923a: 208–209; Hagedorn 1910a: 155, 1910b: 7; Schedl 1979c: 135.

***lacunatus* Wood** 1974a: 37. Holotype ♀; Turrialba, Cartago, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: *Theobroma cacao*.
References: (**ds**) Wood, S. L. 1982b: 814. (**tx**) Wood, S. L. 1974a: 37, 1982b: 814.

***laetus* Niisima** 1909: 159. Lectotype ♀; Sapporo (Yoshikawa); Nobuchi Collection, Ibaraki, designated by Nobuchi 1981d: 151.
Figures: Nobuchi 1981d: 151–153.
Distribution: Asia (Japan).
Hosts: *Castanea crenata*, *Prunus apetala*, *Quercus mongolica*.
References: (**ds**) Kleine 1913b: 161, 1914b: 261; Nobuchi 1985c: 25. (**tx**) Eggers 1923a: 177; Hagedorn 1910a: 155; Niisima 1909: 158–159; Nobuchi 1981a: 151–153; Schedl 1934g: 1646.

***lanaiensis* Perkins** 1900: 176. Lectotype ♀; Lanai, 2000 ft.; BMNH, London, designated by Samuelson 1981: 78.
Figures: Samuelson 1981: 63.
Distribution: Hawaiian Islands (Lanai).
Hosts: *Planchonella sandwicense*, *Sapindus oahuensis*.
References: (**ds**) Beeson 1938b: 293; Hagedorn 1910d: 106; Kleine 1913b: 161, 1914b: 303; Samuelson 1981: 78; Schedl 1975b: 353; Swezey 1941: 122, 1954: 173. (**tx**) Hagedorn 1910a: 155; Perkins 1900: 176; Samuelson 1981: 63, 78; Schedl 1941f: 115, 1979c: 136.

***latecarinatus* Schedl** 1936d: 10. Syntypes ♀; Malay Peninsula, Selangor: Semangkok For. Res.; BMNH, London and Schedl Collection in NHMW, Wien.
Distribution: Asia (Malaya).
Hosts: *Shorea scutulata*.
References: (**hb**) Browne 1941. (**ds**) Beeson 1961: 306; Browne 1961c: 137. (**tx**) Schedl 1936d: 10–11, 1942d: 31, 1958k: 145.

***latecornis* Schedl** 1969a: 212. Holotype ♀; Philippine Is., Abulug to Tokyo (Japan), imported; PPST, Tokyo.
Figures: Nobuchi 1978a:pl. 2.
Distribution: Philippine Islands.
Hosts: Lauan log.
References: (**ds**) Browne 1980d: 492; Nobuchi 1978a: 21; Ohno, Yoneyama, & Nakazawa 1987: 94. (**tx**) Nobuchi 1978a:pl. 2, 1983: 303; Schedl 1969a: 212–213, 1979c: 136.

***latipennis* Schedl** 1976a: 75. Holotype ♀; V. Vera, M. Grosso, Lon. 55 degrees 35 minutes, Lat. 12 degrees 46 minutes [Brazil]; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1976a: 75.

***lativentris* Schedl** 1942a: 191. Holotype ♀; Malaya, Pahang, Cameron's Hill; BMNH, London.
Distribution: Asia (Malaya).
References: (**hb**) Browne 1961c: 164. (**tx**) Schedl 1942a: 191, 1942c: 187.

***latus* Eggers** 1923a: 177. Syntypes 2 ♀; Sarawak auf Borneo und Ajer Mantcior auf Sumatra; MCG, Genova and Eggers Collection (USNM, Washington, or NHMW, Wien?).

Figures: Nunberg 1978: 114.
Distribution: Asia (Malaya), Indonesia (Borneo, Sumatra).
Hosts: *Castanopsis sumatrana*, *Intsia palembanica*, *Parinari griffithianum*, *Pasania sundaica*, *Shorea balanocarpoides*, *S. leprosula*, *S.* sp.
References: (**hb**) Browne 1961c: 105. (**ds**) Browne 1961c: 105. (**tx**) Eggers 1923a: 177; Nunberg 1978: 113, 114; Schedl 1950g: 895.

***lepidus* Bright** 1972d: 74. Holotype ♀; Irish Town, St. Andrew Parish, Jamaica; CNCI, Ottawa.
Figures: Bright 1972d: 95.
Distribution: Antilles Islands (Jamaica).
References: (**ds**) Bright 1985c: 174. (**tx**) Bright 1972d: 74, 95, 1985c: 174; McNamara 1977: 200.

***leverensis* Browne** 1986c: 667. Holotype ♀; Solomon Islands: Lever Harbor to Nagoya (Japan), imported; BMNH, London.
Distribution: Solomon Islands.
Hosts: *Terminalia* sp. log.
References: (**tx**) Browne 1986c: 667.

***lignographus* Schedl** 1953e: 28. Lectotype ♀; Fukien, Kuatun, China; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 138.
Distribution: Asia (Fujian in China).
References: (**tx**) Schedl 1953e: 28, 1958j: 241, 1979c: 138.

***lineatus* Eggers** 1930d: 177. Holotype ♀; Bengal (Senchal Range, 6500 feet, Darjeeling); FRI, Dehra Dun.
Distribution: Asia (Bengal, Uttar Pradesh in India).
Hosts: *Alnus hepalensis*, *Madrilus edulis*, *Symplocos theaefolia*.
Notes: (3) This may belong to *Cyclorhipidion*.
References: (**bv**) Naumann-Etienne 1978a. (**cn**) Halperin 1976a; Marcu 1930: 327–336; Mathur & Singh 1961a: 84; Roonwal 1954: 59; Zwolfer 1962, 1963. (**ec**) Krieg 1961: 185; Naumann-Etienne 1978a; Schimitschek 1967. (**hb**) Naumann-Etienne 1978a. (**ds**) Beeson 1930, 1961: 307; Halperin 1976a; Kleine 1934a: 174; Mathur & Singh 1961a: 84; Roonwal 1954: 59. (**tx**) Beeson 1930: 245; Eggers 1930d: 177–178; Schedl 1979c: 139.
melanocranis Beeson 1930: 218. Holotype ♀; Bengal: Lopchu, 5000 feet, Senchal Range, Darjeeling; FRI, Dehra Dun. Synonymy: Wood 1992:(in press).
References: (**ds**) Beeson 1930: 216, 218, 245, 1961: 307; Wood, S. L. 1992:(in press).

***littoralis* Perkins** 1900: 179. Holotype ♀; Molokai, at sea level; BMNH, London.
Distribution: Hawaiian Islands (Molokai).
References: (**ds**) Beeson 1938b: 293; Hagedorn 1910d: 106; Kleine 1913b: 161, 1914b: 302; Samuelson 1981: 78. (**tx**) Hagedorn 1910a: 155; Perkins 1900: 179; Samuelson 1981: 78.

***longicollis* Browne** 1977c: 61. Holotype ♀; Samoa: Upolu, 700 feet; BMNH, London.
Distribution: Samoan Islands.
Hosts: *Planchonella samoensis*.
References: (**ds**) Beaver 1976b: 540. (**tx**) Browne 1977c: 61.

***longidens* Eggers** 1930d: 181. Holotype ♀; Assam (Shillong); FRI, Dehra Dun.
Distribution: Asia (Assam in India).
References: (**tx**) Eggers 1930d: 181–182; Schedl 1979c: 140.

***longipennis* Eggers** 1933b: 25. Holotype ♀; Franz. Guayana: Riviere Lumier (Tumuc Humac); MNHN, Paris.
Distribution: South America (Cayenne).
Notes: (3) Eggers 1933b: 24 (in key).
References: (**tx**) Eggers 1933b: 2, 24–26; Schedl 1934f: 1646.

***longipilus* Eggers** 1926b: 146. Lectotype ♀; Kumanotaira bei Karuisawa; USNM, Washington, designated by Anderson & Anderson 1971: 18.
Distribution: Asia (Japan).
References: (**ds**) Murayama 1952a: 17, 1954b: 180; Nobuchi 1985c: 25. (**tx**) Anderson, W. H. & Anderson 1971: 18; Eggers 1926b: 146–147; Murayama 1950: 64, 1952a: 17, 1954b: 180; Schedl 1934f: 1646, 1941d: 404.

***lubricus* Schedl** 1941d: 404. Holotype ♀; Congo; Schedl Collection in NHMW, Wien.
Distribution: Africa (Zaire).
References: (**tx**) Schedl 1941d: 404, 1962j: 331, 1979c: 142.

***luteus* Schedl** 1937b: 403. Lectotype ♀; Belgisch-Kongo, Faradje, Male, Likimi Bayange, Aba; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 143.
Distribution: Africa (South Africa/ Zaire), Madagascar.
References: (**ds**) Schedl 1962j: 305, 1977b: 166. (**tx**) Schedl 1937b: 403–404, 1942c: 187, 1962j: 305, 1977b: 166, 1979c: 143.

***macer* Blandford** 1898b: 218. Lectotype ♀; El Tumbador, Guatemala; BMNH, London, designated by Wood 1982b: 841.
Distribution: Antilles Islands (Puerto Rico), North America (Costa Rica/ El Salvador/ Guatemala/ Veracruz in Mexico/ Nicaragua/ Panama), South America (Colombia/ Venezuela).
Hosts: *Theobroma cacao*, *Trochis racemosa*.
References: (**hb**) Wood, S. L. 1982b: 841. (**ds**) Atkinson & Equihua 1988: 102; Blackwelder 1947: 780; Bright 1972a: 1385, 1981c: 157, 1985c: 157; Estrada & Atkinson 1988: 207; Ferrer 1942; Hagedorn 1910d: 106; Kleine 1913b: 161, 1914b: 372; Nunberg 1963c: 98; Schedl 1960a: 76, 1977e: 43; Wood, S. L. 1982b: 841. (**tx**) Blandford 1898b: 218; Bright 1985c: 174; Hagedorn 1910a:

155; Schedl 1940a: 361, 1948d: 38, 1960a: 76; Wood, S. L. 1982b: 841.

***machili* Niisima** 1910a: 14. Syntypes ♀; Tokio: Nobuchi Collection, Ibaraki.
Distribution: Asia (Japan).
Hosts: *Machilus japonica*.
References: (**ds**) Kleine 1934a: 174; Murayama 1954b: 204; Nobuchi 1985c: 25–26. (**tx**) Murayama 1954b: 204; Niisima 1910a: 14; Schedl 1934f: 1646.

***macropterus* Schedl** 1935f: 271. Lectotype ♀; Malay Peninsula: Sungar-Lyang; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 143.
Figures: Nobuchi 1978a:pl. 3.
Distribution: Asia (Malaya), Indonesia (Borneo), Philippine Islands (Luzon).
Hosts: *Balanocarpus heimii*, *Shorea aericea*, *S. macroptera*, *S. ovalis*, *Vatica* sp.
References: (**ds**) Browne 1961a: 305, 1961c: 105, 1962c: 201, 1980c: 483, 1981b: 598; Nobuchi 1978a: 29; Ohno, Yoneyama, & Nakazawa 1982b: 8; Schedl 1966b: 59, 1966g: 32, 1975a. (**tx**) Nobuchi 1978a:pl. 3; Schedl 1935f: 270–271, 1951i: 92–93, 1975a: 458, 1979c: 143.

***madagascariensis* Schaufuss** 1891: 23. Holotype ♀; Madagascar; Hamburg Museum, lost.
Distribution: Madagascar, Seychelles Islands.
Hosts: *Dalbergia* sp., *Elaeocarpus* sp., *Eucalyptus robusta*, *Gouania glandulosa*, *Pinus khasia*, *Ravensara* sp.
References: (**hb**) Schedl 1977b: 160. (**ds**) Alluaud 1900: 439; Anonymous 1892: 164; Fairmaire 1892b; Frappa 1933: 179; Hagedorn 1910d: 106; Kleine 1913b: 161, 1914b: 327; Sampson 1914: 384, 386; Schedl 1969d: 12, 1970d: 234, 1975k: 278, 1977b: 160. (**tx**) Eggers 1920: 42; Fairmaire 1892b; Hagedorn 1910a: 155, 1913b: 256; Sampson 1914: 384, 386; Schaufuss 1891: 23; Schedl 1950d: 32, 1953d: 71, 100, 1961e: 146, 1969d: 12, 1970d: 234, 1977b: 160, 1979c: 145.

***magnificus* Wood** 1992b: 87. Holotype ♀; Junin [presumably Peru]; Wood Collection.
Distribution: South America (Peru).
References: (**tx**) Wood, S. L. 1992b: 87.

***magnispinatus* Beaver** *in* Beaver & Loyttyniemi 1985: 75. Holotype ♀; Zambia, Lusaka; BMNH, London.
Distribution: Africa (Zambia).
References: (**tx**) Beaver & Loyttyniemi 1985: 75.

***magnus* Niisima** 1910a: 11. Syntypes ♀; Japan; Nobuchi Collection, Ibaraki.
Distribution: Asia (Japan).
Hosts: *Cinnamomum camphora*.
References: (**ds**) Murayama 1954b: 204, 1955: 102; Nobuchi 1985c: 26. (**tx**) Murayama 1954b: 204, 1955: 102; Niisima 1910a: 11; Schedl 1934f: 1646.

***maiche* (Stark)** 1936: 142 (*Anisandrus*). Syntypes ♀; Ussuri, USSR; IZL, Leningrad.
Figures: Nunberg 1959a:pl. 24, fig. 3–4.
Distribution: Asia (Heilongjiang in China/ E USSR).
Hosts: *Acer* spp., *Alnus* spp., *Betula* spp., *Corylus mandshurica*, *Fraxinus mandshurica*, *Rhododendron amurense*, *Ulmus* sp.
References: (**ds**) Krivolutskaya 1983; Krivolutskaya & Kupyanskaya 1970. (**tx**) Kurenzov 1941a: 192; Michalski 1969: 570; Nunberg 1959a: 431; Pfeffer 1944a: 131; Schedl 1952k: 158, 1979c: 145; Stark 1936: 142, 1950: 229, 1952: 430. (**ms**) Pfeffer 1944a: 131.
maiche Eggers 1942c: 36. Holotype ♀; Ussuri, USSR; Eggers Collection, apparently in NHMW, Wien. Synonymy: Pfeffer 1944a: 131.
References: (**hb**) Stark 1952: 430. (**ds**) Stark 1936e: 142, 1952: 430. (**tx**) Eggers 1942c: 36; Pfeffer 1944a: 131; Stark 1952: 430; Schedl 1952k: 158; Stark 1950: 229.

***major* (Stebbing)** 1909: 19 (*Phloeosinus*). Syntypes 5 ♀; Kachugaon Forest, Goalpara Sal Forests, Assam, India; FRI, Dehra Dun.
Figures: Nunberg 1959a:pl. 24, figs. 5–6.
Distribution: Asia (Burma/ Andaman Islands, Bengal in India/ Malaya).
Hosts: *Dipterocarpus turbinatus*, *Palaquium* sp., *Shorea leprosula*, *S. robusta*.
References: (**bv**) Beeson 1917: 1–5. (**cn**) Grandi 1951; Kalshoven 1924c; Mathur & Singh 1961a: 46; Pierce, W. D. 1917: 193; Stebbing 1914: 590. (**ec**) Beeson 1923; Bhatia 1950; Stebbing 1914: 590. (**hb**) Beeson 1916a: 221, 1917, 1923; Bhatia 1950; Browne 1961c: 105; Grandi 1951; Kalshoven 1924c; Paulian 1949a: 988; Stebbing 1909b: 19, 1914: 590; Zocchi 1956: 144. (**ds**) Beeson 1916a, 1923, 1930: 245, 1961: 307; Bhatia 1950; Browne 1961c: 105; Kleine 1914b: 227, 1934a: 174; Mathur & Singh 1961a: 46; Pierce, W. D. 1917: 193. (**tx**) Beeson 1930: 245; Eggers 1923a: 211, 1927c: 99; Jeannel 1949: 988; Nunberg 1959a: 431; Sampson 1922b: 152; Schedl 1935f: 271, 1942a: 194; Stebbing 1907: 36–37, 1909b: 19, 1914: 590; Zocchi 1956: 141.

***majusculus* Schedl** 1951m: 124. Syntypes 3 ♀; Brasilien, Bahia, Cachoerinha-Una; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
Notes: (1) Schedl 1979c: 146 (citation of holotype invalid).
References: (**tx**) Schedl 1951m: 124, 1979c: 146.

***malayensis* Browne** 1981a: 132. Holotype ♀; Johore Bahru (Malaya) to Nagoya (Japan), imported; BMNH, London.
Distribution: Asia (Malaya).
References: (**tx**) Browne 1981a: 132.

***malgasicus* Schedl** 1961e: 148. Holotype ♀; Madagascar, Perinet; IRSM, Madagascar.

Distribution: Madagascar.
Hosts: *Cinchona succerubra*, *Piptadenia pervillei*.
Notes: (1) Originally named as a subspecies of *subtuberculatus*, but rather than elevate this name to specific rank Schedl (1965c: 71) renamed it *similaris*.
References: (**tx**) Schedl 1961e: 148, 1965c: 71, 1979c: 245.

similaris Schedl 1965c: 71. Holotype ♀; Madagascar, Antaniditra pres Perinet; IRSM, Madagascar, no status [see note 1].
Notes: (1) This name was based on the holotype of *subtuberculatus* subsp. *malgasicus*, a valid species-group name, and as such it is an objective synonym.
References: (**tx**) Schedl 1961e: 148, 1965c: 71, 1977b: 166.

***maniensis* Browne** 1981a: 130. Holotype ♀; Tanjong Mani (Borneo) to Nagoya (Japan), imported; BMNH, London.
Distribution: Indonesia (Borneo).
References: (**tx**) Browne 1981a: 130.

***marginicollis* Schedl** 1936h: 64. Holotype ♀; Luzon; Schedl Collection in NHMW, Wien.
Distribution: Philippine Islands (Luzon).
References: (**ds**) Schedl 1966b: 60. (**tx**) Nobuchi 1983: 303; Schedl 1936h: 64–65, 1979c: 149.

***mascareniformis* Eggers** 1927b: 400. Holotype ♀; Sumatra (Si Rambe); MCG, Genova.
Distribution: Asia (Malaya), Indonesia (Sumatra).
References: (**ds**) Browne 1961c: 104. (**tx**) Eggers 1927b: 400–401; Schedl 1958k: 154; Wood, S. L. 1989: 177.

onerosus Schedl 1942a: 185. Holotype ♀; Perak, Larut Hills, 3400 Fuss; BMNH, London. Synonymy: Wood 1989: 177.
References: (**tx**) Schedl 1942a: 185, 1951i: 64, 1958k: 154; Wood, S. L. 1989: 177.

***mauiensis* Perkins** 1900: 175. Lectotype ♀; Maui, Haleakala (5000 ft.); BMNH, London, designated by Samuelson 1981: 79.
Figures: Samuelson 1981: 63.
Distribution: Hawaiian Islands (Maui, Molokai).
Hosts: *Cheirodendron trigynum*.
Notes: (3) Samuelson 1981: 79 (described male).
References: (**ds**) Beeson 1938b: 293; Hagedorn 1910d: 106; Kleine 1913b: 161, 1914b: 303, 1934a: 174; Samuelson 1979: 79; Swezey 1941: 124. (**tx**) Hagedorn 1910a: 155; Perkins 1900: 175; Samuelson 1981: 63, 79; Schedl 1979c: 150.

***meritus* Wood** 1974a: 40. Holotype ♀; Tapanti, Cartago, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: *Conostegia oerstediana*, *Miconia* spp., *Myrica pubescens*, *Phoebe mexicana*.
References: (**hb**) Wood, S. L. 1982b: 823. (**ds**) Wood, S. L. 1982b: 823. (**tx**) Wood, S. L. 1974a: 40, 1982b: 823.

***mesoleiulus* Schedl** 1979g: 108. Holotype ♀; Papua, Bulolo, Morobe District, Upper Manki L. A. [New Guinea]; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1979g: 108.

***metacuneolus* Eggers** 1940d: 150. Holotype ♀; Java (Buitenzorg); Kalshoven Collection.
Distribution: Asia (Malaya/ Sri Lanka/ Taiwan), Indonesia (Java).
Hosts: *Buchanania arborescens*, *Mangifera indica*, *M. odorata*, *Swietenia mahagoni*.
References: (**cn**) Gope & Roy 1986. (**hb**) Browne 1961c: 123; Kalshoven 1959c: 153. (**ds**) Browne 1961c: 123; Gope & Roy 1986; Kalshoven 1959c: 153; Nobuchi 1967: 22; Schedl 1959a: 509, 1966b: 61. (**tx**) Eggers 1940d: 150; Nobuchi 1983: 303; Schedl 1939n: 14, 1951i: 85–86, 1952c: 62, 1959a: 509, 1979c: 152.

***meuseli* Reitter** 1905: 249. Holotype ♀; Ussunsk (Sajan occid.), Ostsibirien; NHMB, Budapest.
Distribution: Asia (E USSR).
References: (**hb**) Stark 1952: 440. (**ds**) Hagedorn 1910d: 106; Kleine 1913b: 161; Stark 1952: 440. (**tx**) Hagedorn 1910a: 155; Niisima 1909: 161; Reitter 1905: 249–250, 1913a: 111; Schedl 1934f: 1646, 1952: 440.

***mindanaensis* Eggers** 1927c: 93. Holotype ♀; Philippinen: Mindanao, Prov. Lanao, Iligan; Eggers Collection (not listed by Anderson & Anderson 1971 or Schedl 1979c).
Distribution: Philippine Islands (Mindanao).
References: (**ds**) Schedl 1966b: 61. (**tx**) Eggers 1927c: 93–94; Nobuchi 1983: 303.

***minimus* Schedl** 1955b: 305. Holotype ♀; Philippinen, Luzon: Manila; Schedl Collection in NHMW, Wien.
Distribution: Indonesia (Java), New Guinea, Philippine Islands (Luzon).
References: (**ds**) Schedl 1966b: 62. (**tx**) Nobuchi 1983: 303; Schedl 1955b: 281, 305, 1979c: 154.

***minutus* Blandford** 1894d: 116. Syntypes 3 ♀; Inasa, Japan; BMNH, London.
Distribution: Asia (Japan/ Korea/ Malaya), Indonesia (Borneo, Java).
Hosts: *Alstonia* sp., *Elaeocarpus* sp., *Hopea ferrea*, *Rhodamnia trinervia*, *Shorea curtisii*, *S.* sp.
References: (**bv**) Choo, Woo, & Park 1988. (**hb**) Beaver & Browne 1978: 610; Browne 1961c: 119–120. (**ds**) Beaver & Browne 1978: 610; Blandford 1894c; Browne 1962c: 202, 1980a: 373, 1986a: 89, 1986c: 663; Choo 1983: 106; Choo & Woo 1985: 166; Choo, Woo, & Nobuchi 1988a: 134; Choo, Woo, & Park 1988; Hagedorn 1910d: 106; Kleine 1913b: 161, 1914b: 260; Murayama 1954b: 204, 1955: 100; Ohno et al. 1988a: 94. (**tx**) Blandford 1894d: 116; Browne 1955: 356; Choo 1983: 106; Hagedorn 1910a: 155; Murayama

1934: 290, 1954b: 204, 1955: 100; Schedl 1931c: 339–340, 1934g: 1646, 1958k: 147.

breviusculus Schedl 1942a: 196. Lectotype ♀; Malaya, Kuala Lumpur; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 47. Synonymy: Schedl 1958k: 147.
References: (**tx**) Schedl 1942a: 195, 1954a: 152, 1958k: 147, 1979c: 47.

pernitidus Schedl 1954a: 152. Holotype ♀; Java, Batoerraden; Schedl Collection in NHMW, Wien. Synonymy: Schedl 1958k: 147.
References: (**tx**) Schedl 1954a: 142, 152, 1958k: 147, 1979c: 190.

***misatoensis* Nobuchi** 1981b: 146. Holotype ♀; Misato, Wakayama [Japan]; Nobuchi Collection, Ibaraki.
Figures: Nobuchi 1981b: 153.
Distribution: Asia (Japan).
Hosts: *Castanopsis cuspidata*, *Quercus phillyraeoides*.
References: (**tx**) Nobuchi 1981b: 146, 153, 1985c: 204.

***miyazakiensis* Murayama** 1936a: 144. Holotype ♀; Sarukawa, Japan; Murayama Collection in USNM, Washington.
Distribution: Asia (Japan).
Hosts: *Quercus acuta*.
References: (**ds**) Murayama 1936a: 135, 144–145, 1951a: 4, 1954b: 204; Nobuchi 1985c: 26. (**tx**) Murayama 1936a: 135, 1954b: 204.

***molokaiensis* Perkins** 1900: 174. Lectotype ♀; Molokai, above 4000 ft.; BMNH, London, designated by Samuelson 1981: 80.
Figures: Samuelson 1981: 63.
Distribution: Hawaiian Islands (Lanai, Maui, Molokai, Oahu).
Hosts: *Cheirodendron trigynum*, *Ilex anomala*.
Notes: (3) Samuelson 1981: 80 (described male).
References: (**ds**) Beeson 1938b: 293; Hagedorn 1910d: 107; Kleine 1913b: 161, 1914b: 303, 1934a: 174; Samuelson 1981: 80; Swezey 1941: 124. (**tx**) Hagedorn 1910a: 155; Perkins 1900: 174; Samuelson 1981: 63, 80.

***moluccanus* Browne** 1985b: 292. Holotype ♀; Tg. Bonyosmiaf (Halmahera, Moluccas) to Nagoya (Japan), imported; BMNH, London.
Distribution: Indonesia (Moluccas).
Hosts: *Anisoptera* sp.
References: (**ds**) Ohno, Yoneyama, & Nakazawa 1987: 94. (**tx**) Browne 1985b: 292.

***monographus* (Fabricius)** 1792: 365 (*Bostrichus*). Holotype ♀; Germaniae; UZMC, Copenhagen.
Figures: Balachowsky 1949a: 222, Grune 1979: 154, Pfeffer 1989a:pl. 8, Postner 1974: 462.
Distribution: Africa (Algeria/ Morocco), Asia (Turkey), Europe (Albania/ Austria/ Belgium/ Bulgaria/ Czechoslovakia/ Denmark/ France/ Germany/ Greece/ Hungary/ Italy/ Luxemburg/ Netherlands/ Norway/ Poland/ Romania/ Sardinia/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslovia).
Hosts: *Quercus* spp., uncommon in *Castanea vesca*, *Fagus orientalis*.
Notes: (3) Roubal 1937: 67 (named an aberration as var. *nitidipennis*, no status).
References: (**ay**) Bugnion 1887b; Escherich 1923b: 488; Feytaud 1950a; Fisher 1954; Francke-Grosmann 1957; Lekander 1959d: 92; Marcus 1930: 644; Murayama 1933a: 1; Nunberg 1928a: 140; Schwerdtfeger 1929: 360. (**bv**) Grune 1979: 155; Meixner 1937: 1216. (**cn**) Acatay 1943a: 70; Androic 1966: 46; Barbey 1925: 434; Becker 1950; Blandford 1892b; Chorbadzhievo 1929; Comstock 1881: 274–275; Eckstein 1926: 575; Escherich 1916: 272–273, 1923b: 488; Falck 1911a: 166, 169; Feytaud 1950a; Fleischer 1877a; Gabler 1955; Garman 1905: 69; Georgescu et al. 1957: 357, 427; Goosen 1961; Grandi 1951; Groschke 1952b, 1953b; Herfs 1950: 7; Hess 1900: 37; Hess & Beck 1914: 290, 1927: 346; Houins 1939: 401–409; Jacquiot 1951a: 2, 1951b: 283–284; Judeich & Nitsche 1895: 546; Kamp 1954: 4; Kholodkovskii 1912: 279, 319; Kleine 1932a: 308; Konig, E. 1957: 108; Koppen 1882: 260; Maksimovic 1959: 3–13; Marcu 1926c: 64, 1962; Marcus 1930: 609–677; Marie 1922: 306–311; Moote 1867: 75–76; Negru 1966; Nusslin 1913: 205; Pierce, W. D. 1917: 40; Reissig 1949: 131; Rhumbler 1922: 329, 1927: 345; Schedl, W. 1964: 411–428; Schimitschek 1937c: 53, 1938c: 2119, 1939d: 2119, 1944: 180, 1955a: 137, 1955c: 86, 1961a: 154; Schuster 1918: 101; Schwerdtfeger 1929: 360, 1944a: 155, 1957a: 190; Strohmeyer 1906b: 330; Wachtl 1901: 381; Weber, H. 1926: 575; Wichmann 1927b: 350, 360, 1957a: 95; Wolff & Krausse 1922: 92; Zehntner 1900: 501; Zvierezomb-Zubovsky 1918: 1–36; Zwolfer 1949: 401. (**ec**) Apel 1983; Elliot & Morley 1907; Fisher 1954; Fleischer 1877a; Francke-Grosmann 1957; Gyorfi 1941b, 1943: 84, 1952b; Hartig 1844; Horn 1933: 173; Kleine 1909a: 49, 78, 1944: 73; Kostenko 1929; Michalski & Ratajczak 1989; Neger 1909b: 408, 1911a: 50; Nikitsky 1978; Norris 1979; Nosek 1959a: 118, 1959b: 85; Novak 1952: 417; Nusslin 1927: 345; Perris 1856a: 199; Pfeffer 1928b: 2, 1943b: 182; Rondani 1873: 140; Ruhm 1956b: 4; Schedl, W. 1964; Schimitschek 1941: 317, 1955a: 137; Schuster 1918: 101; Schwerdtfeger 1929: 360, 1944a: 185, 1957a: 190; Slaby 1947: 375; Speyer 1937: 30; Uchastnova 1985; Vite 1952a: 105; Wichmann 1955a: 45; Woodring 1966c: 133. (**hb**) Acatay 1943a: 70; Altum 1881c: 316; Anonymous 1920: 124; Apel 1983; Baeta Neves 1943a; Barbey 1901: 10, 28, 108, 1913, 1925: 434; Bargmann 1906; Becker 1950; Blandford 1892b; Bugnion 1887b; Cecconi 1905, 1924; Chorbadzhievo 1929; Dombrowsky 1887; Duprez 1944; Dyakowski 1911; Eckstein 1889, 1926: 575, 1928; Eggers 1908d; Eichhoff 1881a: 54, 286; Escherich 1923b: 488;

Everts 1902; Falck 1916: 166, 169; Feytaud 1950a; Fisher 1954; Fleischer 1877a; Fuchs 1904a; Furst 1888: 109, 113; Gabler 1955; Grandi 1951; Groschke 1952b, 1953b; Gyorfi 1936: 525, 528, 1957; Henschel 1876a: 216, 240, 1882b, 1895a: 192; Hergula 1939: 303; Hess 1900: 37; Hess & Beck 1914: 290, 1927: 346; Jacquiot 1951a: 2; Judeich & Nitsche 1895: 546; Karpinski & Strawinski 1948: 156; Karsch 1883: 142; Kholodkovskii 1912: 279, 319; Kleine 1932a: 308; Kleinert 1980: 75; Knotek 1894a: 559, 1896: 150; Konig, E. 1957: 108; Lengerken 1954: 318; Lepiney 1829: 313–321; Lepiney & Mimeur 1932: 45; Liese 1950: 142; Louzil 1961: 23; Lunardoni & Leonardi 1889: 485; Mjoberg 1906: 137; Nosek 1959a: 118, 1959b: 85; Nusslin 1898: 283, 1913: 205, 1927: 345; Palm 1953a: 23, 1954a: 185; Perris 1856a: 199; Peyerimhoff 1919: 257; Pfeffer 1942a: 3; Postner 1974: 466; Ratzeburg 1837: 130, 168, 1839: 157, 203; Rhumbler 1922: 329, 1927: 345; Rupertsberger 1880: 232; Schedl, W. 1964; Schimitschek 1944: 180, 1955a: 137; Schwerdtfeger 1944a: 185, 1957a: 190, 1981: 196; Spessivtsev 1913a: 101; Speyer 1937: 30; Stark 1926a: 330, 336, 1952: 434; Strohmeyer 1906b: 330, 1907a: 65, 1910b: 89; Tschorbadjiev 1929: 169; Vite 1952a: 105; Wachtl 1876a: 456, 1901: 381; Weber, H. 1926: 575; Wichmann 1927b: 350, 360; Wissman 1846: 25; Wolff & Krausse 1922: 92; Zehntner 1900: 501. (**ds**) Acatay 1943: 70; Acloque 1896; Andersch 1851; Androic 1966: 46; Audras & Schaefer 1957; Barthe 1896; Bau 1888; Bedel 1888b: 403, 419; Bejer-Petersen & Jorum 1977: 25; Bielz 1851, 1887; Blanchere & Robert 1889; Borchert 1951; Brakman 1966b: 206; Brancsik 1871, 1906; Browne 1980d: 493; Bucking 1932; Buresh & Lazarov 1956; Calwer 1884; Cecconi 1897, 1905; Choo 1983: 107; Choo & Woo 1985: 166; Chorbadzhievo 1924d, 1929; Csiki 1942c; Dejean 1821, 1825, 1837; Duprez 1938a; Eckstein 1923; Eggers 1904, 1912f; Endrodi 1958a, 1958b, 1981: 185, 1986: 217; Ericson & Sandin 1893; Escalera 1919; Escherich 1923b: 488, 1932b; Eyquem 1891; Favre 1890; Fedorov 1930; Fricken 1889: 354; Fuchs 1904a, 1905a; Gaubil 1849: 126; Gemminger & Harold 1872: 2686; Gozis 1875: 80; Grill 1895: 312; Grune 1979: 155; Gyllenhal 1827: 623; Gyorfi 1936: 525, 529, 1941b; Hagedorn 1910d: 107; Hansen, V. 1939, 1956, 1964: 463; Heinemann 1908a; Hellen 1947; Hennig 1954: 265; Henschel 1895a: 192; Heyden 1876: 300; Heyden, Reitter, & Weise 1883: 182, 1891: 674, 1901: 713; Hoffmann 1936; Holdhaus 1912: 454; Horion 1951; Illiger 1805: 129; Jansson 1915: 93; Jazentkovsky 1912: 292; Judeich & Nitsche 1895: 546; Kaltenbach 1874: 646; Karpinski 1932b: 54; Karpinski & Strawinski 1948: 156; Keler 1925b: 275; Kersten 1933: 75; Kestercanek 1881a: 12; Klefbeck & Sjoberg 1960: 232; Kleine 1912a: 262, 268, 1913a: 36, 1913b: 162, 1914a: 16, 1932a: 308, 1934a: 174; Knotek 1892a: 38, 1894a: 559; Koca 1905: 192; Kocher 1953: 133; Koppen 1882: 260; Kostenko 1929; Kraatz 1869: 60; Kurir 1947c: 31; Lacordaire 1866: 381; Langhoffer 1915c: 158, 1929: 1196–1203; Leclercq 1971; Lentz 1857: 140; Lepiney & Mimeur 1932: 45; Liese 1950: 142; Lokaj 1868: 64; Lomnicki 1886a: 243, 1913b: 148; Lucht 1987: 279; Lunardoni & Leonardi 1889: 485; Marcu 1926c: 64; Mjoberg 1903: 110; Munro 1921: 87; Murayama 1937b: 375, 1954b: 204; Murray 1853: 60; Negru 1965: 155, 1966b, 1968a: 456, 1968c: 91; Normand 1937: 269; Novak, P. 1952: 417, 1964; Nunberg 1928b: 88, 110, 1954: 62, 1960b: 156; Nusslin 1898: 283; Oliveira 1887: 329; Orest 1926c: 64; Ortzen 1886: 280; Paganetti-Hummler 1901: 150; Palm 1953b: 60, 1959: 27, 354; Perris 1876a: 255, 1877a: 415; Peyerimhoff 1919: 257; Pfeffer 1928b: 2, 1931b: 73, 1989a: 87; Pierce, W. D. 1917: 40; Pittioni 1943: 176; Postner 1974: 466; Prossen 1913: 84; Ragusa 1924: 117; Rapp 1934: 736; Ratzeburg 1837: 130, 168, 1839: 157, 203; Redtenbacher 1858: 835, 1874: 381; Reissig 1949: 131; Reitter 1869b: 155, 1894a: 90, 1916: 294; Romanyk 1959: 425; Roubal 1941: 275; Sainte-Claire 1914: 475; Sainte-Claire & Mequignon 1938: 449; Schaufuss 1915: 1238; Schaum 1859: 96, 1862: 101; Schedl 1961b: 185, 1964a, 1967c: 73, 1971b: 530, 1971d: 427, 1971f: 149, 1972n: 352, 1980a: 20, 1981b: 94; Schilsky 1909: 189; Schiodte 1873: 104; Schwerdtfeger 1981: 196; Seidlitz 1872: 396, 1891a: 568, 1891b: 613; Stark 1926a: 330, 336, 1926g: 154, 1927b: 89, 1952: 434; Stein 1868: 114; Stein & Weise 1877: 165; Stephens 1829a: 145, 1830: 358, 1839: 207; Stierlin 1898: 447; Stierlin & Gautard 1871: 293, 1906: 206; Sturm 1826: 102, 1843: 230; Thomson 1865: 370, 1868: 223; Tredl 1907: 18; Tressens 1952: 90; Tschorbadjiev 1929: 169; Villa & Villa 1833: 26; Vite 1953: 42; Wachtl 1876a: 456; Westhoff 1882: 240; Wichmann 1927a: 70, 1955a: 95, 1957a: 95. (**tx**) Acloque 1896; Altman 1844; Apel 1983; Aube 1959; Bach 1854; Balachowsky 1949a: 222–225; Barbey 1901: 10, 28, 108; Bedel 1888b: 403, 419; Beeson 1929: 247–248, 1938: 295; Beffa 1949; Bertolini 1872; Blandford 1892b; Brancsik 1871; Buysson 1880; Calwer 1858; Ceballos 1945; Choo 1983: 107; Chorbadzhievo 1924d; Dejean 1821, 1825; Dombrowsky 1887; Eggers 1912f: 29, 1920: 117, 1923a: 195, 1924, 1929e: 42, 1941a: 104, 1941b: 225; Eichhoff 1864b: 38, 1868a: 400, 1878b: 397, 1881a: 54, 286, 1883a: 116, 142; Endrodi 1957b; Escherich 1923b: 488; Escherich & Escherich 1897; Fabricius 1792: 365, 1801: 387; Fauvel 1889; Ferrant 1911; Ferrari 1867a: 20, 24, 1867b: 114; Fleischer 1927; Formanek 1907: 53; Fricken 1889: 354; Gabler 1955; Grune 1979: 154–155; Gyllenhal 1813: 356, 1827: 623; Hagedorn 1910a: 155; Hansen, V. 1956, 1964: 463; Henry 1892: 12; Henschel 1876a: 216, 240, 1895a: 192; Herbst 1793: 118; Hoff-

mann 1936: 44, 1942: 72–73; Hopkins 1914: 131, 1915b: 60; Houlbert 1922a: 13, pl. 1; Iablokoff-Khnzorian 1961: 89; ICZN 1968: 18; Jacquelin du Val & Fairmaire 1868: 107, 109; Judeich & Nitsche 1895: 546; Kalina 1975, 1977: 49; Karpinski & Strawinski 1948: 156; Knotek 1892a: 38; Kuhnt 1913: 1060; Lacordaire 1866: 381; Letzner 1891: 378; Leunis 1886: 181; Lovendal 1889b: 75, 1898: 191; Lucht 1987: 279; Lunardoni & Leonardi 1889: 485; Meixner 1937: 1216; Murayama 1930: 38, 1933a: 1, 1937b: 375, 1954b: 204; Negru 1966b; Nunberg 1928a: 140, 1954: 62; Panzer 1795a: 285; Paykull 1800: 149; Perris 1877a: 415; Pfeffer 1932b: 21, 1942a: 3, 1955a: 197, 1989a: pl. 8; Portevin 1935: 330; Postner 1974: 466; Quaschik 1953: 35; Ratzeburg 1837: 130, 168, 1839: 157, 203; Redtenbacher 1849a: 358, 1849b: 26, 1858: 835, 1874: 381; Reitter 1894a: 90, 1913a: 82, 1916: 294; Rey 1892b: 30; Rhumbler 1922: 329, 1927: 345; Roubal 1937: 67–68; Rupertsberger 1880: 232; Schedl 1934f: 1646, 1942a: 198, 1952f: 88, 1952i: 16, 1957d: 82, 1980a: 20, 1981b: 94; Schimitschek 1937c: 53–54, 1955c: 86; Seidlitz 1872: 396, 1891a: 568, 1891b: 613; Spessivtsev 1913a: 101–102, 1922a: 478, 491, 1925a: 180, 1931: 57–59; Stark 1952: 434; Stephens 1829a: 145, 1829b: 12, 1830: 358, 1839: 207; Stierlin 1898: 447; Stresemann et al. 1989: 353; Strohmeyer 1912b: 57; Thomson 1865: 370, 1868: 223; Wissmann 1846: 26; Zimmermann 1868: 145. (**ms**) Escherich 1932b; Heinemann 1908a; Schwappach 1924: 57.

tuberculosus Herbst 1793: 113 (*Bostrichus*). Syntypes, sex?; Deutschland; not located. Synonymy: Eichhoff 1878b: 397.

References: (**ds**) Illiger 1805: 129; Stein & Weise 1877: 165; Stephens 1829a: 145; Villa & Villa 1833: 28. (**tx**) Eichhoff 1878b: 397; Herbst 1793: 113; Stephens 1829a: 145.

***montanus* Niisima** 1910a: 13. Holotype ♀; Kumanotaira bei Karuisawa, Japan; Nobuchi Collection, Ibaraki.

Distribution: Asia (Japan).

Hosts: *Malus sieboldii*.

References: (**ds**) Kleine 1934a: 174; Murayama 1954b: 180; Nobuchi 1985c: 26. (**tx**) Murayama 1954b: 180; Nissima 1910a: 13; Schedl 1934f: 1646, 1960h: 106, 1979c: 159.

***morulus* Blandford** 1898b: 212. Holotype ♀; Costa Rica; BMNH, London.

Distribution: North America (Costa Rica/ Guatemala/ Michoacan in Mexico).

Hosts: *Bursera* sp., *Erythrina costaricensis*, *Spondias mombin*.

Notes: (3) Schedl 1951m: 73 incorrectly treated this as a synonym of *volvulus*. A report of this species from Paraguay is probably based on a misidentification (SLW).

References: (**ds**) Atkinson & Equihua 1985b: 238; Blackwelder 1947: 780; Hagedorn 1910d: 107; Kleine 1913b: 162, 1914b: 272; Schedl 1966f: 77, 1970e: 89; Wood, S. L. 1982b: 835. (**tx**) Blandford 1898b: 212; Hagedorn 1910a: 155; Schedl 1940a: 363, 1940c: 208, 1951m: 73; Nunberg 1959a: 443; Wood, S. L. 1982b: 835.

***mpangae* Browne** 1965a: 202. Holotype ♀; Uganda: Mpanga; BMNH, London.

Distribution: Africa (Uganda).

References: (**tx**) Browne 1965a: 202–203.

***muasi* Browne** 1961a: 306. Holotype ♀; Sarawak: Bako National Park; BMNH, London.

Distribution: Indonesia (Sarawak in Borneo).

Hosts: *Vatica* sp.

References: (**tx**) Browne 1961a: 306.

***mucronatoides* Schedl** 1975f: 368. Holotype ♀; New Guinea SW, Vogelkop, Fak Fak, S. Coast of Bomberai; BPBM, Honolulu.

Distribution: New Guinea.

References: (**tx**) Schedl 1975f: 368.

***mucronatulus* Eggers** 1930d: 199. Holotype ♀; Phandowala, India; FRI, Dehra Dun.

Distribution: Asia (Bengal in India).

Hosts: *Mesua ferrea*, *Shorea robusta*.

References: (**ds**) Beeson 1930: 250, 1961: 308; Kleine 1934a: 174. (**tx**) Beeson 1930: 250; Eggers 1930d: 199.

***mucronatus* Eggers** 1923a: 191. Holotype ♀; Java; Hamburg Museum, lost.

Distribution: Asia (Malaya/ Thailand), Indonesia (Borneo, Java).

Hosts: *Altingia excelsa*, *Bixa orellana*, *Cinchona* sp., *Coffea* sp., *Dyera costulata*.

References: (**hb**) Beaver & Browne 1975: 299; Browne 1961c: 115; Kalshoven 1958a: 189, 1959c: 150. (**ds**) Beaver & Browne 1975: 299; Kalshoven 1958a: 189, 1959c: 150; Nobuchi 1978a: 406; Schedl 1964g: 242, 1966b: 62, 1971c: 370. (**tx**) Eggers 1923a: 191–192, 1930d: 199; Nobuchi 1983: 303; Schedl 1942d: 5, 1952c: 64, 1958b: 101.

***multipunctatus* Browne** 1980b: 386. Holotype ♀; Tatau (Borneo) to Nagoya (Japan), imported; BMNH, London.

Distribution: Indonesia (Borneo).

References: (**tx**) Browne 1980b: 386.

***multipunctulus* Browne** 1984d: 98. Holotype ♀; New Guinea: Gumi; BMNH, London.

Distribution: New Guinea.

Hosts: *Agathis alba*.

References: (**tx**) Browne 1984d: 98.

***multispinatus* Eggers** 1920: 125. Lectotype ♀; Africae Kamerun; Eggers Collection, in NHMW, Wien, designated by Schedl 1979c: 161.

Figures: Nunberg 1963b:pl. 1, figs. 1–6 (female), Schedl 1962j: 313–315.

Distribution: Africa (Angola/ Cameroon/ Ghana/ Ivory Coast/ Tanzania/ Uganda/ Zaire).

Hosts: *Acanthus pubescens*, *Albizzia gummifera*,

Baikiaea eminii, *Canarium* sp., *Chrysophyllum pruniforme*, *Dialium pachyphyllum*, *Drypetes leonensis*, *D. yambataense*, *Ficus* sp., *Maba laurentii*, *Macrolobium* sp., *Millettia* sp., *Ochthocosmus africanus*, *Pentaclethra macrophylla*, *Synsepalum subcordatum*, *Theobroma cacao*, *Trema guineensis*.

References: (**ds**) Schedl 1959p: 18. (**tx**) Eggers 1920: 125–126, 1924: 108; Schedl 1962j: 317–318, 1979c: 161.

acanthus Schedl 1952i: 15. Holotype ♀; Congo Belge: Kivu, Mulungu; MRCB, Tervuren. Synonymy: Wood 1989: 177.

References: (**ec**) Schedl 1962j: 312. (**hb**) Beaver & Loyttyniemi 1985a: 72; Browne 1963a: 238; Loyttyniemi, Beaver, & Loyttyniemi 1984; Schedl 1962j: 312. (**ds**) Beaver & Loyttyniemi 1985a: 72; Browne 1963a: 238; Mayne & Donis 1960: 104, 1962: 314; Nunberg 1961a: 329; Schedl 1961j: 349, 1962h: 59, 1962j: 312, 1962k: 1097, 1964e: 68, 1964f: 618, 1967e: 215. (**tx**) Nunberg 1963b: 7, pl. 1; Schedl 1952i: 15, 1954e: 80, 1957d: 84, 97, 1962j: 312–314, 1962k: 1096, 1979c: 10; Wood, S. L. 1989: 177.

acanthus acanthodes Schedl 1954e: 80. Lectotype ♀; Bekwai; Schedl Collection in NHMW, Wien.

References: (**ds**) Schedl 1962j: 59, 1962j: 316, 1962k: 1097; Thompson, G. H. 1963: 70. (**tx**) Schedl 1954e: 80, 1962j: 316, 1962k: 1097, 1979c: 10.

acanthus acuticornis Schedl 1957d: 97. Holotype ♀; Congo Belge, Yangambi; Schedl Collection in NHMW, Wien.

References: (**ay**) Schedl 1962j: 316. (**ec**) Schedl 1962j: 316. (**ds**) Ferreira 1965: 1120; Schedl 1959p: 18–19, 1962h: 59, 1962j: 316, 1962k: 1097. (**tx**) Nunberg 1963b: 8; Schedl 1957d: 97, 1962j: 316, 1979c: 10.

acanthus mimus Schedl 1971e: 13. Holotype ♀; Congo, Yangambi; Schedl Collection in NHMW, Wien.

References: (**tx**) Schedl 1971e: 13.

***mumfordi* Beeson** 1935b: 110. Syntypes ♀; Hivaoa: Mt. Temetiu, NE slope, 3620 ft; BPBM, Honolulu.

Distribution: Marquesas Islands.

Hosts: *Cyrtanda* sp., *Reynoldsia tahitensis*.

References: (**ds**) Beeson 1938b: 293. (**tx**) Beeson 1935b: 110; McNamara 1984: 759; Schedl 1950f: 53, 1979c: 161.

***murudensis* Browne** 1965a: 203. Holotype ♀; Sarawak: Foot of Mt. Murud; BMNH, London.

Distribution: Indonesia (Sarawak in Borneo).

References: (**tx**) Browne 1965a: 203.

***mussooriensis* Eggers** 1930d: 179. Syntypes ♂♀; United Provinces, Mussoorie, 6000 feet; FRI, Dehra Dun.

Distribution: Asia (Uttar Pradesh in India).

Hosts: *Berberis nepalensis*.

References: (**ds**) Beeson 1930: 74, 250, 1961: 308; Kleine 1934a: 174. (**tx**) Beeson 1930: 250; Eggers 1930d: 179–180; Schedl 1979c: 162.

***mustus* Schedl** 1972b: 269. Holotype ♀; Samoa, Upolu; Schedl Collection in NHMW, Wien.

Distribution: Samoan Islands.

References: (**tx**) Schedl 1972b: 269, 1979c: 162.

***mutabilis* Schedl** 1935d: 92. Holotype ♀; Venezuela; Schedl Collection in NHMW, Wien.

Distribution: South America (Brazil/ Venezuela).

References: (**ds**) Blackwelder 1947: 780. (**tx**) Schedl 1935d: 92, 1936j: 109, 1961a: 530, 1979c: 162; Wood, S. L. 1978b: 398.

itatiayaensis Schedl 1936j: 109. Lectotype ♀; Serra Itatiaya, Sudabhang, Waldregion; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 128. Synonymy: Wood 1989: 177.

References: (**ds**) Blackwelder 1947: 780. (**tx**) Schedl 1935d: 93, 1936j: 109, 1979c: 128.

meridensis Wood 1974a: 38. Holotype ♀; La Carbonera Experimental Forest, near Merida, Merida, Venezuela; Wood Collection. Synonymy: Wood 1978b: 398.

References: (**tx**) Wood, S. L. 1974a: 38, 1978b: 398.

***muticus* Blandford** 1894d: 112. Syntypes ♀; Kashiwagi, Japan; BMNH, London.

Distribution: Asia (Japan).

Hosts: *Pinus maximowiczii*.

References: (**ds**) Blandford 1894c: 579; Hagedorn 1910d: 107; Kleine 1913b: 162, 1914b: 260; Murayama 1952a: 20, 23, 1954b: 180; Nobuchi 1985c: 26. (**tx**) Blandford 1894d: 112; Hagedorn 1910a: 155; Murayama 1952a: 20, 23, 1954b: 180; Niisima 1910: 14; Schedl 1934f: 1646.

***myllus* Browne** 1986a: 92. Holotype ♀; Kuala Langsa (Sumatra) to Nagoya (Japan), imported; BMNH, London.

Distribution: Indonesia (Sumatra).

Hosts: *Dipterocarpus* sp. log.

References: (**tx**) Browne 1986a: 92.

***nagaoensis* Murayama** 1934c: 294. Holotype ♂; Tarumidzu, Kagoshima pref., Kiushu, Japan; Murayama Collection in USNM, Washington.

Distribution: Asia (Japan).

Hosts: *Passania cuspidata*.

References: (**ds**) Murayama 1949c: 103, 1954b: 204; Nobuchi 1985c: 26. (**tx**) Murayama 1934c: 294–295, 1954b: 204.

***nakazawai* Browne** 1984a: 156. Holotype ♀; Pomio (New Britain) to Nagoya (Japan), imported; BMNH, London.

Distribution: New Britain Island.

Hosts: Watergum log.

References: (**ds**) Ohno et al. 1989: 63. (**tx**) Browne 1984a: 156.

***nameranus* Murayama** 1954b: 194. Holotype ♀; Mt. Namera, Yamaguchi pref.; Murayama Collection in USNM, Washington.
Distribution: Asia (Japan).
Hosts: *Quercus acuta*, *Q. myrsinaefolia*.
References: (**cn**) Murayama 1954a: 25. (**ds**) Murayama 1954a: 25, 1954b: 194; Nobuchi 1985c: 26. (**tx**) Murayama 1954b: 194.

***neivai* Eggers** 1928c: 96. Lectotype ♀; Brasil, Sao Paulo (Hauptstadt); USNM, Washington, designated by Anderson & Anderson 1971: 21.
Figures: Nunberg 1959a:pl. 24, figs. 7–8, Pedrosa-Macedo & Schonherr 1985: 33.
Distribution: South America (Brazil).
Hosts: *Citrus* sp.
Notes: (1) Schedl 1979c: 164 (designation of holotype invalid).
References: (**cn**) Costa Lima 1956. (**hb**) Costa Lima 1956; Viana 1964: 124. (**ds**) Blackwelder 1947: 780; Costa Lima 1936; Nunberg 1958a: 481; Pedrosa-Macedo & Schonherr 1985: 33; Schedl 1966f: 89, 1967d: 3, 1970e: 84; Viana 1964: 124. (**tx**) Anderson, W. H. & Anderson 1971: 21; Costa Lima 1956; Eggers 1928c: 96–97; Nunberg 1958a: 481, 1959a: 431; Pedrosa-Macedo & Schonherr 1985: 33; Schedl 1939j: 564–566, 1951h: 285, 1952a: 446, 1979c: 164.

***neocylindricus* Schedl** 1942a: 196. Holotype ♀; Malaya, Selangor, Kepong; BMNH, London.
Distribution: Asia (Malaya).
References: (**ds**) Browne 1961c: 157. (**tx**) Schedl 1942a: 196.

***neoscabridus* Schedl** 1972b: 269. Holotype ♀; Solomon Islands, Bougainville; Schedl Collection in NHMW, Wien.
Distribution: Solomon Islands.
References: (**tx**) Schedl 1972b: 269, 1979c: 164.

***neptunus* Schaufuss** 1891: 22. Syntypes ♂ ♀; Madagascar; Hamburg Museum, lost.
Distribution: Madagascar.
References: (**ds**) Alluaud 1900: 440; Fairmaire 1892b; Frappa 1933: 179; Hagedorn 1910d: 107; Kleine 1913b: 162. (**tx**) Blandford 1898b: 207; Eggers 1922b: 171; Fairmaire 1892b; Hagedorn 1910a: 155, 1913b: 256; Schaufuss 1891: 22, 1905: 19; Schedl 1977b: 144.

***niger* Sampson** 1912: 247. Holotype ♀; Ruby Mines, Burmah; BMNH, London.
Distribution: Asia (Burma).
References: (**ds**) Kleine 1913b: 162, 1914b: 277. (**tx**) Eggers 1925: 159; Sampson 1912: 247.

***nigrescens* Browne** 1980b: 387. Holotype ♀; Palembang (Sumatra) to Nagoya (Japan), imported.
Distribution: Indonesia (Sumatra).
Hosts: *Shorea* sp.
References: (**tx**) Browne 1980b: 387.

***nigropilosus* Eggers** 1943c: 67. Syntypes ♀; Congostaat (Park Natl. Albert Gitebe, Nyamuragira volcan, 2324 m); de Witte Collection.
Figures: Nunberg 1963b:pl. 20, figs. 5–6.
Distribution: Africa (Zaire).
References: (**tx**) Eggers 1943c: 67–68; Nunberg 1963b: 41, pl. 20; Schedl 1962j: 323.

***nitellus* Browne** 1984d: 99. Holotype ♀; New Guinea: Hump L. A.; BMNH, London.
Distribution: New Guinea.
Hosts: *Araucaria cunninghamii*.
References: (**tx**) Browne 1984d: 99.

***nitens* Browne** 1984d: 97. Holotype ♀; New Guinea: Popondetta; BMNH, London.
Distribution: New Guinea.
Hosts: *Gardenia* sp.
References: (**tx**) Browne 1984d: 97.

***nitidulus* Eggers** 1927a: 192. Holotype ♀; Belg.-Congo, Sankuru, Bas Uele (Koteli); MRCB, Tervuren, 1 cotype in Eggers Collection, in NHMW, Wien.
Figures: Nunberg 1963b:pl. 20, figs. 7–10.
Distribution: Africa (Zaire).
Hosts: *Klainedoxa gabonensis*, *Pycanthus angolensis*, *Sarcocephalus* sp., *Staudtia stipitata*.
References: (**bv**) Schedl 1960f: 64. (**cn**) Ghesquiere 1933a: 31–35, 1933b: 781. (**hb**) Schedl 1962j: 323. (**ds**) Ghesquiere 1933a; Kleine 1934a: 174; Schedl 1960f: 40, 1962j: 323. (**tx**) Eggers 1927a: 192–193; Nunberg 1963b: 42, pl. 20; Schedl 1962j: 323, 1979c: 169.

***norfolkensis* Schedl** 1972b: 270. Holotype ♀; Norfolk Island, Mt. Pitt, 240 m; CSIRO, Canberra.
Distribution: Norfolk Island.
References: (**tx**) Schedl 1972b: 270.

***nossi* Schedl** 1961e: 146. Holotype ♀; Madagascar, Montagne d'Ambre; IRSM, Madagascar.
Distribution: Madagascar
References: (**tx**) Schedl 1961e: 146, 1977b: 161, 1979c: 171.

***novagranadensis* Eggers** 1941a: 103. Holotype ♀; Venezuela (Neu Granada); USNM, Washington.
Distribution: Antilles Islands (Guadeloupe), South America (Venezuela).
References: (**ds**) Bright 1985c: 174; Schedl 1980b: 184. (**tx**) Anderson, W. H. & Anderson 1971: 22; Bright 1985c: 174; Eggers 1941a: 103.

***nubilus* Samuelson** 1981: 80. Holotype ♀; Hawaii: Hilo Forest Reserve, 1–2 km S Saddle Road, 1200 m; BPBM, Honolulu.
Figures: Samuelson 1981: 56.
Distribution: Hawaiian Islands (Hawaii).
Hosts: Myrsine.
References: (**tx**) Samuelson 1981: 56, 80.

***nuperus* Bright** 1972d: 76. Holotype ♀; Hardwar Gap, 4000 feet, St. Andrew Parish, Jamaica; CNCI, Ottawa.
Figures: Bright 1972d: 95.

Distribution: Antilles Islands (Jamaica).
Notes: (3) This species may belong to *Ambrosiodmusus*.
References: (**ds**) Bright 1985c: 174. (**tx**) Bright 1972d: 76, 95, 1985c: 174; McNamara 1977: 200.

***oahuensis* Perkins** 1900: 177. Holotype ♀; Oahu, Koolau Range, 1000 ft.; BMNH, London.
Figures: Samuelson 1981: 60.
Distribution: Hawaiian Islands (Oahu).
Hosts: *Pelea* sp.
References: (**ds**) Beeson 1938b: 293; Hagedorn 1910d: 107, 1913b: 162, 1914b: 303; Samuelson 1981: 81. (**tx**) Hagedorn 1910a: 155; Perkins 1900: 177; Samuelson 1981: 60, 81.

***obesus* LeConte** 1868: 159. Lectotype ♀; Virginia [USA]; MCZ, Cambridge, designated by Wood 1982b: 793.
Figures: Bright 1976d: 132.
Distribution: North America (Ontario, Quebec in Canada/ Connecticut, Massachusetts, Minnesota, Wisconsin in USA).
Hosts: *Acer* sp., *Betula* sp., *Fagus grandifolia*, *Liriodendron* sp., *Populus tremuloides*, *Quercus* sp.
References: (**ay**) Hopkins 1894g: 278. (**bv**) Hosking & Knight 1975; Kirkendall 1984: 241. (**cn**) Blackman 1950; Doane et al. 1936; Felt 1906: 722; Hubbard 1897b: 23; Lintner 1888: 52–59, 1896: 270; Packard 1890: 520; Peirson 1927: 89; Smith, J. B. 1900: 363; Swaine 1918a: 124, 126. (**ec**) Felt 1906: 722; Roeper & French 1981; Steinhaus 1946: 404; Thompson, W. R. & Simmonds 1964: 39, 1965: 68. (**hb**) Blackman 1950; Chamberlin 1939: 445; Chittenden 1890; Deyrup & Atkinson 1987a: 65; Doane et al. 1936; Drake 1921: 201, 204; Felt 1906: 722; Hopkins 1894b: 295, 1894g: 278, 1905a: 383; Hubbard 1897b: 23; Packard 1890: 520; Peirson 1927: 89; Pierce, W. D. 1907: 291; Swaine 1918a: 124, 126. (**ds**) Anonymous 1926c: 520; Baker, W. L. 1972: 271; Beaulne 1956; Blackman 1950; Blatchley & Leng 1916: 625; Bright 1968b: 1304, 1976d: 133; Chamberlin 1925, 1939: 445; Chittenden 1890; Cook 1891; Deyrup 1981b: 7; Deyrup & Atkinson 1987a: 65; Dodge 1938: 13, 53; Drake 1921: 201–205; Drooz 1985: 374; Gemminger & Harold 1872: 2686; Hagedorn 1910d: 107; Henshaw 1882: 269, 1885: 148; Hopkins 1893a: 135, 1893b: 211; Kleine 1913b: 168, 1914b: 395, 410, 1934a: 177; Knull 1932: 67; Leng 1920: 342; Leonard 1928: 520; Schwarz 1886: 41, 45, 1887: 20; Smith, J. B. 1900: 363, 1910: 402; Swaine 1909: 155; Wood, S. L. 1982b: 793. (**tx**) Benoit 1985: 284; Blatchley & Leng 1916: 625; Bright 1968b: 1304, 1976d: 132–133; Chamberlin 1939: 445; Dodge 1938; Eichhoff 1878b: 323–324; Hagedorn 1910a: 155; Hopkins 1915b: 68–69; Hubbard 1897b: 23; LeConte 1868: 159, 1876: 359–360; Schedl 1964k: 314; Schwarz 1886: 41, 45, 1888: 45; Swaine 1909: 155, 1910b: 162, 1917: 22–23, 1918a: 124–126; Wood, S. L. 1982b: 793.

serratus Swaine 1910b: 162. Lectotype ♀; Ste. Anne de Bellevue, Quebec; CNCI, Ottawa, designated by Bright 1967b: 680. Synonymy: Hopkins 1915b: 69.
References: (**ds**) Leng 1920: 342; Swaine 1911: 92. (**tx**) Bright 1967b: 680; Hagedorn 1910a: 157; Hopkins 1915b: 68–69; de Ruette 1970;115; Schedl 1979c: 225; Swaine 1910b: 162–165, 1918a: 125.

populi Swaine 1917: 22. Lectotype ♀; Ste. Anne de Bellevue, Quebec Canada; CNCI, Ottawa, designated by Bright 1967b: 673. Synonymy: Schedl 1964m: 314.
References: (**bv**) Hosking & Knight 1975. (**cn**) Blackman 1950; Doane et al. 1936; Swaine 1918a: 124–125. (**hb**) Blackman 1950; Chamberlin 1939: 446–447; Doane et al. 1936; Drake 1921: 203–204; Swaine 1918a: 124–125. (**ds**) Beaulne 1956; Blackman 1950; Chamberlin 1939: 446–447; Kleine 1934a: 177; Leng 1920: 342. (**tx**) Bright 1967b: 673, 1968: 1304; Chamberlin 1939: 446–447; Hoebeke 1978; de Ruette 1970: 97; Schedl 1964m: 314; Swaine 1917: 22–23, 1918a: 124–126; Titus, Meikle, & Harrison 1985: 24.

***obiensis* Browne** 1980a: 375. Holotype ♀; Obi Island (Moluccas) to Nagoya (Japan), imported; BMNH, London.
Distribution: Indonesia (Moluccas).
Hosts: *Shorea* sp.
References: (**tx**) Browne 1980a: 375.

***obliquus* Sharp** 1885: 192. Holotype ♀; near Honolulu, Hawaiian Islands; BMNH, London.
Figures: Nobuchi 1978a:pl. 2, Samuelson 1981: 60.
Distribution: Hawaiian Islands (Oahu).
Hosts: *Byronia sandwicensis*, *Ilex anomala*.
Notes: (1) Bright (1968b: 1301) transferred *Pityophthorus obliquus* LeConte into *Xyleborus*, although it did not belong there; consequently, Samuelson (1981: 88) placed Sharp's name in homonymy unnecessarily; because this occurred after 1960, Sharp's name is restored.
References: (**ds**) Baker, W. L. 1972: 271; Beeson 1938b: 293; Bright 1968b: 1301, 1981c: 157; Drooz 1985: 374; Hagedorn 1910d; Kleine 1913b: 162, 1914b: 302; Wood, S. L. 1977a: 73. (**tx**) Bright 1968b: 1301; Hagedorn 1910a: 155; Nobuchi 1978a:pl. 2; Perkins 1900: 176; Samuelson 1981: 88; Schedl 1941f: 14; Sharp 1885: 192–193.

tantalus Schedl 1941f: 114. Lectotype ♀; Oahu: Tantalus; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 249 and by Samuelson 1981: 88. Synonymy: Wood 1966b: 32.
Notes: (3) Samuelson 1981: 88 (described male).
References: (**ds**) Samuelson 1981: 88; Swezey 1941: 122, 1954: 109. (**tx**) Samuelson 1981:

60, 88; Schedl 1941f: 114, 1979c: 249; Wood, S. L. 1966b: 32.

oblicatus Schedl 1980d: 122. Holotype ♀; near Honolulu, Hawaiian Islands; BMNH, London, automatic, an unneeded replacement name.
References: (**tx**) Schedl 1980d: 122.

***oblongus* Schedl** 1950d: 32. Holotype ♀; Isles Seyshelles; Schedl Collection in NHMW, Wien.
Distribution: Africa (Seychelles Islands).
References: (**cn**) Beaver 1988a: 66. (**hb**) Beaver 1988a: 66. (**ds**) Beaver 1988a: 66; Schedl 1969d: 12. (**tx**) Schedl 1950d: 32, 1969d: 12, 1977b: 162, 1979c: 174.

***obstipus* Schedl** 1935f: 270. Lectotype ♀; Malay Peninsula: Pahang, Fraser's Hill and Cameron's Highlands; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 175.
Distribution: Asia (Malaya).
References: (**ds**) Browne 1961c: 136. (**tx**) Schedl 1935f: 270, 1979c: 175.

***obtusatus* Schedl** 1972m: 200. Holotype ♀; Borneo; BMNH, London.
Distribution: Indonesia (Borneo).
References: (**tx**) Schedl 1972m: 200.

***octiesdentatus* Murayama** 1931a: 46. Holotype ♀; Kannanri, Korea; Murayama Collection in USNM, Washington.
Figures: Yin, Huang, & Li 1984: 159.
Distribution: Asia (Sichuan in China/ Japan/ Korea).
Hosts: *Carpinus laxiflora*, *Cleyera* spp., *Eurya japonica*, *Illicium religiosum*.
References: (**ay**) Murayama 1933a: 2. (**cn**) Shiraki 1952. (**ds**) Cho 1957, 1963; Choo 1983: 107; Choo & Woo 1985: 166; Kleine 1934a: 175; Ko 1969: 285; Murayama 1929b: 2, 1930b: 21, 1931a: 46, 1937b: 375, 1949c: 103, 1950b: 1297; Nobuchi 1985c: 26; Shiraki 1952. (**tx**) Choo 1983: 107; Murayama 1930b: 21, 25, 31, 1931a: 41, 46–48, 1933a: 2, 32–33, 1934c: 300, 1937b: 375, 1950b: 1297, 1954b: 204; Schedl 1934f: 1646; Yin, Huang, & Li 1984: 159.

***ohnoi* Browne** 1980a: 375. Holotype ♀; Keelung (Formosa) to Nagoya (Japan), imported; BMNH, London.
Distribution: Asia (Taiwan).
Hosts: *Quercus* sp.
References: (**tx**) Browne 1980a: 375.

***ohtoensis* Nobuchi** 1981d: 149. Holotype ♀; Mt. Ohto, Wakayama, Japan; Nobuchi Collection, Ibaraki.
Figures: Nobuchi 1981d: 153.
Distribution: Asia (Japan).
Hosts: *Illicium religiosum*.
References: (**ds**) Nobuchi 1985c: 26. (**tx**) Nobuchi 1981b: 149, 153.

***okinosenensis* Murayama** 1961b: 31. Holotype ♀; Japan: Tottori Pref Mt. Okinosen and Kamiishikawa, Niigata pref.; Murayama Collection in USNM, Washington.
Distribution: Asia (Japan).
Hosts: *Quercus* sp.
References: (**cn**) Anonymous 1980g. (**ds**) Anonymous 1980g; Nobuchi 1985c: 26. (**tx**) Murayama 1961b: 31.

***oneratus* Schedl** 1976a: 76. Holotype ♀; V. Vera, M. Grosso, Lon. 55 degrees 36′, Lat. 12 degrees 48′, Brazil; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1976a: 76.

***onoharaensis* Murayama** 1934c: 293. Holotype ♀?; Kiushu: Tarumidzu, Onohara, Kagoshima Pref.; Murayama Collection in USNM, Washington.
Distribution: Asia (Japan).
Hosts: *Quercus* sp.
References: (**ds**) Murayama 1954b: 204; Nobuchi 1985c: 26. (**tx**) Murayama 1934c: 293, 1954c: 26.

***operosus* Schedl** 1973e: 91. Holotype ♀; Wau, Morobe Dist. [New Guinea], 400 m; BPBM, Honolulu.
Distribution: New Guinea.
References: (**tx**) Schedl 1973e: 91.

***opulentus* Schedl** 1975f: 369. Holotype ♀; Mt. Dayman, Maneau Range, New Guinea, 700 m, N. slope; AMNH, New York.
Distribution: New Guinea.
References: (**tx**) Schedl 1975f: 369.

***orientalis* Eggers** 1933f: 54. Holotype ♀; Wladiwostok, USSR; USNM, Washington.
Figures: Tsai & Li 1959: 103.
Distribution: Asia (Sibera, Ussuri in E USSR).
Hosts: *Acer* spp., *Kaloranax ricinifolia*.
References: (**ec**) Kurenzov 1934a: 58. (**hb**) Kurenzov 1948b: 121; Stark 1952: 432. (**ds**) Krivolutskaya 1983; Kurenzov 1934a: 58; Stark 1952: 432. (**tx**) Eggers 1933f: 54–55; Kurenzov 1941a: 186–188, 1948b: 121; Stark 1952: 432; Tsai & Li 1959: 103.

orientalis kalopanacis Kurenzov 1941a: 187. Holotype ♀; Far East, USSR; Kurenzov Collection at Vladivostok.
References: (**tx**) Kurenzov 1941: 187–189.

orientalis aceris Kurenzov 1941a: 188. Holotype ♀; Far East, USSR; Kurenzov Collection at Vladivostok.
References: (**tx**) Kurenzov 1941a: 186–189.

perorientalis Schedl 1957d: 85. Holotype ♀; Wladiwostok, USSR; USNM, Washington, unneeded replacement name. Synonymy: Browne 1962d: 50.
References: (**tx**) Browne 1962d: 50; Schedl 1957d: 85.

***osumiensis* Murayama** 1934c: 292. Holotype ♀; Nagao Forest, Osumi Peninsula, Kagoshima pref.; Murayama Collection in USNM, Washington.
Distribution: Asia (Japan).
Hosts: *Illex oldhami*.
References: (**ds**) Murayama 1954b: 204; Nobuchi 1985c: 27. (**tx**) Murayama 1934c: 290–293, 1954b: 204, 1955: 85.

***palatus* Wood** 1974a: 35. Holotype ♀; 24 km W Armeria, Colima, Mexico; Wood Collection.
Distribution: North America (Colima, Jalisco, Nayarit in Mexico).
Hosts: Limbs of trees and shrubs.
References: (**ec**) Equihua & Atkinson 1986: 630. (**hb**) Equihua & Atkinson 1986: 630; Wood, S. L. 1982b: 797. (**ds**) Atkinson & Equihua 1988: 102; Equihua & Atkinson 1986: 630; Wood, S. L. 1982b: 797. (**tx**) Wood, S. L. 1974a: 35, 1982b: 797.

***papatrae* Schedl** 1972i: 53. Holotype ♀; Rapontamon, New Ireland District, New Guinea; CSIRO, Canberra.
Distribution: New Ireland Island.
Notes: (3) This is a possible synonym of *mucronatoides*.
References: (**tx**) Schedl 1972i: 53, 1979c: 183.

***papuanus* Blandford** 1896b: 209. Holotype ♀; New Guinea; BMNH, London.
Distribution: New Guinea.
References: (**ds**) Hagedorn 1910d: 107; Kleine 1913b: 162, 1914b: 296. (**tx**) Blandford 1896b: 209; Hagedorn 1910a: 155.

***parallelocollis* Eggers** 1933b: 33. Holotype ♀; Franz. Guayana (Nouveau Chantier); MNHN, Paris.
Distribution: North America (Costa Rica, including Isla del Coco), South America (Cayenne/ Colombia).
Hosts: *Theobroma cacao*.
References: (**hb**) Wood, S. L. 1982b: 818. (**ds**) Atkinson & Equihua 1988: 102; Blackwelder 1947: 780; Bright 1982a: 128; Schedl 1960a: 76; Wood, S. L. 1982b: 818. (**tx**) Eggers 1933b: 3, 33–34; Schedl 1979c: 183, 185; Wood, S. L. 1982b: 818.

***parallelus* Eggers** 1936c: 39. Holotype ♀; S. Rhodesia: Salisbury; BMNH, London.
Distribution: Africa (Zaire/ Zimbabwe).
Hosts: *Theobroma cacao*.
References: (**hb**) Loyttyniemi, Beaver, & Loyttyniemi 1984. (**ds**) Beaver & Loyttyniemi 1985a: 75; Schedl 1962j: 374. (**tx**) Eggers 1936c: 39; Schedl 1939j: 565, 1962j: 374, 1979c: 185.

***parcellus* Wood** 1968b: 2. Holotype ♀; Bartica triangle, British Guiana; BMNH, London.
Distribution: South America (Brazil/ Guyana).
Hosts: *Chaetocarpus echinocarpus*, *Copaifera langsforfi*, *Eperua falcata*, *Eschweilera sagotianum*, *Kairiballi* sp., *Marcgravia* sp., *Pouteria* sp., *Sloanea* sp., *Tococa formicaria*.
References: (**hb**) Beaver 1976a: 25. (**ds**) Beaver 1976a: 25. (**tx**) Wood, S. L. 1968b: 2.

***pardous* Eggers** 1943d: 247. Holotype ♀; Brasil (Staat Sao Paulo, Tal des Rio Pardo); Strohmeyer Collection.
Figures: Nunberg 1959a:pl. 25, figs. 6–7.
Distribution: South America (Brazil).
References: (**tx**) Eggers 1943d: 247; Nunberg 1959a: 433.

***parinarie* Schedl** 1962j: 306. Holotype ♀; Congo Belge: Hembe-Bitale; Schedl Collection in NHMW, Wien.
Distribution: Africa (Zaire).
Hosts: *Parinari holstii*.
References: (**tx**) Schedl 1962j: 306, 1979c: 185.

***partitus* Browne** 1974a: 69. Holotype ♀; Fiji: Viti Levu, Nausori Highlands; BMNH, London.
Distribution: Fiji Islands, New Guinea.
Hosts: *Dacrydium* sp.
References: (**ec**) Roberts 1977a: 261. (**hb**) Roberts 1977a: 261. (**ds**) Browne 1974a: 65; Roberts 1977a: 261. (**tx**) Browne 1974a: 65, 69.

granulosus Schedl 1975f: 366. Holotype ♀; Upper Manki logging area, Bulolo, Morobe District; Schedl Collection in NHMW, Wien.
Synonymy: Schedl 1980d: 121.
Notes: (3) Beaver 1991: 95 (treated as a good species).
References: (**ds**) Schedl 1979f: 103. (**tx**) Beaver 1991: 95; Schedl 1975f: 366, 1979c: 112, 1980d: 121.

***parvipunctatus* Eggers** 1943a: 387. Holotype ♀; Bolivia (Cochabamba); USNM, Washington.
Distribution: South America (Bolivia).
References: (**tx**) Anderson, W. H. & Anderson 1971: 24; Eggers 1943a: 387–388; Schedl 1979c: 186.

***pele* Samuelson** 1981: 82. Holotype ♀; Hawaii: Olaa, 48 km from Hilo, 3800 ft.; BPBM, Honolulu.
Figures: Samuelson 1981: 63.
Distribution: Hawaiian Islands (Hawaii).
Hosts: *Cheirodendron* sp.
References: (**tx**) Samuelson 1981: 63, 82.

***pelliculosus* Eichhoff** 1878b: 336. Syntypes ♀; Nipon, insula Japonica Asiatica; Hamburg Museum, lost.
Distribution: Asia (Sichuan in China/ Japan), North America (introduced: Maryland, Pennsylvania).
Hosts: *Acer* sp., *Castanopsis* sp., *Quercus acuta*, *Q. stenophylla*, *Shiia sieboldi*.
References: (**cn**) Murayama 1954a: 11. (**ds**) Atkinson, Rabaglia, & Bright 1990: 95; Blandford 1894c; Kleine 1913b: 162, 1914b: 260; Murayama 1936a: 135, 1954a: 11, 1954b: 181; Nobuchi 1985c: 27; Yin, Huang, & Li 1984: 158. (**tx**) Atkinson, Rabaglia, & Bright 1990: 95; Eggers 1923a: 209–210, 1930a: 204; Eichhoff 1878a: 392, 1878b: 336; Murayama 1934c: 297–300, 1936a: 135, 1954b:

181; Niisima 1909: 160; Schedl 1934d: 87, 1934f: 1646, 1962j: 279; Yin, Huang, & Li 1984: 158.

***pentaclethrae* Schedl** 1957d: 87. Holotype ♀; Congo Belge: Bas-Congo, Luki; MRCB, Tervuren.
Figures: Nunberg 1963b:pl. 21, figs. 5–8.
Distribution: Africa (Zaire).
Hosts: *Pentaclethra macrophylla*.
References: (**hb**) Schedl 1962j: 168. (**ds**) Schedl 1962j: 168. (**tx**) Nunberg 1963b: 43, pl. 21; Schedl 1957d: 87, 1962j: 168, 1979c: 188.

***peramploides* Schedl** 1957d: 102. Holotype ♀; Kenya, Ngong; Schedl Collection in NHMW, Wien.
Distribution: Africa (Kenya/ Uganda).
References: (**ds**) Schedl 1962j: 324. (**tx**) Schedl 1957d: 102, 1962j: 324, 1979c: 188.

***peramplus* Schedl** 1950d: 31. Holotype ♀; Deutsche Ost-Afrika; Schedl Collection in NHMW, Wien.
Distribution: Africa (Tanzania/ Zaire).
References: (**ds**) Schedl 1962j: 374. (**tx**) Schedl 1950d: 31, 1954e: 82, 1962j: 374, 1979c: 188.

***percristatus* Eggers** 1939a: 12. Holotype ♀; Nordost-Birma (Kambaiti, 7000 Fuss); NHR, Stockholm.
Distribution: Asia (Burma/ Sichuan in China).
References: (**tx**) Eggers 1939a: 12–13; Schedl 1942a: 186, 1955h: 46, 1979c: 188.

***perdiligens* Schedl** 1937b: 399. Lectotype ♀; Urwald hinter dem Randgebirge, N.W. Tanganjikasees; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 189.
Distribution: Africa (Kenya/ Tanzania/ Zaire).
References: (**ds**) Schedl 1962j: 496. (**tx**) Schedl 1937b: 399, 1954e: 54, 79, 1957d: 107, 1962j: 496, 1979c: 188.

***perforans* (Wollaston)** 1857: 96 (*Tomicus*). Syntypes ♀; Madera; BMNH, London.
Figures: Chandra 1981: 288, Nobuchi 1967:pl. 2, 1978a:pl. 4, Samuelson 1981: 53, Wood 1960a: 65.
Distribution: Africa (Grande Comore in Azores Islands/ Cameroon/ Canary Islands/ Cape Verde Islands/ Gabon/ Ivory Coast/ Kenya [including Pleistocene fossils]/ Madeira/ Malawi/ Mauritus/ Nigeria/ Seychelles Islands/ Sierra Leone/ Somalia/ Tanzania/ Uganda/ Zaire), Asia (Burma/ Guangxi, Yunnan in China/ Malaya/ Andaman Islands in India/ Japan/ Okinawa Island/ Sri Lanka/ Taiwan/ Thailand/ Tonkin Island in Vietnam), Admiralty Islands, Australia, Cook Islands, Fiji Islands, Guam, Hawaiian Islands, Indonesia (Bali, Batu, Borneo, Celebes, Java, Nilas Island, Sumatra), Madagascar, Micronesia (Kiribati Islands, Mariana Islands, Palau Islands, Society Islands), New Caledonia, New Guinea, New Hebrides Islands, Niue Island, Philippine Islands (Bangui, Engano), Reunion Island, Samoan Islands, Solomon Islands, Tahiti, Tuamotu Island.
Hosts: Many listed by Brimblecombe 1953: 30–33, Browne 1961c: 141, Gray & Wylie 1974: 86–89, Schedl 1962j: 390–399. *Shorea robusta*.
Notes: (3) An apparent synonym is *apertus* (DEB).
References: (**ay**) Herfs 1949: 26; Hill, D. S. 1983: 496; Hopkins 1894g. (**bv**) Beeson 1917; Gray, B. 1974c; Moeck 1970b: 993. (**cn**) Alibert 1951: 149; Alliot & Ivanes 1950; Anonymous 1964e, 1973q, 1979p; Ballard 1921; Beaver 1988a: 66; Beeson 1915: 8–11, 1916: 1–5, 1919: 10–15; Beille 1913; Bigger 1982: 255; Blandford 1892b, 1893c1–46; Bodkin 1913: 1–4; Box 1953a; Brimblecombe 1951, 1956; Browne 1952, 1968: 716; Bruner 1928: 27–32; Chevalier 1931; Cotes 1893b: 155; Dinther 1961; Ebeling 1950: 537; Edwards 1933: 16–18, 1938: 454–458; Faber 1909; Froggatt 1925, 1927: 58–59; Garman 1905; Ghesquiere 1933a; Gowdey 1918: 42–51; Gray, B. & Wylie 1974; Green 1912a: 39, 1916: 608–636; Hagedorn 1904g, 1913a; Hall 1932: 265; Hayward 1942: 29; Herfs 1949: 26; Hill, D. S. 1983: 496; Hollrung 1902: 134–135; Hubbard 1897b: 20; Ishikura 1966; Kalshoven 1924c, 1932: 243, 1954: 13, 1961c; Kleine 1932a: 305; Koningsberger 1898: 38, 1908: 76; Koningsberger & Zimmermann 1901: 97–98; Lever 1940a: 38; Mathur & Singh 1960b: 24, 1961b: 48; Maxwell-Lefroy 1909: 395; Mayne 1917: 27, 1919: 22; Mesa 1931: 17; Navel 1921: 77, 94; Ormerod 1892; Paine 1934: 39–41, 1935: 39; Petch 1921: 233; Pierce, W. D. 1917: 193; Roberts 1987; Rutgers 1920: 1–43; Rutherford 1914b: 222; Seshadri 1968; Small 1921: 38; Smith 1921: 1–23; Stebbing 1914: 583; Supriana et al. 1978; Swabey 1935: 6; Swezey 1945: 353; Tuker 1952: 347; Van Dine 1926: 1–11; Wolcott 1933: 202, 373; Wurth 1908: 64; Wylie & Shanahan 1975; Wyniger 1962a: 57, 1962b: 179; Zehntner 1899: 586–587, 1900: 503. (**ec**) Beeson 1923; Browne 1958b; Hagedorn 1907c; Kalshoven 1961c; Muesebeck 1937: 24; Roberts 1977a: 263; Sharples 1936: 384; Stebbing 1914: 583. (**hb**) Ashby 1915: 299; Baltazar & Salazar 1979: 86; Batista 1947: 78; Beaver 1976b: 541, 1988: 66; Beaver & Browne 1978: 610; Beeson 1916a: 221, 1917, 1923; Beffa 1949; Blandford 1892b, 1894b; Brimblecombe 1951, 1956; Browne 1941: 62, 67, 1949e: 174–189, 1958b, 1961c: 141–143, 1961d: 49, 1963a: 242, 1965a: 253, 1968b: 716; Chobaut 1897: 262; Cotes 1893a, 1893b; Eggers 1905: 98; Froggatt 1925, 1927; Gray, B. 1968: 311, 1974c; Gray, B. & Wylie 1974; Hagedorn 1913a: 21–22; Herfs 1949a: 26; Hopkins 1894g, 1905c: 148; Hubbard 1897b: 20–21; Kalshoven 1924c: 8–10, 1958a: 186, 1959a: 224, 1959c: 140, 1961c, 1962a: 17, 19, 1964; Kleine 1932a: 305; Morstatt 1924: 49; Roberts 1977a: 263, 1987; Schedl 1962j: 374; Schedl, W. 1962: 369; Seshadri 1968; Sharples 1936: 384; Speyer 1923: 12; Stebbing 1908a: 111, 1914: 583; Takemori & Daimon 1973; Thomas 1960: 77; Viana 1964: 123; Wylie & Shanahan 1975; Yoshida et al.

1977; Zehntner 1900: 1–21, 1900: 503. (**ds**) Alibert 1951: 149; Alluaud 1900: 438–442; Aulmann 1911: 436–441; Bain 1974: 15; Ballard 1921; Beaver 1976: 541, 1987b: 65, 1988a: 66, 1990b: 150; Beaver & Browne 1978: 610; Beeson 1916a, 1919b, 1923: 165, 1930: 47–96, 1935: 108, 1938b: 295, 1940: 198–199, 1941: 403–404; Bhasin, Roonwal, & Singh 1958: 36, 98; Blackwelder 1947: 780; Blandford 1893c: 12, 1894b: 261, 1895a: 316, 322, 1896a: 20, 1896f: 243, 1897b, 1898: 475; Brader 1964: 4–5; Brimblecombe 1951: 1–37, 1953: 30–33; Browne 1935a: 4, 1938b: 83–84, 1954: 204, 1958: 164–182, 1961a: 304, 1961c: 141, 1963a: 242, 1965a: 188, 1966: 253, 1968b: 716–717, 1968c: 113, 1970: 542, 1974a: 65, 1975a: 760, 1980c: 486; Bruch 1914: 427–429; Chadwick & Nikitin 1968; Chevalier 1931; Cola 1971,1973; Cotes 1893a, 1893b, 1896: 4–5, 101–102; Dinther 1960: 111; Dumbleton 1954: 28, 96; Dupont 1917: 20–22; Eggers 1904; Fauvel 1897: 66; Frappa 1933: 179; Froggatt 1936: 18; Gardner 1957: 33; Gemminger & Harold 1872: 2686; Ghesquiere 1933a, 1933b; Gowdey 1923: 17, 45, 1924: 21, 1926: 27; Gray, B. 1967: 9–10, 1968: 311; Gray & Wylie 1974: 86; Green 1912a: 39; Guagliumi 1966: 173; Hagedorn 1904: 449, 1907a: 261, 1907b: 111–112, 1907c: 292, 1910d: 108, 1913a; Hargreaves 1925: 21–28, 1937: 510; Hart 1892: 342, 1893: 51–52; Hill, D. S. 1983: 496, 1987: 341; Horion 1951; Ishikura 1966; Jansson 1940: 63; Kalshoven 1924b: 357, 1932: 243, 1939: 334, 1951: 854, 1954: 13, 1958a: 186, 1959c: 140, 1964: 131; Kleine 1912a: 162, 212, 1913b: 162, 1914a: 22–23, 1914b: 270, 274, 279–280, 288, 290, 301, 312, 315, 323, 327, 1928: 305–306, 1932a: 305, 1934a: 175; Kolbe 1910: 40; Koningsberger 1908: 76; Kraus 1943: 88; Lacordaire 1866: 383; Lee 1971: 31; LePelley 1968: 145; Lepesme et al. 1948: 647–648; Lever 1940: 38, 1941: 79, 1945: 367; Lundblad 1958: 489; Mathur & Singh 1960a: 24; Maxwell-Lefroy & Howlett 1909: 395; Mesa 1935: 95; Murayama 1934d: 510; Nobuchi 1967: 14, 22, 1978a: 41, 1979a: 407; Nobuchi & Ono 1973: 182; Nonveiller 1984: 42; Nunberg 1960b: 161, 1961a: 331, 1963c: 98, 1965b: 21, 1972b: 198; Ohno, Yoneyama, & Nakazawa 1982a: 4, 1982b: 8, 1987a: 88, 1987b: 94; Ohno, Yoshioka, Uchida, Yoneyama, & Tsukamoto 1989: 64; Ohno, Yoshioka, Yoneyama, & Nakazawa 1988a: 94; Pierce, W. D. 1917: 193; Pope 1924: 14–15; Roba 1935: 340; Roberts 1969: 131–133, 1977a: 263; Roonwal 1954: 19–86; Sampson 1914: 387; Samuelson 1981: 82; Schedl 1931c: 346, 1934f: 1646, 1935j: 1, 1936a: 529, 1936j: 5, 21, 1937e: 544, 1938g: 426–427, 1939a: 468, 1939e: 332, 1939f: 51, 1940a: 320–321, 1940b: 433–435, 1941d: 380, 1941f: 116, 1942a: 171, 1942b: 148, 1942c: 164, 380, 1942d: 7, 1943d: 69, 1948g: 26, 1950f: 40, 54, 1950g: 894–899, 1951i: 45–49, 1952b: 364, 1953b: 124, 1953c: 291, 1953d: 71, 1954a: 143–144, 1955b: 279–287, 1955c: 31, 1955i: 212, 1957a: 194, 1957d: 102, 1958d: 189, 1959a: 503, 1960a: 76, 1961c: 70–71, 1962b: 184–186, 1962h: 65, 1962i: 72–75, 1962j: 374, 1962k: 1101, 1963e: 155, 1963f: 60, 1964c: 304, 1964d: 212, 1964i: 248, 1965a: 340, 1965e: 355, 1965g: 22, 1966b: 63, 1966e: 44, 1966f: 77–78, 1966g: 30–37, 1967f: 151, 1968e: 263, 1969a: 208, 1969c: 54, 1969d: 7–12, 1969e: 156, 1969f: 1, 1969h: 105, 1969i: 137, 1970e: 90, 1970f: 581, 1971a: 278, 1971c: 362, 1971e: 5, 1971f: 149, 1972a: 144, 1972b: 266, 1973b: 211, 1973c: 379, 1974e: 53, 1975a: 451, 1975c: 383, 1975e: 451, 1975h: 352, 1975i: 346, 1975j: 294, 1977b: 176, 1977d: 279, 1977e: 43, 1978d: 73, 1979a: 158, 1979b: 416, 1980b: 184; Schwarz 1895b: 171; Schwerdtfeger 1960: 69–71; Smee 1964: 25; Smith, J. H. 1932: 3–12; Spahr 1981; Speyer 1923: 12, 19, 21; Stahel 1917: 3; Supriana et al. 1978; Swezey 1935: 7, 1941: 123–126, 1954: 14–78; Thomas, R. T. S. 1960a, 1960b; Viana 1964: 123; Wichmann 1914a: 413, 1954a: 521–522; Wollaston 1857: 96, 1865: 237; Wood, S. L. 1957e: 1273, 1960a: 51; Yin, Huang, & Li 1984: 164. (**tx**) Beeson 1929: 240–241; Beffa 1949; Blandford 1892b: 153–178, 1894b, 1898c; Browne 1955: 355; Carne et al. 1980; Eggers 1922a: 88, 1923a: 197, 1925: 154, 1926: 301, 1927a: 193–194, 1930d, 1939: 114; Eichhoff 1875: 203, 1878b: 374–377, 403; Ferrari 1867a: 24, 91–92, 1867b: 107; Green 1912a: 39; Hagedorn 1907a, 1907b, 1910a: 155, 1913b: 257; Hubbard 1897b: 20; Kalshoven 1959a: 224–225; Keler 1928: 30; Lacordaire 1866: 383; Lea 1910: 138; Lever 1941: 79; Nobuchi 1967:pl. 2, 1978a:pl. 4, 1983: 303; Sampson 1914: 387; Samuelson 1981: 53, 82; Schaufuss 1897a: 210; Schedl 1931c: 347, 1934f: 1646, 1952h: 66, 71, 1955b: 278, 1955g: 46, 1958b: 101, 1958i: 214, 1959a: 503, 1960a: 78, 1962j: 374, 1963j: 482, 1977b: 176; Schroder 1901: 91; Schwarz 1895b: 171; Stark 1952: 24; Stebbing 1906: 406–408, 1908b: 1, 1914: 583; Strohmeyer 1911b: 24–25; Waterhouse 1882: 21–21; Wichmann 1914a: 413; Wollaston 1857: 96, 1865: 237–238, 1867: 113, 1869: 321; Wood, S. L. 1960a: 51, 65–70, 1969, 1979b: 136; Wylie & Yule 1977; Yin, Huang, & Li 1984: 164.

testaceus Walker 1959: 260 (*Bostrichus*). Holotype ♀; Ceylon; BMNH, London. Synonymy: Browne 1955: 355.

Notes: (1) Schedl 1979c: 252 lists the holotype as being in the Schedl Collection.

References: (**cn**) Browne 1938b, 1949e; Chandra 1981; Chatterjee et al. 1950: 38; Ebeling 1950, 1959; Kalshoven 1951: 851; Lever 1940a: 38–42, 99–101, 1941: 79, 1945: 370; Mathur, Chatterjee, & Thapa 1965: 17, 1970: 5; Mathur & Singh 1960a: 9, 1960b: 6, 1961a: 10, 1961b: 6; Mumford 1961: 38, 1963: 11; Roonwal 1954: 19; Roonwal, Chatterjee, & Thapa 1961b: 8; Yunus & Hua 1980: 230; Zehntner 1900: 501. (**ec**) Chatterjee & Chatterjee 1951. (**hb**) Chandra 1981; Chatterjee & Chatterjee 1951; Chat-

terjee et al. 1950; Ebeling 1950; Kalshoven 1951: 851; Zehntner 1900: 501. (**ds**) Beeson 1961: 309; Blackwelder 1947: 780; Chatterjee & Chatterjee 1951; Chatterjee et al. 1950; Dumbleton 1954; Ebeling 1950, 1959; Ferrer 1942; Froggatt 1936; Gardiner 1957a; Gemminger & Harold 1872: 2692; Hagedorn 1910d: 60, 112; Kleine 1913b: 128, 163, 1914b: 273–274; Lacordaire 1866: 583; Lepesme et al. 1948: 647; Lever 1940b: 99, 1941: 79; Mathur & Singh 1960a: 9, 1960b: 6, 1961a: 10, 1961b: 14; Mumford 1961: 38, 1963: 11; Nobuchi 1967: 23; Nunberg 1960a: 295; Roonwal 1954: 19; Roonwal, Chatterjee, & Thapa 1961a: 4, 1961b: 7; Schedl 1936d: 5, 1936g: 529, 1937f: 15, 1938g: 426; Spahr 1981: 62; Swezey 1941: 123, 1954: 14; Yunus & Hua 1980: 230. (**tx**) Browne 1955: 355; Chandra 1981: 288; Eggers 1939c: 114; Ferrari 1867a: 74; Hagedorn 1910a: 106, 157; Lacordaire 1866: 383; Lever 1941: 79; Motschulsky 1863: 511; Schedl 1935j: 1, 1937e: 544, 1939a: 468, 1939e: 332, 1939f: 51, 1940a: 365, 1940b: 434–435, 1941d: 380, 1941f: 116, 1942a: 171, 1942b: 147–148, 1942c: 164, 1942d: 7, 1948g: 26, 1950f: 40, 1950g: 893–894, 899, 1951i: 45, 1951k: 141, 1952b: 364, 1953b: 124, 1953c: 291, 1953d: 71, 1954a: 143, 1955b: 281–282, 1955c: 31, 1955i: 212, 1958i: 214, 1979c: 252; Walker 1859: 260; Wood, S. L. 1960a: 70.

duponti Montrouzier 1861: 265. Syntypes ♀; (not seen). Synonymy: Hagedorn 1910d: 108.

References: (**ds**) Gemminger & Harold 1872: 2690; Lacordaire 1866: 383. (**tx**) Ferrari 1867a: 74; Hagedorn 1910d: 108; Lacordaire 1866: 383; Montrouzier 1861: 265.

tuberculatus Motschulsky 1863: 511 (*Anodius*). Syntypes 2 ♀; Ile Ceylan; IZM, Moscow. Synonymy: Wood 1969c: 117.

References: (**ds**) Gemminger & Harold 1872: 2686; Hagedorn 1910d: 112; Kleine 1913b: 163, 1914b: 274. (**tx**) Hagedorn 1910a: 157; Motschulsky 1863: 511; Schedl 1959a: 503; Wood, S. L. 1969c: 117.

denticulus Motschulsky 1863: 512 (*Anodius*). Lectotype ♀; Ceylon, type labeled Indie Occidentale; IZM, Moscow, designated by Wood 1969c: 117. Synonymy: Wood 1969c: 117.

Notes: (1) Although the lectotype label and all subsequent references to this name have the spelling *denticulatus*, the only spelling used by Motschulsky is that cited above.

References: (**ds**) Gemminger & Harold 1872: 2685; Hagedorn 1910d: 101; Kleine 1913b: 160, 1914b: 270. (**tx**) Eggers 1929e: 48; Hagedorn 1910a: 153; Motschulsky 1863: 512; Schedl 1959a: 505, 1962j: 459; Wood, S. L. 1969c: 117.

kraatzi Eichhoff 1868c: 152. Holotype ♀; Ceylon; Hamburg Museum, lost. Synonymy: Schedl 1959a: 503.

References: (**cn**) Beeson 1938a; Box 1953a; Ebeling 1959; Holloway 1936: 183; Illingsworth 1938: 24; Kalshoven 1932: 243, 1936a: 188. (**hb**) Beeson 1929; Blandford 1893c: 1–46; Browne 1935a, 1941; Kalshoven 1959a: 224. (**ds**) Beeson 1929, 1930: 241–244, 1935a, 1935b: 108, 114, 1938a, 1938b: 293, 1940, 1961: 306; Browne 1935a; Ebeling 1959; Eggers 1926a; Gemminger & Harold 1872: 2686; Hagen 1890; Kalshoven 1932: 243; Kolbe 1910: 40; Krauss 1943: 88; Murayama 1936b: 115; Sampson 1914: 387; Schedl 1936j: 21. (**tx**) Beeson 1929: 240–243, 1930: 241–244, 1935a: 118, 1935b: 108, 114, 1938: 292, 1940: 198–199; Blandford 1893c: 1–46; Browne 1955: 355; Eggers 1922: 88, 1925: 154, 1926a: 301, 1927a: 194; Eichhoff 1868c: 152, 1875: 203, 1878b: 374; Kalshoven 1959a: 224; Sampson 1914: 387; Schaufuss 1897a: 210; Schedl 1931c: 346, 1934f: 1646, 1951k: 140, 1959a: 503, 1962j: 374; Wood, S. L. 1960a: 70.

kraatzi philippinensis Eichhoff 1878b: 374. Holotype ♀; Philippine Islands; Schedl (1979c: 134) Collection in NHMW, Wien. Synonymy: Schedl 1959a: 503.

Notes: (3) Eggers 1925: 154 erroneously synonymized this species with *volvulus* Fabricius, a species not yet known from the Philippine Islands.

References: (**ds**) Nobuchi 1967: 22; Nunberg 1961a: 611; Schedl 1936d: 4. (**tx**) Eggers 1925: 154, 1939c: 114; Eichhoff 1878b: 374; Murayama 1934: 505–512; Schedl 1959a: 503, 1962j: 404, 1979c: 134; Strohmeyer 1911b: 17, 25.

immaturus Blackburn 1885: 193. Syntypes ♀; mountains of Oahu, about 2000 feet, and Hawaii; BMNH, London. Synonymy: Beeson 1929: 240.

References: (**cn**) Ehrhorn 1915: 103–161; Pope 1924: 14, 1925: 5. (**ds**) Barber 1914: 59; Beeson 1938: 292; Hagedorn 1910d: 105; Kleine 1913b: 161, 1914b: 302, 1934a: 173. (**tx**) Beeson 1929: 240–241; Blackburn 1885: 193; Hagedorn 1910a: 154; Schedl 1941f: 116, 1962j: 374, 1979c: 121; Sharp 1892: 193.

hirsutus Lea 1893: 321 (*Xylopertha*). Syntypes ♀; Tamworth, Cootamundra, Tweed and Richmond Rivers, New South Wales, Australia; presumably SAM, Adelaide. Synonymy: Schedl 1936g: 529, 1959a: 503.

Notes: (1) Lea 1904: 106 (to *Xyleborus*).

References: (**cn**) Froggatt 1926a, 1927; Lever 1941: 79; Smith, J. H. 1932: 232. (**hb**) Froggatt 1926a, 1927. (**tx**) Lea 1893: 321, 1904: 106, 1910: 138; Schedl 1936g: 529, 1959a: 503.

whitteni Beeson 1935b: 113. Syntypes 4 ♀; Uapou: Hakahetau Valley, 1500 feet; not given [BPBM, Honolulu?]. Synonymy: Beaver 1991: 95.

References: (**ds**) Beeson 1938b: 294. (**tx**) Beaver 1991: 95; Beeson 1935b: 113–114.

criticus Schedl 1950g: 899. Lectotype ♀; Port Blair, Andamans, or Manila, P.I.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 70. Synonymy: Wood 1989: 177.
References: (**ds**) Schedl 1966b: 50. (**tx**) Nobuchi 1983: 302; Schedl 1950g: 899, 1979c: 70; Wood, S. L. 1989: 177.

***perlongus* Eggers** 1943a: 386. Holotype ♀; Bolivia (Cochabamba); Eggers Collection, in NHMW, Wien.
Distribution: South America (Argentina/ Bolivia/ Peru).
References: (**tx**) Eggers 1943a: 386; Schedl 1979c: 189.

pulcnerrimus Schedl 1948d: 38. Holotype ♀; Peru; Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 177.
References: (**tx**) Schedl 1948d: 38, 1950i: 146, 1979c: 203; Wood, S, L. 1989: 177.

pulchripes Schedl 1958f: 46. Holotype ♀; Argentinien: Misiones; Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 177.
References: (**tx**) Schedl 1958f: 46, 1979c: 203; Wood, S. L. 1989: 177.

***pernotus* Schedl** 1934d: 88. Lectotype ♀; Java, Mt. Gede, 900 m; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 190.
Distribution: Indonesia (Java).
References: (**hb**) Kalshoven 1959c: 143. (**ds**) Kalshoven 1935a: 14, 1959c: 143. (**tx**) Schedl 1934d: 88, 1951i: 63, 1979c: 190.

***perplexus* Schedl** 1969b: 218. Holotype ♀; Kerevat, New Britain District, New Guinea; CSIRO, Canberra.
Distribution: New Britain Island.
Hosts: *Araucaria cunninghamii*, *Pometia pinnata*.
References: (**tx**) Schedl 1969b: 218, 1979c: 190.

***perpunctatus* Schedl** 1971c: 382. Holotype ♀; Sarawak, Semengoh; BMNH, London.
Distribution: Indonesia (Sarawak in Borneo).
Hosts: Rattan.
References: (**tx**) Schedl 1971c: 382, 1979c: 191.

***persimilis* Eggers** 1927c: 97. Lectotype ♀; Philippinen: Mindanao, Prov. Surigao, Surigao; USNM, Washington, designated by Anderson & Anderson 1971: 24.
Figures: Nobuchi 1978a:pl. 2.
Distribution: Asia (India/ Malaya), Indonesia (Sarawak in Borneo), Philippine Islands (Mindanao).
Hosts: *Balanocarpus heimii*, *Shorea parvifolia*, *S. rugosa*.
References: (**cn**) Mathur & Singh 1961a: 41. (**hb**) Browne 1941. (**ds**) Beeson 1961: 308; Mathur & Singh 1961a: 41; Nobuchi 1978a: 19; Schedl 1936d: 4, 1936j: 20, 1964c: 304, 1966b: 65, 1966g: 32, 1971c: 365. (**tx**) Anderson, W. H. & Anderson 1971: 24; Eggers 1927c: 97–98; Nobuchi 1978a: pl. 2, 1983: 303; Schedl 1936d: 4, 1936j: 20, 1937e: 544, 1942a: 171, 1962n: 699, 1979c: 191.

balanocarpi Nunberg 1961b: 619. Holotype ♀; Malay Peninsula, Kelantan Ulu Lebir; BMNH, London.
References: (**tx**) Nunberg 1961a: 630.

***peruvianus* Schedl** 1951m: 123. Holotype ♀; Peruvia, Chanchamajo; Schedl Collection in NHMW, Wien.
Distribution: South America (Peru).
References: (**tx**) Schedl 1951m: 123, 1979c: 192.

***pfeili* (Ratzeburg)** 1837: 168 (*Bostrichus*). Syntypes ♀; Luneburgschen und in Bayern; not located.
Figures: Balachowsky 1949a: 222, 230, Grune 1979: 154, Nobuchi 1978a:pl. 4, Nunberg 1978: 115, Pfeffer 1989a:pl. 8.
Distribution: Africa (Algeria/ Morocco), Asia (Fujian, Sichuan in China/ Japan/ Korea/ Turkey), Europe (Austria/ Belgium/ Bulgaria/ Czechoslovakia/ France/ Germany/ Greece/ Hungary/ Italy/ Poland/ Romania/ Spain/ Switzerland/ W USSR), New Zealand(introduced).
Hosts: *Abies fabri*, *Acer* sp., *Alnus* sp., *Castanea* sp., *Chamaecyparis obtusa*, *Cinnamomum* sp., *Diospyros kaki*, *Fagus silvatica*, *Machilus* sp., *Populus tremula*, *P.* sp., *Pterocarpus dalbergoides*, *Quercus* sp., *Schima* sp., *Sterculia campanulata*, *Terminalia biolata*, *Ulmus* sp.
Notes: (3) Reitter 1913a: 82 named an aberration as *covinus*, no status.
References: (**ay**) Escherich 1923b: 488; Finnegan 1963: 137; Francke-Grosmann 1956b; Murayama 1933a: 2. (**bv**) Grune 1979: 155. (**cn**) Anonymous 1980g; Barbey 1925: 648; Murayama 1954a: 25; Nosek 1951: 109; Paulian 1943: 324; Ueno 1960; Wachtl 1901: 381; Wichmann 1927b: 353. (**ec**) Finnegan 1963: 137; Francke-Grosmann 1956b; Gyorfi 1941b; Inouye et al. 1955: 109; Kleine 1909a: 49, 77; Nosek 1951: 109, 1959a: 118, 1959b: 87; Pfeffer 1928b: 2, 1943b: 181; Pfeffer & Prihoda 1950: 3; Roubal 1934b: 177; Vite 1952a: 107; Vitzthum 1926: 479; Woodring 1966c: 133. (**hb**) Baeta Neves 1943a; Barbey 1901: 28, 108, 1925: 648; Bargmann 1906; Buysson 1910; Dombrowsky 1887; Eggers 1908d; Eichhoff 1881a: 54, 278; Escherich 1923b: 488; Gyorfi 1957; Henschel 1895a: 193; Inouye et al. 1955: 102; Karpinski & Strawinski 1948: 156; Nosek 1959a: 118, 1959b: 87; Paulian 1943: 324; Pfeffer 1942a: 3; Postner 1974: 467; Ratzeburg 1837: 168; Reitter 1908c: 21; Spessivtsev 1913a: 104; Stark 1926a: 336, 1952: 439; Vite 1952a: 107; Wachtl 1876a: 458, 1901: 381; Wichmann 1927b: 353. (**ds**) Acloque 1896; Anonymous 1980g; Audras & Schaefer 1957; Barthe 1896; Brakman 1966b: 206; Brancsik 1871; Buresh & Lazarov 1956; Buysson 1910; Calwer 1884, 1893; Cho 1957; Choo 1983: 108; Choo & Woo 1985: 166; Endrodi 1958b; Escher-

ich 1923b: 488, 1932b; Gaubil 1849; Gemminger & Harold 1872: 2686; Grune 1979: 155; Gyorfi 1940: 47, 1941b; Hagedorn 1910d: 108; Henschel 1895a: 193; Heyden, Reitter, & Weise 1883: 182, 1891: 674, 1901: 713; Hoffmann 1936; Horion 1951; Karpinski 1948b: 230; Karpinski & Strawinski 1948: 156; Kestercanek 1881a: 12; Kleine 1912a: 268, 1913a: 36, 1913b: 162, 1934a: 175; Ko 1969: 285; Kraatz 1869: 60; Lacordaire 1866: 381; Langhoffer 1915c: 158; Lomnicki 1913b: 148; Lucht 1987: 280; Majzlan et al. 1987; Murayama 1929b: 2, 1930b: 22, 1937b: 372, 374, 1954a: 25, 1954b: 181 1955: 100; Negru 1955: 45, 1968a: 456; Nobuchi 1978a: 40; Nunberg 1928b: 88, 109, 1954: 62; Pfeffer 1928b: 2, 1931b: 73, 1936: 90, 1989a: 88; Pittioni 1943: 176; Postner 1974: 467; Ratzeburg 1837: 168; Redtenbacher 1858: 837; Reitter 1869b: 155, 1894a: 90, 1916: 294; Revy & Siroki 1942: 82; Rohrig 1955: 37; Roubal 1941: 275; Sainte-Claire & Mequignon 1938: 449; Schaufuss 1915: 1237; Schaum 1859: 96, 1862: 101; Schedl 1963j: 481–482, 1966g: 30, 1980a: 20, 1981b: 94; Scheidt 1919: 165; Schilsky 1890: 196, 1909: 189; Seidlitz 1872: 396, 1891a: 567, 1891b: 613; Stark 1926a: 336, 1926b: 104, 1927b: 89, 1952: 439; Stein 1868: 114; Stein & Weise 1877: 165; Stierlin 1898: 446; Tredl 1907: 18; Wachtl 1876a: 458; Wichmann 1927a: 69. (**tx**) Acloque 1896; Balachowsky 1949a: 230–231; Barbey 1901: 28, 108; Brancsik 1871; Choo 1983: 108; Dombrowsky 1887; Eggers 1908c: 4–7; Eichhoff 1864b: 37, 1876a: 378–379, 1878b: 360, 1881a: 54, 278, 1883a: 116, 142; Endrodi 1957b; Escherich 1923b: 488; Fauvel 1889; Ferrari 1867a: 20, 1867b: 114; Fleischer 1927; Formanek 1907: 53; Grune 1979: 154–155; Hagedorn 1910a: 155; Henschel 1895a: 193; Hoffmann 1936: 44–45; Jacquelin du Val & Fairmaire 1868: 109; Karpinski & Strawinski 1948: 156; Kuhnt 1913: 1060; Lacordaire 1866: 381; Letzner 1891: 377; Lucht 1987: 280; Murayama 1930b: 22, 1933a: 2, 1937b: 372, 374, 1954b: 181, 1955: 100; Nobuchi 1978a: pl. 4, 1985c: 23; Nunberg 1954: 62, 1978: 115; Pfeffer 1932b: 21, 1942a: 3, 1955a: 196, 1989a: pl. 8; Portevin 1935: 329; Postner 1974: 467; Quaschik 1953: 35; Ratzeburg 1837: 168; Redtenbacher 1849a: 791, 1849b: 26, 1858: 837; Reitter 1894a: 90, 1913a: 81, 1916: 294; Rey 1892b: 30; Schedl 1934f: 1646, 1952f: 88, 1980a: 20, 1981b: 94; Seidlitz 1872: 396, 1891a: 567, 1891b: 613; Spessivtsev 1913a: 104, 1922a: 479, 1931: 60; Stark 1952: 439; Stierlin 1898: 446; Wylie & Yule 1977. (**ms**) Eggers 1912e; Escherich 1932b.

alni Mulsant & Rey 1856: 111 (*Bostrichus*). Syntypes ♀; Environs de Lyon, France; not located. Synonymy: Hagedorn 1910d: 108.
References: (**hb**) Wachtl 1876a: 458. (**ds**) Pfeffer 1989a: 88; Schaum 1862: 101; Schilsky 1909: 189; Stein 1868: 114; Stein & Weise 1877: 165; Wachtl 1876a: 458. (**tx**) Buysson 1880; Ferrari 1867a: 21–22, 1867b: 114; Hagedorn 1910d: 108; Letzner 1891: 377; Mulsant & Rey 1856: 111; Perris 1866: 195–196.

vicarius Eichhoff 1875: 203. Holotype ♀; Japan; IRSNB, Brussels. Synonymy: Schedl 1963j: 481.
References: (**cn**) Mathur & Singh 1961a: 69, 1961b: 28; Murayama 1954a: 11. (**ds**) Beeson 1930: 262–264, 1961: 310; Blandford 1894c: 579; Hagedorn 1910d: 112; Kleine 1913b: 163, 1914b: 261, 279; Mathur & Singh 1961a: 69, 1961b: 28; Murayama 1954a: 11, 1954b: 185. (**tx**) Beeson 1930: 262–264; Blandford 1894d: 103, 116; Eggers 1925: 154, 1927b: 408; Eichhoff 1875: 203, 1877a: 126, 1878b: 376; Hagedorn 1910a: 157; Murayama 1954b: 185; Schedl 1934f: 1646, 1938h: 462–463, 1962j: 405, 1963j: 481.

adumbratus Blandford 1894d: 115. Syntypes ♀; Nagasaki, Hitoyoshi, Oyama, and Subashiri, Japan; BMNH, London. Synonymy: Schedl 1963j: 482.
References: (**bv**) Choo, Woo, & Park 1988. (**cn**) Anonymous 1980g; Beeson 1915: 8–11; Stebbing 1914: 601; Wichmann 1957a: 83. (**ec**) Stebbing 1914: 601. (**hb**) Niisima 1908b: 18; Stebbing 1914: 601. (**ds**) Anonymous 1980g; Blandford 1894c: 579; Choo 1983: 102; Choo & Woo 1985: 166; Choo, Woo, & Nobuchi 1988a: 134; Choo, Woo, & Park 1988; Cola 1973; Hagedorn 1910d: 98; Kleine 1913b: 158, 1914b: 260; Murayama 1936a: 129, 1949c: 102, 1951c: 4, 1954b: 175, 1955: 102; Niisima 1908b: 18; Nobuchi 1966d: 26; Nohira & Ogawa 1986; Wichmann 1957a: 83; Yin, Huang, & Li 1984: 163. (**tx**) Beeson 1929: 243; Blandford 1894d: 115; Choo 1983: 102; Hagedorn 1910a: 152; Murayama 1934c: 296, 299, 1936a: 129, 1954b: 175, 1955: 102; Nobuchi 1966d: 26, pl. 3, 4; Schedl 1938h: 462, 1963j: 481–482; Stebbing 1914: 601; Wichmann 1914c: 139; Yin, Huang, & Li 1984: 163.

***pileatulus* Schedl** 1975f: 369. Holotype ♀; Upper Manki logging area, Bulolo, Morobe District [New Guinea]; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1975f: 369, 1979c: 193.

***pilifer* Eggers** 1923a: 178. Syntypes 2 ♀; Deutsch Neu Guinea, Kaiserin Augustafluss; MNB, Berlin and Eggers Collection (USNM, Washington, or NHMW, Wien?).
Distribution: New Guinea.
References: (**tx**) Eggers 1923a: 178–179; Schedl 1936d: 11.

***pilipunctatus* Browne** 1966: 251. Holotype ♀; Philippines, Palawan: Tagembung, Mantalingajan Range, 1150 m; UZMC, Copenhagen.
Distribution: Philippine Islands (Palawan).
References: (**tx**) Browne 1966: 251–252; Nobuchi 1983: 303.

***pinguis* Browne** 1983a: 557. Holotype ♀; Lever Harbour (Solomon Islands) to Nagoya (Japan), imported; BMNH, London.
Distribution: Solomon Islands.
Hosts: Watergum log.
References: (**ds**) Ohno, Yoshioka, Yoneyama, & Nakazawa 1988a: 94. (**tx**) Browne 1983a: 557.

***pinicola* Eggers** 1930d: 206. Holotype ♀; Burma (Monkung, Southern Shan States); FRI, Dehra Dun.
Distribution: Asia (Burma/ Thailand).
Hosts: *Pinus khasya*, *P. massoniana*, *P. merkusii*.
References: (**ds**) Beaver 1990a: 280; Beeson 1930: 252, 1961: 308; Browne 1972: 20; Kleine 1934a: 175. (**tx**) Beeson 1930: 252; Eggers 1930d: 206.

***pinivorus* Browne** 1980a: 374. Holotype ♀; Phan Rang (Vietnam) to Nagoya (Japan), imported; BMNH, London.
Distribution: Asia (Vietnam).
Hosts: *Pinus* sp.
References: (**tx**) Browne 1980a: 374.

***planicollis* Zimmermann** 1868: 145. Holotype ♀; Pennsylvania [USA]; MCZ, Cambridge.
Distribution: North America (Illinois, Indiana, Missouri, North Carolina, Pennsylvania in USA).
References: (**cn**) Hubbard 1897b: 20. (**hb**) Beal & Massey 1945: 156–157; Chamberlin 1939: 450–451; Deyrup & Atkinson 1987a: 65; Hubbard 1897b: 20. (**ds**) Beal & Massey 1945: 156–157; Blatchley & Leng 1916: 617; Chamberlin 1939: 450–451; Deyrup & Atkinson 1987a: 65, 1987b: 63; Drooz 1985: 374; Gemminger & Harold 1872: 2686; Henshaw 1885: 148; Leng 1920: 342; Schwarz 1891: 79; Swaine 1909: 154; Weber & McPherson 1991: 49, 54; Wood, S. L. 1982b: 835. (**tx**) Beal & Massey 1945: 156–157; Blandford 1898b: 217; Blatchley & Leng 1916: 617; Bright 1968b: 1313; Chamberlin 1939: 450–451; Eichhoff 1878b: 391; Hopkins 1915b: 61, 1915c: 217; Hubbard 1897b: 20–22; LeConte 1868: 160, 1876: 360–361; Swaine 1909: 154; Wood, S. L. 1982b: 835; Zimmermann 1868: 145.

***planipennis* Schedl** 1955b: 305. Holotype ♀; Fiji Inseln; Eggers Collection, in NHMW, Wien.
Distribution: Fiji Islands.
References: (**tx**) Browne 1974a: 65; Schedl 1955b: 285, 305, 1979c: 196.

***platyurus* Browne** 1984f: 74. Holotype ♀; New Guinea: Morobe District, Mount Kaindi, 2350 m; BMNH, London.
Distribution: New Guinea.
Hosts: *Melicope* sp.
References: (**tx**) Browne 1984f: 74.

***pleiades* Samuelson** 1981: 84. Holotype ♀; Hawaii: Maui, 1 (E): Kipahulu Val., Camp 2; BPBM, Honolulu.
Figures: Samuelson 1981: 63.
Distribution: Hawaiian Islands (Maui).
References: (**tx**) Samuelson 1981: 63, 84.

***politus* Hagedorn** 1905a: 413. Lectotype ♀; Placers du Carsevenne, French Guiana; MNHN, Paris, designated by Wood 1982b: 815.
Distribution: North America (Costa Rica), South America (Cayenne/ Venezuela).
References: (**cn**) Felt 1930a: 247–248, 276. (**hb**) Felt 1930a: 247–248, 276. (**ds**) Blackwelder 1947: 780; Felt 1930a: 247–248, 276; Hagedorn 1910d: 109; Kleine 1913b: 162, 1914b: 339; Wood, S. L. 1982b: 815. (**tx**) Eggers 1941a: 103; Hagedorn 1905a: 413, 1910a: 155; Wood, S. L. 1982b: 815.

***posticegranulatus* Schedl** 1938h: 462. Holotype ♀; Kongo; Schedl Collection in NHMW, Wien.
Distribution: Africa (Ivory Coast/ Zaire).
Hosts: *Canarium* sp.
References: (**ds**) Schedl 1964e: 69. (**tx**) Schedl 1938h: 462, 1962j: 211, 1979c: 198.

***posticepilosus* Schedl** 1951i: 92. Holotype ♀; Pangil, Laguna, Philippine Islands; Schedl Collection in NHMW, Wien.
Figures: Nobuchi 1978a:pl. 3.
Distribution: Philippine Islands.
References: (**ds**) Choo, Woo, & Kim 1981: 201; Nobuchi 1978a: 28; Ohno, Yoneyama, & Nakazawa 1987a: 88; Schedl 1966b: 66, 1966g: 32. (**tx**) Nobuchi 1978a:pl. 3, 1983: 303; Schedl 1951i: 92, 1979c: 198.

***posticoides* Schedl** 1948f: 281. Holotype ♀; Bolivia, Cochabamba; Schedl Collection in NHMW, Wien.
Distribution: South America (Bolivia).
References: (**tx**) Schedl 1948f: 281, 1979c: 198.

***posticus* Eichhoff** 1869b: 281. Holotype ♀; Caracas, Venezuela; Hamburg Museum, lost.
Figures: Nunberg 1959a:pl. 26, figs. 3–4, Pedrosa-Macedo & Schonherr 1985: 35.
Distribution: Antilles Islands (Guadeloupe/ Puerto Rico/ Trinidad), North America (Costa Rica/ Guatemala/ Chiapas, Veracruz in Mexico/ Panama), South America (Bolivia/ Brazil/ Colombia/ Guyana/ Peru/ Venezuela).
Hosts: *Erythrina costaricensis*, *Ficus* spp., *Spondias purpurea*, *Theobroma cacao*.
References: (**cn**) Estrada & Atkinson 1988: 207. (**ec**) Lyon 1960: 461. (**hb**) Atkinson & Equihua 1985b: 237; Norris et al. 1968: 852; Wood, S. L. 1982b: 816. (**ds**) Atkinson & Equihua 1985b: 237, 1986a: 421, 1988: 102; Blackwelder 1947: 780; Blandford 1898b: 196, 210; Bright 1985c: 174; Browne 1970: 542; Estrada & Atkinson 1988: 207; Ferrer 1942; Fleutiaux & Salle 1890: 457; Gemminger & Harold 1872: 2686; Hagedorn 1910d: 109; Kleine 1913b: 162, 1914b: 337, 340, 354, 371–372; Nunberg 1971: 58; Pedrosa-Macedo & Schonherr 1985: 35; Sampson 1921: 28; Schedl 1966f: 77, 1967d: 3, 1972g: 45, 1973d: 159, 1978c: 292; Wood, S. L. 1961c: 2, 1982b: 816. (**tx**) Blandford 1898b: 196, 210; Bright 1985c: 174; Eichhoff

1869b: 281, 1878b: 353; Hagedorn 1905a: 412, 1910a: 155; Nunberg 1959a: 434; Pedrosa-Macedo & Schonherr 1985: 35; Sampson 1921: 28; Schedl 1940a: 361, 1940c: 208, 1952h: 71, 1961a: 530, 1962p: 207; Wood, S. L. 1961c: 2, 1982b: 816.

novateutonicus Schedl 1954b: 47. Lectotype ♀; Brasilien: Parana, Rondon; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 172. Synonymy: Schedl 1962p: 207.
References: (**ds**) Schedl 1960a: 77. (**tx**) de Ruette 1970: 115; Schedl 1954b: 47, 1962p: 207, 1979c: 172.

***pourriensis* Schedl** 1950h: 110. Lectotype ♀; Madagascar, Behara; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 198.
Distribution: Madagascar.
Hosts: *Alluaudia pourri*.
References: (**tx**) Schedl 1950h: 110, 1977b: 167, 1979c: 198.

***praestans* Wood** 1980b: 358. Holotype ♂; Cerro Punta, Chiriqui, Panama, 6000–8000 ft.; Wood Collection.
Distribution: North America (Panama).
References: (**ds**) Wood, S. L. 1982b: 822. (**tx**) Wood, S. L. 1980b: 358, 1982b: 822.

***praevius* Blandford** 1894d: 110. Holotype ♀; Japan; BMNH.
Distribution: Asia (Japan/ Korea).
Hosts: *Acer palmatum*, *Daphniphyllum macropodum*, *Morus* spp., *Prunus* sp.
References: (**ds**) Blandford 1894c: 579; Cho 1957, 1963; Choo 1983: 108; Choo & Woo 1985: 166; Hagedorn 1910d: 109; Kleine 1913b: 162, 1914b: 260, 1934a: 175; Ko 1969: 285; Murayama 1929b: 2, 1930b: 20, 1931a: 46, 1954b: 181; Shiraki 1952. (**tx**) Blandford 1894d: 110; Choo 1983: 108; Hagedorn 1904d, 1910a: 155; Murayama 1930b: 20–24, 31, 1931a: 41, 46, 1954b: 181; Niisima 1910a: 14; Schedl 1934f: 1646, 1959a: 499.

***princeps* Blandford** 1898b: 208. Lectotype ♀; Volcan Chiriqui, Chiriqui, Panama; BMNH, London, designated by Wood 1982b: 812.
Distribution: North America (Costa Rica/ Nicaragua/ Panama), South America (Colombia/ Ecuador).
References: (**ds**) Blackwelder 1947: 780; Hagedorn 1910d: 109; Kleine 1913b: 162, 1914b: 371; Wood, S. L. 1961c: 2, 1982b: 812. (**tx**) Blandford 1898b: 208; Eggers 1931c: 20, 1933g: 20; Hagedorn 1910a: 155; Wood, S. L. 1961c: 2, 1982b: 812.

spathipennis ohausi Hagedorn 1912a: 345. Syntypes ♀; Pucay, Ecuador; Hamburg Museum, lost. Synonymy: Eggers 1933g: 20.
References: (**tx**) Eggers 1928c: 95, 1929e: 52, 1931c: 20, 1933g: 20; Hagedorn 1912a: 345–346.

***principalis* Eichhoff** 1878b: 357. Holotype ♀; Guineensi Africana; Stettin Museum, in Schedl Collection in NHMW, Wien.
Figures: Nunberg 1963b:pl. 23, figs. 3–5, 1967a: 338.
Distribution: Africa (Equatorial Guinea/ Guinea/ Tanzania/ Zaire), Madagascar.
Hosts: Many listed by Schedl 1962j: 260–263.
Notes: (3) Schedl 1957d: 15 (described male).
References: (**ec**) Schedl 1962j: 259. (**hb**) Schedl 1962j: 259. (**ds**) Hagedorn 1910d: 109; Kleine 1913b: 162, 1914b: 308, 315, 1934a: 175; Mayne & Donis 1962: 322; Nunberg 1961a: 331, 1967b: 324; Schedl 1962j: 259, 1962k: 1102, 1971e: 4; Wichmann 1954c: 522. (**tx**) Eggers 1920: 40, 1929e: 49, 1941d: 179; Eichhoff 1878b: 357; Hagedorn 1905: 413, 1910a: 155; Nunberg 1963b: 47, pl. 23, 1967b: 324, 338; Schaufuss 1897a: 212; Schedl 1950c: 205, 1950d: 3, 8, 1952e: 211, 1952g: 52–53, 1952i: 7, 1952j: 3, 1953g: 243, 1955d: 269, 1957d: 15, 1962j: 259, 1962k: 1102, 1979c: 199.

° ***priscus* Eggers** 1920: 44. Holotype ♀; fossil in Sansibarcopal, Zanzibar; Hamburg Museum, lost.
Distribution: Africa (fossil in copal from Zanzibar in Tanzania).
Notes: (3) This is apparently also a living species.
References: (**ds**) Schedl 1962j: 233. (**tx**) Eggers 1920: 44–46; Schedl 1962j: 233.

***procer* Eichhoff** 1878b: 402. Holotype ♀; America meridionalis (Columbia); Hamburg Museum, lost.
Figures: Nunberg 1959a:pl. 26, figs. 5–6.
Distribution: North America (Guatemala), South America (Bolivia/ Brazil/ Cayenne/ Colombia/ Peru/ Suriname).
References: (**ds**) Beaver 1976a: 25; Blackwelder 1947: 780; Browne 1970: 542; Hagedorn 1903b: 546, 1910d: 109; Kleine 1913b, 1914b: 343; Schedl 1960a: 76, 1966f: 80, 1970d: 582, 1973d: 162, 1976a: 54; Steinhausen 1956: 48. (**tx**) Eggers 1931a: 21; Eichhoff 1878b: 402; Hagedorn 1903b: 546, 1910a: 156, 1910b; Nunberg 1959a: 435; Schedl 1948f: 361, 1952a: 461, 1952h: 70, 1958c: 2; Steinhausen 1956: 48.

***productus* Hagedorn** 1905a: 414. Lectotype ♀; Bas. Mahury, French Guiana; MNHN, Paris.
Distribution: North America (Costa Rica/ Panama), South America (Cayenne).
Hosts: *Rhizophora mangle*.
References: (**hb**) Wood, S. L. 1982b: 825. (**ds**) Blackwelder 1947: 780; Hagedorn 1910d: 109; Kleine 1913b: 162, 1914b: 339; Wood, S. L. 1982b: 825. (**tx**) Hagedorn 1905a: 414, 1910a: 156; Schedl 1950g: 897, 1952d: 362; Wood, S. L. 1982b: 825.

***prolatus* Wood** 1974a: 41. Holotype ♀; Tapanti, Cartago, Costa Rica, 1300 m; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: *Phoebe mexicana*.
References: (**hb**) Wood, S. L. 1982b: 824. (**ds**)

Wood, S. L. 1982b: 824. (**tx**) Wood, S. L. 1974a: 41, 1982b: 824.

***prolixus* Schedl** 1962j: 307. Holotype ♀; Uganda; Schedl Collection in NHMW, Wien.
Distribution: Africa (Uganda).
References: (**tx**) Schedl 1962j: 307, 1979c: 199.

***protii* Browne** 1984d: 101. Holotype ♀; New Guinea: Stony L. A.; BMNH, London.
Distribution: New Guinea.
Hosts: *Protium* sp.
References: (**tx**) Browne 1984d: 101.

***pruinosulus* Browne** *in* Beaver & Brown 1978: 611. Holotype ♀; Malaysia: Penang, Penang Hill, 500 m; BMNH, London.
Figures: Beaver & Browne 1978: 604
Distribution: Asia (Malaya).
References: (**tx**) Beaver & Browne 1978: 604; Browne *in* Beaver & Browne 1978: 611.

***pseudoambasius* Schedl** 1954e: 82. Lectotype ♀; Bekwai, Gold Coast; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 200.
Distribution: Africa (Ghana/ Ivory Coast).
Hosts: *Antiaris africana*, *Celtis* spp., *Triplochiton scleroxylon*.
References: (**ds**) Schedl 1962h: 60, 1962j: 403, 1962k: 1102, 1964e: 69, 1971e: 3; Thompson, G. H. 1963: 72. (**tx**) Schedl 1954e: 54, 82, 1962h: 60, 1962j: 403, 1962k: 1102, 1964e: 69, 1964k: 220, 1971e: 3, 1979c: 200; Thompson, G. H. 1963: 72.
bobiriae Schedl 1957e: 881. Holotype ♀; Gold Coast, Bobiri Forest Reserve; BMNH, London. Synonymy: Schedl 1964k: 220.
References: (**ds**) Schedl 1962j: 255. (**tx**) Schedl 1957e: 881, 1962j: 255, 1964k: 220, 1979c: 42.

***pseudocylindricus* Eggers** 1927b: 402. Holotype ♀; Sudsumatra; USNM, Washington.
Distribution: Asia (Malaya), Indonesia (Borneo, Sumatra).
Hosts: *Artocarpus* spp., *Shorea* spp.
Notes: (3) Schedl 1960h: 110 (cited *artecylindricus* as a synonym).
References: (**hb**) Browne 1961: 156–157; Kalshoven 1959c: 158. (**ds**) Browne 1961c: 156, 1981a: 125; Kalshoven 1959c: 158; Schedl 1971c: 365. (**tx**) Anderson, W. H. & Anderson 1971: 26; Eggers 1927b: 402; Nobuchi 1983: 303; Schedl 1958b: 101, 1960h: 110.

***pseudomajor* Schedl** 1951i: 93. Holotype ♀; Kolambugan, Mindanao, Philippine Islands; Schedl Collection in NHMW, Wien.
Figures: Nobuchi 1978a:pl. 3.
Distribution: Philippine Islands (Mindanao).
References: (**ds**) Choo & Woo 1983; Nobuchi 1978a: 30; Ohno, Yoneyama, & Nakagawa 1987a: 88; Schedl 1966b: 66, 1969a: 205. (**tx**) Nobuchi 1978a:pl. 3; Schedl 1935f: 270–271, 1951i: 93, 1979c: 201.

***pseudopilifer* Schedl** 1936d: 11. Lectotype ♀; Malay Peninsula, Selangor: Kepont, Kanching, Batu Arang, Gangi, Kuala Lumpur, Pahang, Mentakab, Temerloh, and N. Borneo: Bettotan, near Sandakan; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 201.
Figures: Nobuchi 1978a:pl. 3.
Distribution: Asia (Malaya/ Vietnam), Indonesia (Borneo).
Hosts: *Dipterocarpus baudii*, *Dryobalanops aromatica*, *Gmelina arborea*, *Hopea ferrea*, *Shorea* spp., *Vatica* sp.
References: (**cn**) Browne 1950a, 1951; Mathur & Singh 1960b: 17, 1961a: 36; Yunus & Hua 1980: 230. (**ec**) Browne 1958b. (**hb**) Beaver & Browne 1978: 611; Browne 1935a, 1941a, 1958b, 1961c: 106; Kalshoven 1959c: 143. (**ds**) Beaver & Browne 1978: 611; Beeson 1961: 308; Browne 1935a, 1936a: 120–127, 1949b, 1950a: 167–168, 1961a: 305, 1968a: 133–134, 1986b: 333; Choo & Woo 1983; Kalshoven 1959c: 143; Mathur & Singh 1960b: 17, 1961: 36; Nobuchi 1978a: 28; Ohno, Yoneyama, & Nakazawa 1982b: 9, 1987a: 88; Schedl 1964c: 305, 1971c: 365; Yunus & Hua 1980: 230. (**tx**) Browne 1949b: 905; Nobuchi 1978a:pl. 3; Schedl 1936d: 11, 1939e: 330, 1942a: 171, 1951i: 92, 1953c: 301, 1979c: 201.

***pseudorudis* Schedl** 1951i: 62. Holotype ♀; Java, Batoerraden, G. Slamet; Schedl Collection in NHMW, Wien.
Distribution: Indonesia (Java).
References: (**ds**) Schedl 1961c: 70. (**tx**) Schedl 1951i: 62, 1979c: 202.

***pubescens* Zimmermann** 1868: 145. Lectotype ♀; southern States [USA]; MCZ, Cambridge, designated by Wood 1973c: 187.
Figures: Bright 1976d: 13, Dillon & Dillon 1961: 813.
Distribution: Antilles Islands (Andros Island in Bahamas Islands), North America (Ontario in Canada/ Alabama, Arkansas, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, New Jersey, New York, North Carolina, Pennsylvania, South Carolina, Texas, Virginia, West Virginia in USA).
Hosts: *Pinus echinata*, *P. palustris*, *P.* spp.
Notes: (1) Eichhoff (1868a: 401) listed this species that was misidentified as "*Xyleborus pini* Say ??"; subsequent writers followed Eichhoff's example, but the name *pini* Eichhoff was never validated [Say's species is now *Ips pini*]. Schedl 1952k: 163–164 confirmed the synonymy but continued to use the Eichhoff nomen nudum; Schedl 1979c: 195 reported the [invalid] "holotype" as in his collection.
References: (**ay**) Hopkins 1894g: 279. (**bv**) Atkinson, Foltz, & Connor 1988; Meixner 1937: 1218; Phillips et al. 1988; Turnbow & Franklin 1980. (**cn**) Anonymous 1968i; Blandford 1898c: 4; Felt

1906: 396, 702, 720; Hart 1892a, 1893; Herrick 1935: 375; Hopkins 1894b: 296, 1895c: 148, 1897b: 133–135, 1899c: 445; Howard 1897: 85; Hubbard 1897b: 19; Kleine 1932a: 307; Packard 1890: 710–711; Riley 1892a: 402; Riley & Howard 1890: 167; Rutherford 1914b: 222; Smith, J. B. 1900: 363; Swaine 1918a: 126, 128; Titus & Pratt 1904: 57. (**ec**) Felt 1906: 396; Rumbold 1931c: 849; Steinhaus 1946: 404; Webb 1945: 64. (**hb**) Atkinson, Foltz, & Connor 1988; Beal & Massey 1945: 156–157; Chamberlin 1939: 452; Chittenden 1890; Deyrup & Atkinson 1987a: 65; Dillon & Dillon 1961: 814; Dyakowski 1911; Felt 1906: 396; Herrick 1935: 375; Hopkins 1894g, 1899c: 445, 1905c: 148; Hubbard 1897a: 427, 1897b: 19; Kleine 1932a: 307; Lengerken 1954: 312; Packard 1890: 710; Pierce, W. D. 1907: 291; Schwarz 1878: 468, 1888a: 80, 1890b: 87, 1891e: 78, 1894a: 16; Smith, E. F. 1896: 318; Swaine 1918a: 126, 128; Wenzel 1905: 124; Wood, S. L. 1982b: 838. (**ds**) Anonymous 1926c: 520, 1968i; Atkinson et al. 1991: 160; Beal & Massey 1945: 156–157; Bright 1976d: 138; Chamberlin 1939: 452; Chittenden 1890; Deyrup & Atkinson 1987a: 65; Drooz 1985: 374; Gemminger & Harold 1872: 2686; Hagedorn 1910d: 109; Hamilton 1895: 346, 378; Henshaw 1885: 148; Hopkins 1893a: 137, 1893b: 211; Kleine 1913b: 162, 1914b: 395, 1932a: 307, 1934a: 175; Leng 1920: 342; Leonard 1928: 520; Schwarz 1878d: 468, 1886: 41, 1888a: 80, 1890: 87, 1891e: 78; Smith, J. B. 1900: 363, 1910: 402; Swaine 1909: 155; Turnbow & Franklin 1980; Wood, S. L. 1982b: 838. (**tx**) Beal & Massey 1945: 156–157; Blandford 1898e: 4; Bright 1976d: 133, 138; Chamberlin 1939: 452; Dillon & Dillon 1961: 801, 813–814; Eichhoff 1868a: 401, 1878b: 369–371, 1896: 609; Hagedorn 1910a: 156; Hubbard 1897b: 19–20; LeConte 1868: 160, 1876: 359–360, 1878a: 468; Meixner 1937: 1218; Schedl 1952k: 163–164; Schwarz 1886: 41–42, 1888a: 45; Swaine 1909: 155–156, 1918a: 126, 128; Wood, S. L. 1973c: 187, 1982b: 838; Zimmermann 1868: 145.

propinquus Eichhoff 1869b: 281. Lectotype ♀; Amerique boreali; IRSNB, Brussels, designated by Wood 1973c: 187. Synonymy: Wood 1973c: 187.
References: (**cn**) Hubbard 1897b: 20. (**hb**) Hubbard 1897b: 20. (**ds**) Blackwelder 1947: 780; Blandford 1898b: 196; Ferrer 1942; Gemminger & Harold 1872: 2686; Hagedorn 1910d: 109; Henshaw 1885: 148; Kleine 1913b: 162, 1914b: 354, 374; Leng 1920: 342; Swaine 1909: 155. (**tx**) Blandford 1898b: 196, 213–214; Eichhoff 1869b: 281, 1878b: 367; Hagedorn 1910a: 156; Hubbard 1897b: 20; Schedl 1940a: 363, 1952k: 164, 1963j: 481; Swaine 1909: 155; Wood, S. L. 1973c: 187.

***pumilus* Eggers** 1923a: 209. Lectotype ♀; Sumatra; USNM, Washington, designated by Anderson & Anderson 1971: 26.
Figures: Nobuchi 1978a:pl. 1.
Distribution: Asia (Burma/ Xizang [Tibet] in China/ Andaman Islands, Assam in India/ Malaya/ Sri Lanka/ Vietnam), Indonesia (Borneo, Java, Sumatra), New Guinea, Philippine Islands, Solomon Islands.
Hosts: *Artocarpus chaplasha*, *A. lakoocha*, *Ficus infectoria*, *Hymenodictyon excelsum*, *Shorea maxwelliana*, *Sterculia companulata*, *S. villosa*, *Terminalia* spp.
References: (**cn**) Mathur & Singh 1960b: 61, 1961a: 69, 1961b: 28; Roonwal 1954: 85. (**hb**) Beaver & Browne 1978: 612; Browne 1941, 1961c: 147. (**ds**) Beaver & Browne 1978: 612; Beeson 1941: 405–407, 1961: 308; Browne 1961c: 147, 1962c: 202, 1985b: 290; Kalshoven 1959: 152; Kleine 1934a: 175; Mathur & Singh 1960b: 61, 1961a: 69, 1961b: 28; Nobuchi 1978a: 18, 1980a; Ohno, Yoneyama, & Nakazawa 1987b: 94; Ohno, Yoshioka, et al. 1988a: 94, 1989: 63; Roonwal 1954: 85; Schedl 1959a: 509, 1962b: 186, 1966b: 67, 1969e: 156, 1971a: 281, 1971c: 365. (**tx**) Anderson, W. H. & Anderson 1971: 26; Beeson 1930: 252; Eggers 1923a: 207, 1925: 153, 1927b: 407, 1940d: 151; Nobuchi 1978a:pl. 1, 1983: 303; Nunberg 1962: 620; Schedl 1931c: 342, 1934d: 89–90, 1939e: 332, 1951i: 45, 1959a: 509; Wood, S. L. 1969c: 120.

***punctulatus* Kurenzov** 1948a: 52. Holotype ♀; Russian Far East, Ussuri Distr.; Kurenzov Collection in Vladivostok.
Distribution: Asia (E USSR).
Hosts: *Quercus mongolica*.
References: (**hb**) Kurenzov 1948a: 52; Stark 1952: 141. (**ds**) Krivolutskaya 1983; Stark 1952: 141. (**tx**) Kurenzov 1948a: 52; Schedl 1960h: 109; Stark 1952: 141.

***pusio* Eggers** 1941a: 105. Holotype ♀; Guadeloupe (Trois Rivieres); MNHN, Paris.
Distribution: Antilles Islands (Guadeloupe), South America (Suriname).
References: (**ds**) Bright 1985c: 174; Schedl 1963f: 60. (**tx**) Bright 1985c: 174; Eggers 1941a: 105; Schedl 1979c: 206.

***putputensis* Browne** 1986a: 97. Holotype ♀; New Britain: Putput to Kishiwada (Japan), imported; BMNH, London.
Distribution: New Britain Island.
References: (**tx**) Browne 1986a: 97.

***quadratus* Blandford** 1898b: 209. Lectotype ♀; Bugaba, Chiriqui, Panama; BMNH, London, designated by Wood 1982b: 817.
Distribution: North America (Panama).
References: (**ds**) Blackwelder 1947: 780; Hagedorn 1910d: 110; Kleine 1913b: 162; Wood, S. L. 1982b: 817. (**tx**) Blandford 1898b: 209; Hagedorn

1910a: 156; Schedl 1940a: 367; Wood, S. L. 1982b: 817.

***quadrisignatus* Schedl** 1972m: 200. Holotype ♀; Borneo; BMNH, London.
Distribution: Indonesia (Borneo).
References: (**tx**) Schedl 1972m: 200.

***quadrispinosulus* Eggers** 1923a: 189. Holotype ♀; Sumatra (Ajer Mantcior); MCG, Genova.
Distribution: Asia (Burma/ India), Indonesia (Java, Sumatra), New Guinea.
Hosts: *Eupatorium tapos*, *Swietenia macrophylla*, *Theobroma cacao*.
References: (**cn**) Mathur & Singh 1961a: 79. (**ec**) Kalshoven 1960b. (**hb**) Browne 1935a, 1941, 1961c: 114; Kalshoven 1959c: 151, 1960a: 120. (**ds**) Beeson 1961: 308; Browne 1935a; Kalshoven 1959c: 151; Mathur & Singh 1961a: 79; Schedl 1936d: 4; Thomas 1960a, 1960b. (**tx**) Eggers 1923a: 189, 1925: 153; Schedl 1933e: 101, 1936h: 64, 1939f: 43, 1942a: 171, 1942d: 5, 1958k: 147–148.

parvispinosus palembangensis Schedl 1939f: 43. Lectotype ♀; Pelembang, Sumatra; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 186. Synonymy: Schedl 1958k: 147.
References: (**tx**) Schedl 1939f: 43, 1951i: 79, 1958k: 147–148, 1979c: 186.

parvispinosus Schedl 1951i: 78. Syntypes ♀; Java: Mt. Gede; Schedl Collection in NHMW, Wien. Synonymy: Schedl 1958k: 147.
References: (**tx**) Schedl 1951i: 78, 1958k: 147, 1979c: 186.

***quasimodo* Browne** 1980e: 776. Holotype ♀; Malawi: Chinteche; MRCB, Tervuren.
Distribution: Africa (Malawi).
References: (**tx**) Browne 1980e: 776.

***quercicola* Eggers** 1926b: 146. Lectotype ♀; Tokyo, Japan; USNM, Washington, designated by Anderson & Anderson 1971: 28.
Distribution: Asia (Japan).
Hosts: *Quercus* sp.
References: (**ds**) Murayama 1954b: 181. (**tx**) Anderson, W. H. & Anderson 1971: 28; Eggers 1926b: 146; Murayama 1954b: 181; Schedl 1934f: 1646.

***rapandus* Schedl** 1942c: 186. Holotype ♀; Neu-Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1942c: 186, 1979c: 210.

***repositus* Schedl** 1942a: 197. Holotype ♀; Malaya, Kedah near Jitra, Catchment Area; BMNH, London.
Distribution: Asia (Malaya).
References: (**ds**) Browne 1961: 145. (**tx**) Schedl 1942a: 197.

° ***resinosus* Schedl** 1939a: 469. Syntypes ♀; Copal from Ethiopian Area; Geological Department, BMNH, London.
Distribution: Africa (copal fossil from Ethiopia).
Notes: (3) This is also a living species.
References: (**ds**) Schedl 1962j: 264; Spahr 1981. (**tx**) Schedl 1939a: 469–470, 1962j: 264.

***reunionis* Schedl** 1961e: 147. Holotype ♀; La Reunion, Madagascar; IRSM, Madagascar.
Distribution: Madagascar
References: (**tx**) Schedl 1961e: 147, 1977b: 162, 1979c: 211.

***rimulosus* Schedl** 1959a: 508. Holotype ♀; Ceylon: Millawitiya Estate; Schedl Collection in NHMW, Wien.
Distribution: Asia (Sri Lanka).
References: (**tx**) Schedl 1959a: 508, 1979c: 211.

***robustipennis* Schedl** 1954c: 159. Lectotype ♀; Borneo; Schedl Collection in NHMW, Wien.
Distribution: Indonesia (Borneo).
References: (**ds**) Browne 1965a: 189; Schedl 1965g: 24. (**tx**) Schedl 1954c: 156, 159, 1979c: 212.

***rothkirchi* Eggers** 1920: 45. Lectotype ♀; Soppo, Kamerun, 800 m; USNM, Washington.
Distribution: Africa (Cameroon/ Ivory Coast/ Uganda/ Zaire/ Zambia).
Hosts: *Berlinia acuminata*, *Macrolobium macrophyllum*, *Ochthocosmus africanus*, *Pancovea laurentii*, *Pentaclethra macrophylla*, *Staudtia stipitata*, *Terminalia ivorensis*.
References: (**hb**) Loyttyniemi, Beaver, & Loyttyniemi 1984; Schedl 1962j: 234. (**ds**) Beaver & Loyttyniemi 1985a: 75; Cachan 1957: 15; Schedl 1961d: 175–179, 1961m: 84, 1962h: 60, 1962j: 234, 1962k: 1102, 1964e: 69, 1979b: 416. (**tx**) Anderson, W. H. & Anderson 1971: 28; Eggers 1920: 45; Schedl 1951e: 38, 1954d: 872, 1957d: 88.

***rotundicollis* Browne** 1984f: 73. Holotype ♀; New Guinea: Morobe District, Mount Kaindi, 2350 m; BMNH, London.
Distribution: New Guinea.
References: (**tx**) Browne 1984f: 73.

***ruandae* Schedl** 1957d: 92. Holotype ♀; Congo Belge: Kivu, Mt. Kahuzi et Ruanda: Gishwati; MRCB, Tervuren.
Figures: Nunberg 1963b:pl. 24, figs. 7–9, pl. 25, figs. 1–4, Schedl 1962j: 299, 308.
Distribution: Africa (Ruanda/ Zaire).
Hosts: *Alchornea cordifolia*, *Bridelia brideliifolia*, *Hagenia abyssinica*, *Maesa* sp.
References: (**hb**) Schedl 1962j: 307. (**ds**) Schedl 1962j: 307. (**tx**) Nunberg 1963b: 49, pl. 24– 25; Schedl 1957d: 92, 1962j: 299, 307–308, 1979c: 214.

***rufipes* Eggers** 1933b: 31. Holotype ♀; Columbia; USNM, Washington.
Distribution: South America (Cayenne/ Colombia).
References: (**ds**) Blackwelder 1947: 780. (**tx**) Anderson, W. H. & Anderson 1971: 28; Eggers 1933b: 3, 31–32, 1941a: 103.

***rufobrunneus* Eggers** 1929e: 49. Syntypes 2 ♀: Philippinen: San Teodoro, Mindoro und Mt. Maquiling, Luzon; Eggers Collection (USNM, Washington, or NHMW, Wien?) and Baker Collection, automatic.
Distribution: Asia (Assam in India), Philippine Islands (Luzon, Mindoro).
Hosts: *Artocarpus lakoocha*, *Phoebe lanceolata*.
References: (**ds**) Schedl 1966b: 68. (**tx**) Eggers 1929e: 49, 1930d: 189, 1933b: 3; Nobuchi 1983: 303.

similis Eggers 1927c: 101. Syntypes 2 ♀; Philippinen: San Teodoro, Mindoro und Mt. Maquiling, Luzon; Eggers Collection (USNM, Washington, or NHMW, Wien?) and Baker Collection, preoccupied by Ferrari 1867.
References: (**tx**) Beeson 1929: 234–235; Eggers 1927c: 101, 1929e: 49.

rufobrunneus dihingensis Eggers 1930d: 189. Holotype ♀; India: Assam (Upper Dihing Reserve, Lakhimpur); FRI, Dehra Dun.
References: (**ds**) Beeson 1961: 304. (**tx**) Eggers 1930d: 189.

***rufus* Schedl** 1951i: 74. Lectotype ♀; Philippinen, Luzon, Benguet; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 215.
Distribution: Philippine Islands (Luzon).
Hosts: *Quercus jordanae*.
References: (**ds**) Schedl 1966b: 68. (**tx**) Eggers 1930d: 180; Nobuchi 1983: 303; Schedl 1951i: 74, 1979c: 215.

***rugatus* Blackburn** 1885: 192. Holotype ♀; Hawaii: Oahu; BMNH, London.
Figures: Samuelson 1981: 56.
Distribution: Hawaiian Islands (Kauai, Oahu).
Hosts: *Aleurites moluccana*, *Cordyline terminalis*, *Pleomele aurea*.
References: (**ds**) Beeson 1938b: 192; Hagedorn 1910d: 110; Kleine 1913b: 162, 1914b: 302; Samuelson 1981: 85. (**tx**) Blackburn 1885: 192; Hagedorn 1910a: 156; Perkins 1900: 178; Samuelson 1981: 56, 85; Sharp 1892: 192.

nuuanus Schedl 1941f: 114. Lectotype ♀; Oahu: Nuuanu; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 173. Synonymy: Samuelson 1981: 84.
References: (**ds**) Swezey 1941: 122. (**tx**) Samuelson 1981: 84; Schedl 1941f: 114, 1979c: 173.

***rugosipennis* Schedl** 1963f: 61. Holotype ♀; Suriname, Maripaheuvel and Dirkshoop; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil/ Suriname).
Hosts: *Baubinia* sp., *Liriosma singularis*, *Marcgravia* sp., *Plathymenia reticulata*.
References: (**hb**) Beaver 1976a: 25. (**ds**) Beaver 1976a: 25; Schedl 1978c: 291. (**tx**) Schedl 1963f: 61, 1979c: 216.

rugosipennis incertus Schedl 1963f: 63. Syntypes ♀; Suriname, Dirkshoop, Maripaheuvel, and Poeroe Man Kemisa; Schedl Collection in NHMW, Wien.
Notes: (3) This is apparently an aberration, not a geographical race.
References: (**ds**) Schedl 1963f: 63, 1973d: 159.

***sakalava* Schedl** 1953d: 97. Lectotype ♀; Madagascar, Mt. d'Ambre; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 218.
Distribution: Madagascar.
Hosts: *Dalbergia pterocarpifolia*, *Dombeya* sp., *Eucalyptus robusta*, *Ficus soroceoides* var. *macrophlebia*, *Neodypsis baroni*, *Ocotea* cf. *racemosa*, *Panax* sp., *Pinus khasia*, *Ravensara* sp., *Symphonia* sp.
References: (**hb**) Schedl 1977b: 162. (**ds**) Schedl 1970d: 234, 1977b: 162. (**tx**) Schedl 1953d: 97, 1961e: 146, 1970d: 234, 1977b: 162, 1979c: 218.

***sartor* Schedl** 1961e: 156. Holotype ♀; Madagascar, Perinet; IRSM, Madagascar.
Distribution: Madagascar
Hosts: *Ocotea laens*.
References: (**tx**) Schedl 1961e: 156, 1977b: 211, 1979c: 219.

***satoi* Schedl** 1966g: 39. Holotype ♀; Keelung, Formosa to Tokyo (Japan), imported; PPST, Tokyo.
Figures: Nobuchi 1978a:pl. 4.
Distribution: Asia (Bhutan/ Taiwan).
Hosts: Camphor log.
References: (**ds**) Nobuchi 1967: 22, 1978a: 37; Schedl 1975c: 383. (**tx**) Nobuchi 1978a:pl. 4; Schedl 1966g: 39, 1979c: 219.

***sayi* (Hopkins)** 1915b: 68 (*Anisandrus*). Holotype ♀; Morgantown, West Virginia [USA]; USNM, Washington.
Figures: Bright 1976d: 132, 203, 212.
Distribution: North America (Ontario, Quebec in Canada/ Connecticut, District of Columbia, Illinois, Indiana, Kentucky, Maine, Maryland, Michigan, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia in USA).
Hosts: *Acer* spp., *Betula* spp., *Carya* sp., *Castanea* sp., *Cornus* sp., *Fagus sylvatica*, *Fraxinus* spp., *Juglans* spp., *Kalmia latifolia*, *Lindera benzoin*, *Liriodendron tulipifera*, *Nyssa* sp., *Sassafras albidum*, *Tilia* sp.
References: (**bv**) Kirkendall 1984: 241; Roling & Kearby 1975b; Turnbow & Franklin 1980. (**cn**) Anderson, R. L. & Hoffard 1978; Blackman 1950; Friend 1943: 207–315; Wallace 1943a: 288. (**ec**) Anderson, R. L. & Hoffard 1978; Hazen & Roeper 1980; Roeper & French 1981. (**hb**) Beal & Massey 1945: 151–152; Blackman 1950; Chamberlin 1939: 446; Deyrup & Atkinson 1987a: 65; Hazen & Roeper 1980; Wood, S. L. 1982b: 795. (**ds**) Baker, W. L. 1972: 271; Beal & Massey 1945: 151–152; Blackman 1950; Blatchley & Leng 1916: 624; Bright 1968b: 1306, 1976d: 134; Chamberlin 1939: 446; Deyrup 1981b: 7; Deyrup & Atkinson

1987a: 65; Drooz 1985: 374; Kleine 1934a: 177; Knull 1932: 67; Leng 1920: 342; Turnbow & Franklin 1980; Weber, B. C., & McPherson 1991: 54; Wood, S. L. 1957c: 403, 1982b: 795. (**tx**) Beal & Massey 1945: 151–152; Benoit 1985: 284; Blatchley & Leng 1916: 624; Bright 1968b: 1306, 1976d: 132, 134, 203, 212; Chamberlin 1939: 446; Hopkins 1915b: 67–69; Wood, S. L. 1957c: 403, 1982b: 795.

obesus minor Swaine 1910b: 164. Lectotype ♀; Ste. Anne de Bellevue, Montreal Island, Quebec, Canada; CNCI, Ottawa, designated by Bright 1967b: 680, preoccupied by Stebbing 1909. Synonymy: Wood 1957c: 403.

References: (**cn**) Doane et al. 1936; Friend 1943; Swaine 1918a: 125. (**hb**) Chamberlin 1939: 446; Doane et al. 1936; Drake 1921: 203–204; Swaine 1918a: 125. (**ds**) Anonymous 1926c: 520; Beaulne 1956; Beeson 1961: 307; Blatchley & Leng 1916: 624; Chamberlin 1939: 446; Kleine 1934a: 177; Leng 1920: 342; Leonard 1928: 520; Pechuman 1937: 14. (**tx**) Blatchley & Leng 1916: 624; Bright 1967b: 680; Chamberlin 1939: 446; Hopkins 1915b: 67–68; de Ruette 1970: 115; Schedl 1931c: 346, 1950g: 893; Swaine 1910b: 161–165, 1918a: 125; Wood, S. L. 1957c: 403.

neardus Schedl 1950g: 893. Lectotype ♀; Ste. Anne de Bellevue, Montreal Island, Quebec, Canada; CNCI, Ottawa, designated by Bright 1967b: 680, automatic. Synonymy: Wood 1957c: 403.

References: (**tx**) Bright 1967b: 680; Schedl 1950g: 893; Titus, Meikle, & Harrison 1985: 24; Wood, S. L. 1957c: 403.

***scaber* Schedl** 1948f: 273. Lectotype ♀; Brazil, Nova Teutonia; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 220.

Distribution: Antilles Islands (Jamaica), South America (Brazil).

References: (**cn**) Santoro 1966a. (**ds**) Bright 1985c: 174; Santoro 1957b: 26; Schedl 1966f: 90. (**tx**) Bright 1985c: 174; Schedl 1948f: 273, 1963d: 227, 1979c: 220.

jamaicensis Bright 1972d: 79. Holotype ♀; Hardwar Gap, 4000 feet, St. Andrew Parish, Jamaica; CNCI, Ottawa. Synonymy: Bright 1985c: 174.

References: (**tx**) Bright 1972d: 79, 95, 1985c: 174; McNamara 1977: 200.

***scabratus* Schedl** 1941f: 113. Lectotype ♂; Oahu: Pupukea; BPBM, Honolulu, designated by Samuelson 1981: 85.

Figures: Samuelson 1981: 60.

Distribution: Hawaiian Islands (Oahu).

Hosts: *Xylosoma hawaiiense*.

Notes: (1) Samuelson 1981: 85 (elevated this taxon to species rank from var. *oahuensis*; a lectoallotype was also designated).

References: (**ds**) Swezey 1941: 122. (**tx**) Samuelson 1981: 60; Schedl 1941f: 113, 1979c: 174.

***scabricollis* (Schedl)** 1975g: 220 (*Ozopemon*). Holotype ♀; Neu Guinea: Brown River, Central Distr.; Schedl Collection in NHMW, Wien.

Distribution: New Guinea.

Hosts: *Calamus* sp.

References: (**tx**) Schedl 1975g: 220, 1979c: 220.

***schildi* Schedl** 1935d: 94. Holotype ♀; Costa Rica, Turrialba; Schedl Collection in NHMW, Wien.

Distribution: North America (Costa Rica), South America (Colombia).

Hosts: *Rheedia madruno*.

References: (**ds**) Blackwelder 1947: 780; Schedl 1975h: 353; Wood, S. L. 1982b: 819. (**tx**) Schedl 1935d: 94, 1951m: 123, 1979c: 221; Wood, S. L. 1982b: 819.

***schoutedeni* Eggers** 1927a: 189. Holotype ♀; Belge Congo (Haut-Uele: Moto); MRCB, Tervuren.

Figures: Nunberg 1963b:pl. 27, figs. 1–2.

Distribution: Africa (Zaire).

References: (**tx**) Eggers 1927a: 189; Nunberg 1963b: 54, pl. 27; Schedl 1962j: 169.

***scobinatus* Hagedorn** 1910b: 8. Holotype ♀; Kamerun; MNB, Berlin.

Figures: Nunberg 1963b:pl. 26, figs. 4–7.

Distribution: Africa (Burundi/ Cameroon/ Equatorial Guinea/ Ghana/ Nigeria/ Uganda/ Zaire).

Hosts: *Acalypha neptunica*, *Bosqueia angolensis*, *Combretodendron africanum*, *Ficus exasperata*, *Garcinia polyantha*, *Khaya ivorensis*, *Lebrunia sushaie*, *Maba laurentii*, *Pentaclethra macrophylla*, *Polyalthia suavestens*, *Sapium ellipticum*, *Terminalia superba*. Schedl 1962j: 265 lists additional hosts.

References: (**ds**) Browne 1983a: 556; Hagedorn 1910d: 110; Kleine 1913b: 162; Mayne & Donis 1960: 104, 1962: 322; Roberts 1960b: 36, 1960e, 1960f, 1969: 133; Schedl 1962j: 264, 1964j: 42, 1971g: 193. (**tx**) Eggers 1940b: 108; Hagedorn 1910a: 156, 1910b: 8; Nunberg 1963b: 52, pl. 26; Schedl 1952i: 7, 1955f: 260, 1959q: 706, 1962j: 264.

***seiryorensis* Murayama** 1930b: 21. Holotype ♀; Seiryori (Korea); Murayama Collection in USNM, Washington.

Figures: Murayama 1930b:pl. 1, fig. 3.

Distribution: Asia (Japan/ Korea).

Hosts: *Alnus japonica*, *Quercus* spp., *Castanopsis cuspidata* var. *sieboldii*.

References: (**bv**) Choo, Woo, & Park 1988. (**cn**) Anonymous 1980g. (**ec**) Banno, Mikata, & Kodama 1983: 445; Tsuneda et al. 1986. (**hb**) Takahashi 1989: 403. (**ds**) Anonymous 1980g; Choo 1983: 110; Choo & Woo 1985: 166; Choo, Woo, & Park 1988; Kleine 1934a: 175; Ko 1969: 286; Murayama 1929b: 2, 1930b: 21, 1936a: 136, 1937b: 375, 1954b: 182; Nobuchi 1985c: 27. (**tx**) Choo 1983: 110; Murayama 1930b: 21–26, 1936a:

136, 1937b: 375, 1954b: 182, 1961b: 32; Schedl 1934f: 1646.

***semiermis* Schedl** 1934f: 89. Lectotype ♀; Java, Mt. Gede, 800 m; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 224.
Distribution: Indonesia (Java).
References: (**hb**) Kalshoven 1959c: 152. (**ds**) Kalshoven 1959c: 152. (**tx**) Schedl 1934f: 89–90, 1979c: 224.

***semipolitus* Schedl** 1951i: 70. Syntypes 4 ♀; Philippinen, Luzon, Prov. Isabella, Mount Moises, and Luzon, Benguet, Baguio; Schedl Collection in NHMW, Wien.
Distribution: Philippine Islands (Luzon).
Notes: (1) Schedl 1979c: 224 (citation of holotype invalid). [This is apparently a synonym of *Euwallacea xanthopus*, SLW.]
References: (**ds**) Schedl 1966b: 70. (**tx**) Nobuchi 1983: 303; Schedl 1951i: 70, 1979c: 224.

***semipunctatus* Eggers** 1933b: 30. Holotype ♀; Franz. Guayana: St. Laurent du Maroni, Nouveau Chantier; MNHN, Paris.
Distribution: North America (Costa Rica), South America (Cayenne/ Colombia/ Venezuela).
Hosts: *Alexa imperatricia*, *Jacaranda copaia*.
References: (**hb**) Wood, S. L. 1982b: 819. (**ds**) Blackwelder 1947: 780; Wood, S. L. 1982b: 819. (**tx**) Eggers 1933b: 30–31; Wood, S. L. 1982b: 819.

***semistriatus* Schedl** 1971c: 382. Holotype ♀; Selangor, Kepong, Malaya; BMNH, London.
Distribution: Asia (Malaya).
Hosts: *Shorea leprosula*.
References: (**tx**) Schedl 1971c: 382.

***separandus* Schedl** 1971c: 383. Holotype ♀; Sarawak, Kuching; BMNH, London.
Distribution: Indonesia (Sarawak in Borneo).
Hosts: *Passing* sp.
References: (**tx**) Schedl 1971c: 383, 1979c: 225.

***septentrionalis* Niisima** 1909: 162. Syntypes 3 ♀; Tayoroma, Prov. Teshio, Mittlejapan: Yoshino, Prov. Yamato, Japan; Nobuchi Collection, Ibaraki.
Distribution: Asia (Japan).
Hosts: *Picea glehnii*, *P. jezoensis*, *Pinus densiflora*.
References: (**ds**) Kleine 1914b: 261, 1934a: 175; Kono 1938b: 65; Murayama 1948: 2, 1949a: 13, 1951c: 5, 1954b: 204; Nobuchi 1966d: 31. (**tx**) Hagedorn 1910a: 156; Murayama 1954b: 204; Niisima 1909: 162, 1910a: 15; Nobuchi 1966d: 31; Schedl 1934f: 1646.

***seriatus* Blandford** 1894d: 111. Syntypes 2 ♀; Nikko and Miyanoshita, Japan; BMNH, London.
Figures: Nobuchi 1966d:pl. 5.
Distribution: Asia (Shanxi, Sichuan in China/ Japan/ Korea/ Taiwan).
Hosts: *Acer rufinerve*, *Aesculus turbinata*, *Alnus* spp., *Betula* spp., *Carpinus tschonoskii*, *Castanopsis* sp., *Chamaecyparis* spp., *Cleyera japonica*, *Cryptomeria japonica*, *Fagus crenata*, *Kalopanax septenlobus*, *Larix leptolepis*, *Mallotus japonicus*, *Pinus* spp., *Prunus* sp., *Quercus* spp., *Rhus ambigua*, *Schima* sp., *Thuja standishii*, *Tilia japonica*, *Tsuga* spp.
Notes: (3) A note in the Schedl Collection says that *daisetsuanus* Nobuchi is a synonym; this synonymy requires confirmation. Murayama 1955: 86 (described male).
References: (**ay**) Murayama & Kalshoven 1962. (**cn**) Inouye 1955; Inouye & Yamaguchi 1955a: 235; Murayama 1954a: 13; Nitto 1953: 302. (**ec**) Inouye & Yamaguchi 1955a, 1955b; Inouye et al. 1955: 108; Nishiguchi 1959: 271. (**hb**) Inouye et al. 1955: 108; Murayama & Kalshoven 1962. (**ds**) Blandford 1894c; Browne 1966: 251, 1981b: 597; Choo 1983: 110; Choo & Woo 1985: 166; Choo, Woo, & Park 1983: 175; Hagedorn 1910d: 110; Kleine 1913b: 162, 1914b: 261, 1934a: 175; Murayama 1954a: 13, 1955: 86, 100, 103; Nobuchi 1966d: 31, 1967: 23; Yin, Huang, & Li 1984: 162. (**tx**) Blandford 1894d: 111; Choo 1983: 110; Hagedorn 1910a: 156; Murayama 1934c: 300, 1955: 86, 100, 103; Murayama & Kalshoven 1962: 249; Niisima 1909: 158, 1910a: 14; Nobuchi 1966d: 31, pl. 5; Schedl 1934f: 1646, 1966g: 39; Yin, Huang, & Li 1984: 162.

***setulosus* Eggers** 1940d: 149. Holotype ♀; Java (Buitenzorg); Kalshoven Collection, Eggers cotype in NHMW, Wien.
Distribution: Indonesia (Java, Sumatra).
Hosts: *Hevea brasiliensis*, *Myristica fragrans*, *Pithecolobium lobatum*.
Notes: (1) Schedl 1979c: 227 designated the Eggers cotype as lectotype with no explanation; he apparently overlooked the existence of a holotype.
References: (**hb**) Kalshoven 1958a: 186. (**ds**) Kalshoven 1958a: 186, 1959c: 143. (**tx**) Eggers 1940d: 149–150; Kalshoven 1959b: 95, 1960d; Schedl 1961e: 145, 1979c: 227.
barbatogranosus Schedl 1942d: 37. Lectotype ♀; Sumatra, Solok; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 34. Synonymy: Kalshoven 1959b: 95.
References: (**tx**) Kalshoven 1959b: 95; Schedl 1942d: 37, 1979c: 34.

***sextuberculatus* Schedl** 1952a: 461. Holotype ♀; Argentine Republique, Chaco de Santiago del Estero, Rio Dulce; Eggers Collection, in NHMW, Wien.
Distribution: South America (Argentina).
References: (**tx**) Schedl 1952a: 461, 1979c: 227.

***shionomisakiensis* Murayama** 1951a: 3. Holotype ♀; Shionomisaki, Nishimuro County, Wakayama pref., Japan; Murayama Collection in USNM, Washington.
Figures: Murayama 1951a:pl. 1, figs. 14–16.
Distribution: Asia (Japan).
Hosts: *Castanea crenata*.
References: (**ds**) Murayama 1951a: 3, 1954b: 204;

Nobuchi 1985c: 28. (**tx**) Murayama 1951a: 13, 1954b: 204.

***shiva* Maiti & Saha** 1986: 140. Holotype ♀; 16 km Timber Extraction Centre, Little Andaman Island; Zoological Survey of India, Calcutta.
Distribution: Asia (Andaman Islands in India).
Hosts: *Pterocymbium tinctorum*.
References: (**tx**) Maiti & Saha 1986: 140.

***shoreae* (Stebbing)** 1909: 28 (*Tomicus*). Syntypes 3 ♀; India: Assam, Rajahtkhowa Sal area, Kachugaon Forests, Goalpara; FRI, Dehra Dun.
Figures: Kumar & Chandra 1977: 46 (male).
Distribution: Asia (Burma/ Assam, Bengal, Uttar Pradesh in India).
Hosts: *Amoora wallichii*, *Dipterocarpus pilosus*, *Echinocarpus dasycarpus*, *Ehretia acuminata*, *Lannea grandis*, *Phoebe lanceolata*, *Schima wallichii*, *Shorea* spp., *Syzygium cumini*, *Terminalia* spp., *Vatica lanceaefolia*.
Notes: (3) Kumar & Chandra 1977: 36 (described male).
References: (**cn**) Mathur & Singh 1960b: 59, 1961a: 28, 1961b: 26; Roonwal 1954: 66; Roonwal, Chatterjee, & Thapa 1961b: 7. (**hb**) Stebbing 1909b: 28. (**ds**) Beeson 1930: 258–289, 1961: 309; Browne 1980: 373, 1981a: 126, 1983a: 555; Kleine 1913b: 128, 1914b: 277; Mathur & Singh 1960b: 59, 1961a: 28, 1961b: 26; Roonwal 1954: 66; Roonwal, Chatterjee, & Thapa 1961b: 7. (**tx**) Beeson 1930: 258–259; Eggers 1934b: 27; Hagedorn 1910a: 106; Kumar & Chandra 1977: 36, 46; Schedl 1954c: 156; Stebbing 1907: 39, 1909b: 28, 1914: 582.

assamensis Stebbing 1909b: 29 (*Tomicus*). Holotype ♀; Goalpara, Kachugaon Sal Forest tracts, Assam, India; FRI, Dehra Dun. Synonymy: Beeson 1930: 259.
References: (**hb**) Stebbing 1909b: 29. (**ds**) Beeson 1930: 259. (**tx**) Beeson 1930: 259; Eggers 1934b: 27; Stebbing 1909b: 29.

***siclus* Schedl** 1936j: 26. Lectotype ♀; Malay Peninsula: Selangor, Sungai Buloh Forest Reserve; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 228.
Distribution: Asia (Malaya).
Hosts: *Dipterocarpus baudii*, *Dryobalanops oblongifolia*, *Shorea* spp.
Notes: (3) Schedl 1949b: 907 (described male).
References: (**cn**) Ishikura 1966; Yunus & Hua 1980: 230. (**hb**) Beaver & Browne 1978: 613; Browne 1936a, 1941, 1961c: 105. (**ds**) Beaver & Browne 1978b: 613; Beeson 1961: 309; Browne 1936a, 1961c: 105, 1980a: 371, 1983a: 555; Ishikura 1966; Ohno, Yoneyama, & Nakazawa 1982b: 9; Schedl 1936j: 26, 1949b: 907; Yunus & Hua 1980: 230. (**tx**) Schedl 1936j: 26, 1979c: 226.

***similis* Ferrari** 1867: 23. Holotype ♀; Insula Keelingo; NHMW, Wien, automatic.
Figures: Nobuchi 1978a:pl. 3, Nunberg 1959a:pl. 28, figs. 6–8, Samuelson 1981: 60, Schedl 1962j: 460, 1977b: 191, Wood 1960a: 66.
Distribution: Africa (Cameroon/ Kenya/ Mauritania/ Mauritius Island/ Seychelles Islands/ Tanzania), Asia (Bonin Islands/ Burma/ Guangdong in China/ Andaman Islands in India/ Jordan/ Malaya/ Nepal/ Sri Lanka/ Taiwan/ Thailand/ Tonkin Island in Vietnam, Vietnam), Admiralty Islands, Australia, Bismarck Islands, Christmas Island, Fiji Islands, Hawaiian Islands, Indonesia (Batoe, Borneo, Celebes, Java, Mentawei, Sumatra), Kiribati Islands, Madagascar, Micronesia (Caroline Islands, Guam, Kusaie, Marshall Islands, Palau Islands, Ponape, Truk), New Caledonia, New Guinea, Philippine Islands, Samoan Islands, Solomon Islands, Tahiti Islands.
Hosts: Many listed by Schedl 1962j: 467–471, 1979a: 159. *Alphitonia petriei*, *Elaenocarpus* sp., *Hevea brasiliensis*, *Shorea robusta*.
References: (**bv**) Gray, B. 1974c. (**cn**) Beaver 1988a: 66; Bigger 1982: 255; Browne 1938b, 1968: 717; Chatterjee et al. 1950; Kalshoven 1932: 246, 1939: 334, 1951: 851, 1954: 13; Gnanaharan, Sudheendrakumar, & Nair 1985; Hill, D. S. 1983: 545; Mahindapala & Subasinghe 1976; Mathur & Singh 1960a: 23, 1960b: 43, 1961a: 10, 1961b: 14; Miller, N. C. E. 1941: 10; Roonwal 1954: 36; Sivarami 1980: 58; Thomas, R. T. S. 1960a, 1960b; Wylie & Shanahan 1975; Yunus & Hua 1980: 230. (**ec**) Browne 1958b; Chatterjee & Chatterjee 1951; Halperin & Holzschuh 1984: 29; Mathew 1985. (**hb**) Beaver 1988a: 66, 1989a: 2, 4; Beaver & Browne 1978: 613; Beeson 1910: 221–223, 1923: 164; Browne 1936a: 124, 1941: 63, 1958b: 164–182, 1961c: 117–118, 1968: 717; Chatterjee & Chatterjee 1951; Chatterjee et al. 1950: 38; Fisher, Thompson, & Webb 1957: 7; Gray, B. 1974c; Halperin & Holzschuh 1984: 29; Hill, D. S. 1983: 545; Kalshoven 1932: 246–249, 1951: 851, 1954: 13, 1958a: 186–188, 1959a: 224, 1959c: 140, 1962a: 17, 19, 1964; Koningsberger & Zimmermann 1901: 1–125; Menzel 1923: 4; Miller, N. C. E. 1941; Schedl 1962j: 459; Speyer 1923: 19–21; Thomas 1960: 77; Wylie & Shanahan 1975. (**ds**) Alhuaud 1900: 21; Beaver 1988a: 66, 1989a: 2, 4, 1990b: 150; Beaver & Browne 1978: 613; Beeson 1929: 235, 247, 1933: 12, 1938b: 294, 1941: 402; 1961: 399; Bernard 1907: 50; Bhasin, Roonwal, & Singh 1958: 36, 73; Boheman 1853: 88; Brimblecombe 1953: 35; Browne 1936a, 1938: 83–84, 1948: 892, 1949b, 1961a: 305, 1965a: 189, 1966: 253, 1968: 717; Chatterjee & Chatterjee 1951; Chatterjee et al. 1950; Choo, Woo, & Kim 1981: 201; Frappa 1933: 179; Gemminger & Harold 1892: 2686; Hagedorn 1910d: 100; Halperin & Holzschuh 1984: 29; Hill, D. S. 1983: 545; Kalshoven 1932: 246, 1958a: 186, 1959c: 140, 1964: 140; Kleine 1928: 307–313; Kolbe 1911: 41; Mathew 1982, 1987: 189; Mathur & Singh 1960a: 23, 1960b: 43, 1961a: 10, 1961b: 14; Nobuchi 1967: 23, 1978a:

35; Nobuchi & Ono 1973: 182; Nonveiller 1984: 42; Ohno, Yoneyama & Nakazawa 1982a: 4, 1982b: 8, 1987a: 88, 1987b: 94; Ohno, Yoshioka, et. al. 1988a: 94, 1989: 63; Roonwal 1954: 36, 38, 53, 72; Samuelson 1981: 86; Schedl 1936d: 5, 1936g: 528–530, 1936j: 21, 1937e: 543, 1938g: 427, 1942a: 171, 1942b: 149, 1951k: 139, 1959a: 505, 1961c: 70–71, 1962b: 185, 187, 1962i: 72, 75, 1962j: 459, 1964c: 306, 1964f: 618, 1965a: 340, 1965g: 22, 25, 1966b: 70, 1966g: 32, 1968e: 263, 1969c: 54, 1969d: 8, 1969e: 156, 1971a: 279, 1971c: 367, 1971d: 434, 1971f: 149, 1972a: 144, 1972j: 225, 1972k: 296, 1973b: 211, 1973c: 379, 1974c: 262, 1975a: 452, 1975e: 452, 1975j: 294, 1975k: 278, 1977c: 394, 1979a: 159, 1980b: 184; Thomas, R. T. S. 1960a, 1960b; Wichmann 1954: 503, 518, 521; Wood, S. L. 1960a: 51; Yin, Huang, & Li 1984: 164; Yunus & Hua 1980: 230. (**tx**) Beeson 1929: 235, 247; Blandford 1895a: 322; Browne 1949b; Eggers 1922a: 88, 1925: 154, 1926a: 300, 1927b: 407, 1929e: 48–49, 1930d: 189, 1933g; Eichhoff 1878b: 385–393, 484; Ferrari 1867a: 23–24, 74, 91; Hagedorn 1910a: 151; Kalshoven 1959a: 224–226; Lacordaire 1866: 383; Nobuchi 1978a:pl. 3, 1983: 304; Nunberg 1959a: 438; Sampson 1914: 387–388, 1919: 110, 1921: 25; Samuelson 1981: 60; Schaufuss 1897a: 212–214; Schedl 1931c: 347, 1933e: 106, 1935j: 1, 1939e: 333, 1942a: 171, 1942b: 147, 1942c: 163, 1942d: 47, 1948g: 26, 1951i: 46, 50, 1952c: 62, 1953b: 124, 127, 1954a: 142–143, 1955b: 287, 1957d: 84, 1958b: 101, 1959a: 505, 1960h: 11, 1962j: 459–460, 1977b: 190–191, 1979c: 230; Strohmeyer 1911b: 17; Wood, S. L. 1960a: 51–52, 66; Yin, Huang, & Li 1984: 164.

ferrugineus Boheman 1859: 88 (*Bostrichus*). Syntypes ♀; Insula Keelingo; NHMW, Wien, preoccupied by Fabricius 1801. Synonymy: Schedl 1960h: 11.

References: (**tx**) Boheman 1859: 88; Eggers 1933b; Schedl 1960h: 11.

parvulus Eichhoff 1868: 152. Holotype ♀; Ceylon; Hamburg Museum, lost. Synonymy: Schedl 1959a: 505.

References: (**bv**) Beeson 1915: 8–11, 1917. (**cn**) Beeson 1938a; Betrem 1930b: 279; Kleine 1932a: 307; Lewton-Brain 1914: 1–45; Mathur & Singh 1961a: 8, 1961b: 14; Petch 1921: 233; Sharples 1918: 156; Stebbing 1914: 594; Swart 1917: 50; Yunus & Hua 1980: 230. (**ec**) Beeson 1923; Betrem 1930b: 379; Sharples 1918: 156, 1936: 384; Stebbing 1914: 594; Sweetman 1936: 39. (**hb**) Beeson 1916a, 1917, 1923, 1938a; Browne 1941, 1961c: 116–117; Kalshoven 1959c: 140; Kleine 1932a: 307; Sharples 1936: 384; Stebbing 1914: 594. (**ds**) Beeson 1916a: 221, 1923, 1938a: 294; Blandford 1895a; Gemminger & Harold 1872: 2686; Hagedorn 1910d: 108; Kalshoven 1959c: 140; Kleine 1913b: 162, 1914b: 274, 280, 1932a: 307; Mathur & Singh 1961a: 8, 1961b: 14; Nunberg & Chujo 1961: 358; Schedl 1936d: 4. (**tx**) Eggers 1925: 154, 1927a: 194, 1927b: 407, 1929e: 48; Eichhoff 1868c: 152, 1878b: 382; Hagedorn 1910a: 155; Schedl 1937e: 544, 1939e: 333, 1951k: 138, 1954a: 142, 1959a: 505, 1979c: 186; Stebbing 1914: 594.

dilatatus Eichhoff 1878b: 393. Syntypes ♀; Africae Insula St. Mauritzius; Hamburg Museum, lost. Synonymy: Schedl 1959a: 505.

References: (**cn**) Mathur & Singh 1960b: 43, 1961a: 13. (**ds**) Alluaud 1900: 440; Hagedorn 1910d: 101; Kleine 1913b: 160; Kolbe 1910: 41; Sampson 1914: 387; Schedl 1936d: 3, 1979c: 80. (**tx**) Eggers 1927b: 407; Eichhoff 1878b: 393; Hagedorn 1910a: 153; Sampson 1914: 387; Schaufuss 1897a: 212; Schedl 1931c: 346, 1936d: 3, 1937e: 543, 1959a: 505, 1962j: 459, 1979c: 80.

submarginatus Blandford 1896b: 223. Syntypes ♀; India, Belgaum, Ceylon, Celebes, New Guinea, Dorey; BMNH, London. Synonymy: Eggers 1929e: 48.

References: (**bv**) Beeson 1917. (**cn**) Beeson 1915: 8–11, 1916: 1–5; Garthwaite 1940: 94–106; Green 1916: 608–636; MacKenzie 1922: 1–14. (**hb**) Beeson 1916a: 221, 1917, 1929. (**ds**) Beeson 1916a, 1929, 1930: 260–261, 1933: 12, 1938: 294, 1961: 309; Kleine 1913b: 163, 1934a: 175; Murayama 1934: 289, 1936b: 115; Sampson 1919: 109–110. (**tx**) Beeson 1929: 247, 1930: 260–261; Blandford 1896b: 223; Eggers 1922a: 88, 1925: 154, 1926a: 300, 1927b: 407, 1929e: 48; Sampson 1919: 109–110; Schedl 1931c: 347, 1939f: 49, 1951k: 138, 1958b: 103, 1959a: 505, 1962j: 459.

bucco Schaufuss 1897a: 212. Syntypes ♀; Sechellen, La Digue; Hamburg Museum, lost. Synonymy: Schedl 1959a: 505.

References: (**ds**) Alluaud 1900: 440; Hagedorn 1910d: 99; Kleine 1913b: 160; Kolbe 1910: 41; Sampson 1914: 388. (**tx**) Anderson, W. H. & Anderson 1971: 8; Beeson 1929: 247; Hagedorn 1910a: 152; Sampson 1914: 388; Schaufuss 1897a: 212; Schedl 1959a: 505, 1962j: 459.

capito Schaufuss 1897a: 215. Syntypes ♀; Philippinen; those in Hamburg Museum lost, 1 in USNM, Washington, 1 in Schedl Collection in NHMW, Wien. Synonymy: Schedl 1959a: 505.

References: (**ds**) Beeson 1938: 294; Hagedorn 1910c: 99; Kleine 1913b: 160, 1914b: 290. (**tx**) Anderson, W. H. & Anderson 1971: 9; Eggers 1929c: 46; Hagedorn 1910a: 152; Schaufuss 1897a: 215; Schedl 1959a: 505, 1962j: 459; Strohmeyer 1911b: 17.

novaguineanus Schedl 1936g: 530. Holotype ♀; New Guinea; Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 177.

References: (**ds**) Schedl 1936g: 530, 1972b: 266,

1980b: 184. (**tx**) Schedl 1936g: 530, 1958i: 214, 1965g: 25, 1979c: 171.

dilatatulus Schedl 1953b: 127. Lectotype ♀; Saigon; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 80. Synonymy: Wood 1989: 177.

References: (**ds**) Gardner 1957a; Schedl 1962b: 185. (**tx**) Schedl 1953b: 127, 1955i: 212, 1979c: 80.

***simillimus* Perkins** 1900: 176. Lectotype ♀; Hawaii, above Hilo, 1800 ft.; BMNH, London.

Figures: Samuelson 1981: 60.

Distribution: Hawaiian Islands (Hawaii).

Hosts: *Metrosideros collina polymorpha*.

References: (**ds**) Beeson 1938b: 294; Hagedorn 1910d: 111; Kleine 1913b: 163, 1914b: 303; Samuelson 1981: 86. (**tx**) Hagedorn 1910a: 156; Perkins 1900: 176; Samuelson 1981: 60, 86.

***simulatus* Bright** 1972d: 80. Holotype ♀; Hardwar Gap, St. Andrew Parish, Jamaica, 4000′; CNCI, Ottawa.

Figures: Bright 1972d: 95.

Distribution: Antilles Islands (Jamaica/ Puerto Rico).

References: (**ds**) Bright 1981c: 157, 1985c: 174. (**tx**) Bright 1972d: 80, 95, 1985c: 174; McNamara 1977: 200.

***sinensis* Eggers** 1941b: 224. Holotype ♀; China: Fukien Prov. (Kuatun, 2300 m); Alexander Konig Museum, Bonn.

Distribution: Asia (Fujian in China).

References: (**tx**) Eggers 1941b: 224–225; Schedl 1955h: 45.

***solutus* Schedl** 1962j: 516. Holotype ♀; Congo Belge: Yangambi; Schedl Collection in NHMW, Wien.

Distribution: Africa (Zaire).

Hosts: *Sorindeia lemairei*, *Vernonia conferta*.

References: (**tx**) Schedl 1962j: 516, 1979c: 232.

***sparsipilosus* Eggers** 1933b: 34. Holotype ♀; Franz. Guayana (Nouveau Chantier); MNHN, Paris.

Distribution: North America (Costa Rica/ Panama), South America (Cayenne/ Colombia).

Hosts: *Ficus* sp., *Virola warburgii*, etc.

References: (**ds**) Blackwelder 1947: 780; Wood, S. L. 1982b: 824. (**tx**) Eggers 1933b: 34; Schedl 1979c: 232; Wood, S. L. 1972e: 199, 1982b: 824.

inconveniens Schedl 1948h: 577. Holotype ♀; Costa Rica, Hamburgfarm, Ebene Limon, Reventazon; Schedl Collection in NHMW, Wien. Synonymy: Wood 1972e: 199.

References: (**tx**) Schedl 1948h: 577, 1979c: 123; Wood, S. L. 1972e: 199.

***spathipennis* Eichhoff** 1868: 145. Syntypes ♀; Peru, Brazil; Hamburg Museum, lost.

Figures: Nunberg 1959a:pl. 18, fig. 7, pl. 20, figs. 4–6.

Distribution: North America (Costa Rica/ Guatemala/ Nicaragua/ Panama), South America (Bolivia/ Brazil/ Cayenne/ Colombia/ Ecuador/ Guyana/ Peru/ Suriname/ Venezuela).

Hosts: *Bursera simarubra*, *Copaifera* sp., *Cratylia floribunda*, palm log.

References: (**cn**) Hagedorn 1913a; Herfs 1950: 3; Kleine 1932a: 307. (**ec**) Neger 1911a: 52. (**hb**) Beaver 1976a: 26; Hagedorn 1913a; Kalshoven 1963: 237; Kleine 1932a: 307; Wood, S. L. 1982b: 810. (**ds**) Atkinson & Equihua 1988: 102; Beaver 1976a: 26; Blackwelder 1947: 780; Blandford 1898b; Gemminger & Harold 1872: 2686; Hagedorn 1903b: 546, 1910d: 111, 1912a: 342, 1913a; Kalshoven 1963; Kleine 1913b: 163, 1914b: 337, 343, 371, 1932a: 307, 1934a: 175; Wood, S. L. 1982b: 810. (**tx**) Blandford 1898b; Eggers 1928c: 94–95, 1929e: 52, 1933b: 2, 24–25, 1939e; Eichhoff 1868c: 144–145, 1878b: 347, 1880a: 189; Hagedorn 1903b: 546, 1910a: 156, 1910b, 1912a; Nunberg 1959a: 439; Schedl 1940c: 208, 1948f: 261; Wood, S. L. 1972e: 199, 1982b: 810.

coronatus Eichhoff 1878b: 348. Holotype ♂; Brasilia interior; IRSNB, Brussels. Synonymy: Wood 1972c: 199.

References: (**tx**) Eichhoff 1878b: 348; Hopkins 1915b: 69; Wood, S. L. 1972c: 199.

burgdorfi Hopkins 1915b: 59. Holotype ♀; Costa Rica; USNM, Washington. Synonymy: Wood 1972c: 199.

References: (**ds**) Browne 1970: 542; Hopkins 1915b: 59; Wood, S. L. 1972c: 199.

curtus Eggers 1928c: 94. Lectotype ♀; Ecuador (Cachabe); USNM, Washington, designated by Anderson & Anderson 1971: 11. Synonymy: Wood 1972c: 199.

References: (**ds**) Blackwelder 1947: 779; Schedl 1960a: 77, 1966f: 80, 1970e: 91, 1973d: 157, 1976a: 54. (**tx**) Anderson, W. H. & Anderson 1971: 11; Eggers 1928c: 94–95, 1929e, 1933b: 24–25; Nunberg 1959a: 421; Schedl 1935d: 94, 1940c: 207, 1952h: 70, 1960a: 77, 1960b: 12, 1966f: 80, 1970e: 91, 1973d: 157, 1976a: 54, 1979c: 72; Wood, S. L. 1972c: 199.

femoratus Eggers 1928c: 95. Lectotype ♀; Brasil, Bahia; MNB, Berlin, designated by Wood 1982b: 810. Synonymy: Schedl 1960g: 12, Wood 1972c: 199.

References: (**ds**) Blackwelder 1947; Schedl 1966f: 79. (**tx**) Eggers 1928c: 95, 1929e, 1933b: 24–26; Nunberg 1959a: 425; Schedl 1948f: 278, 1960g: 12, 1979c: 95; Wood, S. L. 1972c: 199, 1982b: 810.

***sphenos* Sampson** 1912: 247. Holotype ♀; Uganda; BMNH, London.

Distribution: Africa (Ghana/ Uganda/ Zaire).

Hosts: *Acridocarpus fraxinifolius*, *Albizzia* spp., *Lovoa trichilioides*, *Pentadesma lebrunii*.

References: (**hb**) Schedl 1962j: 517. (**ds**) Kleine 1913b: 163, 1914b: 324; Schedl 1962j: 517. (**tx**)

Sampson 1912: 247–248; Schedl 1955i: 219, 1957a: 107, 1962j: 517, 1970a: 219.

perdiligens diligens Schedl 1954e: 79. Lectotype ♀; Gold Coast, Mpraeso; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 189.

Notes: (1) Schedl 1954e: 79 treated this as a subspecies of *perdiligens* and in 1957d: 107 as a subspecies of *sphenos*.

References: (**ds**) Thompson, G. H. 1963: 72. (**tx**) Schedl 1954e: 54, 64, 79, 1957d: 107, 1979c: 189.

***spicatulus* Browne** 1986c: 667. Holotype ♀; Borneo: Marudu Bay (Sabah) to Nagoya (Japan), imported; BMNH, London.

Distribution: Indonesia (Borneo).

Hosts: *Dipterocarpus* sp. log.

References: (**tx**) Browne 1986c: 667.

***spicatus* Browne** 1986a: 95. Holotype ♀; Port Barton (Palawan, Philippines) to Nagoya (Japan), imported; BMNH, London.

Distribution: Philippine Islands (Palawan).

Hosts: *Dipterocarpus* sp. log.

References: (**tx**) Browne 1986a: 95.

***spinatus* Eggers** 1923a: 203. Holotype ♀; Pangherang-Pisang auf Sumatra; MCG, Genova.

Distribution: Asia (Malaya), Indonesia (Sumatra).

References: (**hb**) Browne 1961c: 157. (**ds**) Browne 1961c: 157, 1980a: 371; Eggers 1923a: 203; Schedl 1953c: 290.

***spinicornis* Schedl** 1975f: 370. Holotype ♀; Biniguni, Gwariu River, 150 m, New Guinea; AMNH, New York.

Distribution: New Guinea.

References: (**ds**) Browne 1983a: 555. (**tx**) Schedl 1975f: 370.

***spinulosus* Blandford** 1898b: 201. Lectotype ♀; San Geronimo, Guatemala; BMNH, London.

Figures: Bright 1972d: 95, Nunberg 1959a:pl. 21, figs. 3–4, Pedrosa-Macedo & Schonherr 1985: 41, Samuelson 1981: 53.

Distribution: Antilles Islands (Grenada/ Guadeloupe/ Dominican Republic, Haiti in Hispanola/ Jamaica/ Trinidad), North America (Costa Rica/ Guatemala/ Honduras/ Jalisco, Nayarit, Veracruz in Mexico/ Panama), South America (Argentina/ Brazil/ Colombia/ Galapagos Islands/ Venezuela), introduced in Hawaiian Islands.

Hosts: *Acacia koa*, *A. polyphylla*, *Albizzia* sp., *Bursera simarubra*, *Cecropis* sp., *Citrus* sp., *Gleditsia* sp., *Mangifera indica*, *Nicotiana tabaccum*, *Ochroma* sp., *Pinus patula*, *Qualea ingens*, *Rudgea* cf. *amazonica*, *Samanga saman*, *Terminalis* sp.

References: (**en**) Equihua & Martinez 1988. (**ec**) Wichmann 1955a: 107. (**hb**) Atkinson & Equihua 1985b: 237; Beaver 1979a: 26; Wood, S. L. 1982b: 799. (**ds**) Atkinson & Equihua 1985b: 237, 1986a: 421, 1988: 102; Beaver 1976a: 26; Berti-Filho 1979: 42; Blackwelder 1947: 780; Bright 1972d: 78, 1982b: 165, 1985c: 174; Estrada & Atkinson 1988: 207; Hagedorn 1910d: 111; Kleine 1913b: 163, 1914b: 343, 371, 379; Nunberg 1963c: 98; Pedrosa-Macedo & Schonherr 1985: 41; Samuelson 1981: 88; Schedl 1966g: 90, 1967d: 3, 1971f: 149, 1972g: 45, 1973d: 159, 1976a: 55; Swezey 1941: 121; Wichmann 1955a: 107; Wood, S. L. 1977a: 73, 1982b: 799. (**tx**) Blandford 1898b: 201; Bright 1972d: 78, 95, 1985c: 174; Eggers 1931c: 20, 1933g: 20, 1934a: 82–83, 1940a: 108, 1940c: 238; Hagedorn 1910a: 156; Pedrosa-Macedo & Schonherr 1985: 41; Samuelson 1981: 53, 88; Schedl 1934g: 178, 1935d: 93–94, 1941f: 112, 1950f: 36, 1950i: 147, 1951h: 286, 1957a: 194; Wood, S. L. 1966b: 32, 1979b: 137, 1982b: 799.

fusciseriatus Eggers 1934a: 82. Holotype ♀; Costa Rica (La Caja: 8 km W San Jose); MNB, Berlin. Synonymy: Wood 1979b: 137.

References: (**ds**) Blackwelder 1947: 779. (**tx**) Eggers 1933g: 20, 1934a: 82, 1940c: 238; Nunberg 1959a: 425; Schedl 1935d: 93; Wood, S. L. 1979b: 137.

spinosulus Schedl 1934g: 178. Holotype ♀; Honolulu, Hawaiian Islands; F. C. Hadden Collection. Synonymy: Wood 1966b: 32.

References: (**ds**) Beeson 1938b: 294. (**tx**) Eggers 1933g: 20; Schedl 1934g: 178, 1941f: 112, 1950f: 36, 1950i: 147, 1979c: 235; Wood, S. L. 1966b: 32.

artespinulosus Schedl 1935d: 93. Lectotype ♀; Costa Rica, Hamburgfarm, Reventazon, Ebene Limon; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 27. Synonymy: Wood 1979b: 137.

References: (**ds**) Blackwelder 1947: 779; Schedl 1974e: 51. (**tx**) Schedl 1935d: 93, 1979c: 27; Wood, S. L. 1979b: 137.

***squamulatus* Eichhoff** 1869b: 282. Holotype ♀; Brasil; IRSNB, Brussels.

Figures: Nunberg 1971: 63, Pedrosa-Macedo & Schonherr 1985: 42, Terra 1987: 24.

Distribution: North America (Costa Rica/ El Salvador/ Guatemala/ Chiapas in Mexico), South America (Brazil/ Colombia/ Guyana/ Venezuela).

Hosts: *Conostegia oerstediana*, *Eucalyptus paniculata*, *Inga* sp., *Theobroma cacao*.

References: (**hb**) Wood, S. L. 1982b: 798. (**ds**) Blackwelder 1947: 780; Blandford 1898b: 195, 203; Gemminger & Harold 1872: 2686; Hagedorn 1910d: 111; Kleine 1913b: 163, 1914b: 337, 371; Pedrosa-Macedo & Schonherr 1985: 42; Schedl 1966f: 90, 1967d: 3, 1971f: 149, 1972g: 45, 1976a: 55, 1977e: 43; Wood, S. L. 1982b: 798. (**tx**) Blandford 1898b: 195, 203; Eichhoff 1869b: 282, 1878b: 339; Hagedorn 1910a: 157; Pedrosa-Macedo & Schonherr 1985: 42; Schedl 1935d: 93, 1963d: 227, 1963f: 60; Schonherr & Pedrosa-Macedo 1981:

57, 1985: 42; Terra 1987: 24; Wood, S. L. 1982b: 798.

squamulatus niger Nunberg 1971: 61. Holotype ♀; Ilheus, Bahia, Brasil; MZUSP, Sao Paulo, preoccupied by Sampson 1912.
Notes: (3) This is an apparent aberration, not a geographical race.
References: (**ds**) Terra 1987: 22. (**tx**) Nunberg 1971: 63; Sampson 1912: 247.

***starki* Nunberg** 1956d: 209. Holotype ♀; Ussuri Distr., USSR; Kurenzov Collection in Wladivostok, automatic.
Distribution: Asia (Ussuri in USSR).
Hosts: *Quercus mongolica*.
References:(**tx**) Nunberg 1956d: 209.

quercus Kurenzov 1948a: 51. Holotype ♀; Ussuri Distr., USSR; Kurenzov Collection in Wladivostok, preoccupied by Hopkins 1915.
References: (**hb**) Kurenzov 1948a: 51; Stark 1952: 440. (**ds**) Stark 1952: 440. (**tx**) Kurenzov 1948a: 51; Nunberg 1956d: 209; Stark 1952: 440.

***striatulus* Browne** 1980c: 487. Holotype ♀; Vanimo (New Guinea) to Nagoya (Japan), imported; BMNH, London.
Distribution: New Guinea.
References: (**ds**) Ohno, Yoshioka, et al. 1989: 64. (**tx**) Browne 1980c: 487; Ohno et al. 1980c: 487.

***strombosiopsis* Schedl** 1957d: 91. Holotype ♀; Congo Belge: Yangambi; MRCB, Tervuren.
Figures: Nunberg 1963b:pl. 29, figs. 1–2, Schedl 1962j: 297.
Distribution: Africa (Zaire).
Hosts: *Strombosiopsis tetrandra*.
References: (**hb**) Schedl 1962j: 297. (**ds**) Schedl 1962j: 297. (**tx**) Browne 1965a: 202; Nunberg 1963b: 57, pl. 29; Schedl 1957d: 84, 91, 1958k: 145, 1962j: 297, 1979c: 239.

***suaui* Schedl** 1973e: 75. Holotype ♀; Biniguni, Gwariu River, M. Bay Dist. [New Guinea], 150 m; AMNH, New York.
Distribution: New Guinea
References: (**tx**) Schedl 1973e: 75.

***subasperulus* Eggers** 1935c: 310. Holotype ♀; Kamerun: Victoria; USNM, Washington.
Distribution: Africa (Angola/ Cameroon/ Sierra Leone/ Uganda).
Hosts: *Bauhinia tomentosa*, *Terminalia superba*, *Theobroma cacao*.
References: (**cn**) Amaro & Soares 1957: 100, 132, 141. (**ds**) Ferreira 1965: 1125; Nonveiller 1984: 42; Nunberg 1960a: 295; Schedl 1962j: 403, 1962k: 1104. (**tx**) Anderson, W. H. & Anderson 1971: 32; Eggers 1935c: 310–311, 1940c: 237–238, 1941a: 105.

***subcarinulatus* Eggers** 1932d: 302. Holotype ♀; Congostaat (Sankuru: Sangaie); MRCB, Tervuren.
Figures: Nunberg 1963b:pl. 28, figs. 6–7.
Distribution: Africa (Angola/ Zaire).
References: (**ds**) Ferreira 1965: 1125; Schedl 1959p: 21. (**tx**) Eggers 1932d: 302–303; Nunberg 1963b: 58, pl. 28; Schedl 1959p: 21, 1962j: 404, 1979c: 240.

***subcostatus* Eichhoff** 1869a: 281. Holotype ♀; Siam; IRSNB, Brussels.
Figures: Nobuchi 1978a:pl. 2.
Distribution: Asia (Malaya/ Thailand), Australia, Indonesia (Borneo, Sumatra), Philippine Islands.
References: (**hb**) Browne 1941. (**ds**) Browne 1961c: 140; Choo, Woo, & Kim 1981: 201; Gemminger & Harold 1872: 2686; Hagedorn 1910d: 111; Kleine 1913b: 168; Nobuchi 1978a: 25; Ohno et al. 1987: 88; Schedl 1966b: 52, 1966g: 35, 1969a: 205, 1972a: 145. (**tx**) Eggers 1930d; Eichhoff 1869a: 280–281, 1878b: 345; Hagedorn 1910a: 157, 1910b; Nobuchi 1978a:pl. 2, 1983: 304; Ohno, Yoneyama, & Nakazawa 1982b: 9; Schedl 1936d: 5, 1937e: 544, 1960h: 108.

fleutiauxi Blandford 1896a: 21. Syntypes 3 ♀; Indo-China: Mytho; BMNH, London. Synonymy: Schedl 1960h: 108.
References: (**cn**) Ishikura 1966. (**hb**) Kalshoven 1959c: 162. (**ds**) Hagedorn 1910d: 104; Ishikura 1966; Kalshoven 1959c: 162; Kleine 1913b: 168, 1914b; Murayama 1957a: 37. (**tx**) Blandford 1896a: 21; Hagedorn 1910a: 154, 1910b; Schedl 1952k: 162, 1953b: 124, 1958i: 215, 1960h: 108.

webbi Hopkins 1915b: 59. Holotype ♀; Calapan, Philippine Islands; USNM, Washington. Synonymy: Schedl 1952j: 162.
References: (**tx**) Hopkins 1915b: 59; Schedl 1952k: 162.

subcostatus dearmatus Eggers 1923a: 205. Holotype ♀; Mungei Mesh (?) auf Sumatra; Eggers Collection, in NHMW, Wien. Synonymy: Wood 1989: 177.
References: (**tx**) Eggers 1923a: 205; Schedl 1979c: 240; Wood, S. L. 1989: 177.

***subcrenulatus* Eggers** 1932d: 301. Holotype ♀; Congostaat (Madimba); USNM, Washington.
Distribution: Africa (Zaire).
References: (**tx**) Anderson, W. H. & Anderson 1971: 32; Eggers 1932d: 301–302; Schedl 1962j: 298.

***subdentatulus* Browne** 1986a: 97. Holotype, sex?; New Guinea: Fak fak to Nagoya (Japan), imported; BMNH, London.
Distribution: New Guinea.
Hosts: Nyatoh log (Sapotaceae).
References: (**tx**) Browne 1986a: 97.

***subdentatus* Browne** 1974b: 539. Holotype ♀; Malaya: Kepong, Forest Research Institute Insectary; BMNH, London.
Distribution: Asia (Malaya).
References: (**tx**) Browne 1974b: 539.

***subdolosus* Schedl** 1942d: 44. Lectotype ♀; Java: Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 241.
Distribution: Asia (Malaya), Indonesia (Borneo, Java, Sumatra).
References: (**hb**) Browne 1961c: 152; Kalshoven 1959c: 152. (**ds**) Browne 1961c: 152, 1981a: 125; Kalshoven 1959c: 152; Ohno et al. 1987: 88. (**tx**) Nobuchi 1983: 304; Schedl 1942d: 44, 1958k: 148, 1979c: 241.

***subductus* Schedl** 1976a: 78. Holotype ♀; V. Vera, Matto Grosso, Lon. 55 degrees 36′, Lat. 12 degrees 46′, Brasil; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**tx**) Schedl 1976a: 78.

***subemarginatus* Eggers** 1940d: 150. Lectotype ♀; Java (Batoerraden, G. Slamet); USNM, Washington, designated by Anderson & Anderson 1971: 32.
Distribution: Asia (Malaya), Indonesia (Java), Philippine Islands.
Hosts: *Dyera costulata*, *Fagraea fragrans*.
Notes: (3) Schedl 1942d: 46 (described male).
References: (**hb**) Beeson 1933; Browne 1961c: 148; Kalshoven 1959c: 142. (**ds**) Beeson 1933; Browne 1961c: 148; Eggers 1926a; Hagedorn 1910d: 111; Kalshoven 1959c: 142; Kleine 1914b: 270; Schedl 1966b: 73. (**tx**) Anderson, W. H. & Anderson 1971: 32; Beeson 1933; Eggers 1922a, 1926a, 1927b, 1929e, 1940d: 150–151; Hagedorn 1910a: 157; Nobuchi 1983: 304; Schedl 1942d: 46, 1951i: 45, 50, 1958b: 102, 1979c: 241.

***subgranosus* Schedl** 1962j: 309. Holotype ♀; Congo Belge: Route Tshibinda-Bunyakiri, 1000 m; Schedl Collection in NHMW, Wien.
Distribution: Africa (Zaire).
Hosts: *Pentaclethra macrophylla*.
References: (**tx**) Schedl 1962j: 309, 1979c: 241.

***sublinearis* Eggers** 1940d: 148. Holotype ♀; Java (Preanger, G. Tangkoeban Prahoe); F.C. Drescher Collection.
Distribution: Indonesia (Java).
Notes: (1) Schedl 1979c: 242 lists the holotype as in his collection although Eggers clearly deposited it in the Drescher Collection.
References: (**tx**) Eggers 1940d: 148; Schedl 1951i: 45, 1979c: 242.

***sublongus* Eggers** 1927c: 99. Holotype ♀; Philippinen: Luzon, Provinz Mt., Balbalan and Prov. Bataan, Limay; Eggers Collection, in NHMW, Wien.
Distribution: Philippine Islands (Luzon).
References: (**ds**) Schedl 1966b: 73. (**tx**) Eggers 1927c: 99–100, 1943a: 386; Nobuchi 1983: 304; Schedl 1979c: 242.

***submolestus* Schedl** 1941d: 403. Holotype ♀; Madagascar (Sikora); Schedl Collection in NHMW, Wien.
Distribution: Madagascar.
Hosts: *Alluaudia procera*, *Eucalyptus* sp., *Mesogordonia* sp., *Pinus khasia*.
References: (**ds**) Schedl 1970d: 234, 1977b: 164. (**tx**) Schedl 1941d: 403, 1977b: 164, 1970d: 234, 1979c: 242.

***subplanatus* Eggers** 1943a: 386. Holotype ♀; Bolivia (Cochabamba); Eggers Collection, in NHMW, Wien.
Distribution: South America (Bolivia).
References: (**tx**) Eggers 1943a: 386; Schedl 1979c: 243.

***subpruinosus* Browne** 1986a: 93. Holotype ♀; Philippine Islands: Maconacon (Luzon) to Nagoya (Japan), imported.
Distribution: Philippine Islands (Luzon).
Hosts: *Canarium* sp. log.
References: (**tx**) Browne 1986a: 93.

***subtilis* Schedl** 1970e: 96. Holotype ♀; Brasilien, Nova-Teutonia, 3–500 m, 27 degrees 11 minutes B, 52 degrees 23 minutes L; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
Notes: (3) This might be a synonym of *catulus*.
References: (**ds**) Schedl 1970e: 85. (**tx**) Schedl 1970e: 85, 96, 1979c: 244.

***subtruncatus* Schedl** 1972m: 201. Holotype ♀; Fiji Is. ?; BMNH, London.
Distribution: Fiji Islands.
References: (**tx**) Schedl 1972m: 201.

***subtuberculatus* Eggers** 1927a: 194. Holotype ♀; Belge Congo, Sankuru; MRCB, Tervuren.
Figures: Browne 1973a: 295, Nunberg 1963b:pl. 29, figs. 5–6.
Distribution: Africa (Angola/ Cameroon/ Congo/ Equatorial Guinea/ Gabon/ Ghana/ Ivory Coast/ Tanzania/ Uganda/ Zaire/ Zambia).
Hosts: Many listed by Schedl 1962j: 326–327. *Macrolobium* sp., *Terminalia ivorensis*.
Notes: (3) Browne 1973a: 295 (described male).
References: (**hb**) Beaver & Loyttyniemi 1985a: 76; Browne 1963a: 244; Loyttyniemi, Beaver, & Loyttyniemi 1984; Schedl 1962j: 324. (**ds**) Beaver & Loyttyniemi 1985a: 76; Browne 1963: 244, 1985b: 76; Ferreira 1965: 1125; Kleine 1934a; Mayne & Donis 1962: 323; Nunberg 1960a: 296, 1961a: 331; Schedl 1938d: 451, 1954e: 54, 70, 1959p: 21, 1961m: 84, 1962h: 61, 1962j: 324, 1962k: 1104, 1963a: 32, 1964e: 69, 1964f: 618, 1966c: 229, 1967e: 219, 1971f: 149, 1971g: 194, 1972e: 284, 1979c: 416; Wichmann 1954: 522. (**tx**) Browne 1973a: 295; Eggers 1927a: 194–195; Nunberg 1963b: 59, pl. 29; Powell, W. 1980: 29; Schedl 1941d: 380, 404, 1950d: 8, 1952j: 4, 1961e: 148, 1962j: 324–325, 1962k: 1104, 1965c: 71.

***sulcaticeps* Schedl** 1962j: 318. Holotype ♀; Congo Belge: Irumu; Schedl Collection in NHMW, Wien.

Distribution: Africa (Zaire).
References: (**tx**) Schedl 1951k: 152, 1962j: 318, 1979c: 245.

***sulcatulus* Eggers** 1939b: 13. Holotype ♀; Nordost-Birma (Kambaiti, 7000 Fuss); NHR, Stockholm.
Distribution: Asia (Burma).
References: (**tx**) Schedl 1939b: 13–14, 1979c: 245.

***sulcicauda* Schedl** 1972b: 271. Holotype ♀; Fiji, Viti Levu; Schedl Collection in NHMW, Wien.
Distribution: Fiji Islands.
References: (**ds**) Browne 1974a: 65. (**tx**) Schedl 1972b: 271, 1979c: 246.

tenuipennis Browne 1974a: 71. Holotype ♀; Fiji: Viti Levu, Nausori Highlands; BMNH, London. Synonymy: Wood 1989: 177, Beaver 1991: 96.
References: (**hb**) Roberts 1977a: 264. (**ds**) Browne 1974a: 65; Roberts 1977a: 264. (**tx**) Beaver 1991: 96; Browne 1974a: 65, 71; Wood, S. L. 1989: 177.

***sundaensis* Eggers** 1923a: 175. Lectotype ♀; Poerwakarta auf Java; USNM, Washington, designated by Anderson & Anderson 1971: 33.
Distribution: Indonesia (Java).
References: (**hb**) Browne 1961c: 107; Kalshoven 1959c: 136. (**ds**) Kalshoven 1959c: 136; Schedl 1964c: 305. (**tx**) Anderson, W. H. & Anderson 1971: 33; Eggers 1923a: 175–176; Schedl 1942c: 191, 1953c: 290.

***swezeyi* Beeson** 1929: 234. Holotype ♀; Samoa: Tutuila, Fagasa; BPBM, Honolulu.
Distribution: Samoan Islands.
Hosts: *Elaeocarpus* sp., *Leucaena* sp.
Notes: (3) Schedl 1955b: 287 (described male).
References: (**hb**) Beaver 1976b: 541. (**ds**) Beaver 1976b: 541; Beeson 1938b: 294. (**tx**) Beeson 1929: 234–235; Schedl 1951k: 137, 1955b: 287, 308; Schedl 1979c: 248.

***taichuensis* Schedl** 1952c: 64. Syntypes ♀; Formosa, Taichu; Schedl Collection in NHMW, Wien and Chujo Collection.
Distribution: Asia (Taiwan).
Notes: (1) Schedl 1979c: 249 (citation of holotype invalid).
References: (**ds**) Nobuchi 1967: 23. (**tx**) Schedl 1952c: 64, 1979c: 249.

***taiwanensis* Browne** 1980b: 386. Holotype ♀; Kaohsiung (Formosa) to Nagoya (Japan), imported; BMNH, London.
Distribution: Asia (Taiwan).
Hosts: *Zelkova formosana*.
References: (**tx**) Browne 1980b: 386.

***takeharai* Browne** 1983a: 557. Holotype ♀; Teminaban (West Irian) to Nagoya (Japan), imported; BMNH, London.
Distribution: New Guinea.
References: (**tx**) Browne 1983a: 557.

***takinoyensis* Murayama** 1953b: 109. Holotype ♀; Wakamatsu City, Fukushima pref. or Ohta vill., Kuromori, Japan; Murayama Collection in USNM, Washington.
Distribution: Asia (Japan).
References: (**ds**) Murayama 1954b: 183; Nobuchi 1985c: 28. (**tx**) Murayama 1953b: 109, 1954b: 183.

***taxicornis* Schedl** 1971c: 385. Holotype ♀; Malaya, Kepong; BMNH, London.
Distribution: Asia (Malaya).
References: (**tx**) Schedl 1971c: 385, 1979c: 250.

***temetiuicus* Beeson** 1935b: 112. Syntypes 4 ♀; Hivaoa: Matauuna, 3700 feet, Temetiu Ridge, 3900 feet, Temetiu summit, 4160 feet; not given (BPBM, Honolulu ?).
Distribution: Marquesas Islands.
Hosts: *Cheirodendron* sp., *Cyrtandra* sp.
References: (**ds**) Beeson 1938b: 294, 1939: 112, 114. (**tx**) Beeson 1935b: 112–113.

***tenellus* Schedl** 1957d: 107. Holotype ♀; Congo Belge: Kivu, Hembe-Bitale; MRCB, Tervuren.
Figures: Nunberg 1963b:pl. 27, figs. 6–7, pl. 28, fig. 1, Schedl 1962j: 520.
Distribution: Africa (Zaire).
Hosts: *Alchornea hirtella*, *Ficus* sp., *Micrococos pinnatifida*, *Syzygium congolense*, *Turraeanthus africna*.
Notes: (1) Originally named as a subspecies of *montanus* Schedl (preoccupied), it automatically replaced *montanus* when the homonymy was found; the subsequent replacement names *syzygii* Nunberg and *submontanus* Schedl have no status.
References: (**tx**) Nunberg 1963b: 55; Schedl 1957d: 107, 1960i: 106, 1962j: 521, 1979c: 251.

montanus Schedl 1957d: 106. Holotype ♀; Congo Belge: Kivu, Hembe-Bitale; MRCB, Tervuren, preoccupied by Niisima 1910.
References: (**hb**) Schedl 1962j: 520. (**ds**) Schedl 1962j: 520. (**tx**) Nunberg 1959c: 167; Schedl 1957d: 106, 1960i: 106–107, 1962j: 520, 1979c: 159.

syzygii Nunberg 1959c: 167. Holotype ♀; Congo Belge: Kivu, Hembe-Bitale; MRCB, Tervuren, automatic.
Notes: (1) This is an unneeded replacement name.
References: (**tx**) Nunberg 1959c: 167, 1963b: 56, pl. 27–28; Schedl 1957d: 106.

submontanus Schedl 1960i: 106. Holotype ♀; Congo Belge: Kivu, Hembe-Bitale; MRCB, Tervuren, automatic.
Notes: (1) This is an unneeded replacement name.

References: (**tx**) Nunberg 1959c: 167, 1963b: 55; Schedl 1960i: 106–107, 1962j: 520.

***teninabani* Browne** 1986c: 668. Holotype ♀; New Guinea: Teminaban to Nagoya (Japan), imported; BMNH, London.
Distribution: New Guinea.

References: (**tx**) Browne 1986c: 668.

***timidus* Schedl** 1973f: 76. Holotype ♀; Peria Creek, Kwagira River, M. Bay Dist. [New Guinea], 50 m; AMNH, New York.
Distribution: New Guinea.
References: (**tx**) Schedl 1973f: 76, 1979c: 253.

***tinnitus* Schedl** 1941d: 402. Holotype ♀; Kamerun; Schedl Collection in NHMW, Wien.
Distribution: Africa (Cameroon).
References: (**tx**) Schedl 1941d: 402, 1962j: 211, 1979c: 253.

***titubanter* Schedl** 1948h: 578. Holotype ♀; Mexico; Schedl Collection in NHMW, Wien.
Distribution: North America (Puebla in Mexico).
Hosts: *Alnus* sp.
References: (**hb**) Wood, S. L. 1982b: 826. (**ds**) Wood, S. L. 1982b: 826. (**tx**) Schedl 1948h: 578, 1979c: 253; Wood, S. L. 1975a: 23, 1982b: 826.
dissidens Wood 1974a: 41. Holotype ♀; 9 km NE Teziutlan, Puebla, Mexico; Wood Collection.
Synonymy: Wood 1975a: 23.
References: (**tx**) Wood, S. L. 1974a: 41, 1975a: 23.

***todo* Kono** 1938b: 71. Holotype ♀; Japan: Hokkaido, Nopporo; not given.
Distribution: Asia (Japan).
References: (**ec**) Yasumatsu & Watanabe 1965: 70. (**tx**) Kono 1938: 45–46, 1938b: 65, 71.

***tonsus* (Hagedorn)** 1905: 412 (*Dryocoetes*). Holotype ♀; environs de Saint-Georges, Oyapock, Guyane francaise; MNHN, Paris.
Distribution: South America (Cayenne).
Notes: (3) Wood, S. L. 1977b: 211 (to *Xyleborus*).
References: (**ds**) Hagedorn 1910d: 67; Kleine 1913b: 136, 1914b: 338; Murayama 1957c: 607. (**tx**) Eggers 1933b: 2–3; Hagedorn 1905: 412, 1910a: 96; Murayama 1957c: 607; Wood, S. L. 1977b: 211.

***transitus* Schedl** 1962j: 170. Holotype ♀; Kamerun; Schedl Collection in NHMW, Wien.
Distribution: Africa (Cameroon).
References: (**tx**) Scheld 1962j: 170, 1979c: 254.

***triangi* Schedl** 1958b: 103. Lectotype ♀; Malaya, Triang Forest Reserve; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 255.
Distribution: Asia (Malaya).
Hosts: *Balanocarpus heimii*, *Shorea laevis*.
References: (**hb**) Browne 1961c: 149. (**ds**) Schedl 1959c: 168. (**tx**) Schedl 1958b: 103, 1979c: 255.

***tribulatus* Wood** 1974a: 39. Holotype ♀; Rio Damitas, Dota Mts., San Jose, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: Liana.
References: (**ds**) Wood, S. L. 1982b: 819. (**tx**) Wood, S. L. 1974a: 39, 1982b: 819.

***trispinatus* Browne** 1981a: 130. Holotype ♀; Butuan (Philippines) to Tokyo (Japan), imported; BMNH, London.
Distribution: Philippine Islands.
Hosts: *Shorea* sp.
References: (**tx**) Browne 1981a: 130; Nobuchi 1983: 304.

***tristiculus* Wood** 1975b: 401. Holotype ♀; Brazil, 12 degrees 49 minutes S, 51 degrees 46 minutes W; BMNH, London.
Distribution: South America (Brazil).
Notes: (1) This probably belongs to *Theoborus*.
References: (**tx**) Wood, S. L. 1975b: 401.

***truncaticauda* Browne** 1984d: 100. Holotype ♀; New Guinea: Gumi; BMNH, London.
Distribution: New Guinea.
References: (**tx**) Browne 1984d: 100.

***truncatulus* Schedl** 1957d: 94. Holotype ♀; Congo Belge: Kivu, Hembe-Bitale; MRCB, Tervuren.
Figures: Nunbert 1963b:pl. 30, Schedl 1962j: 311.
Distribution: Africa (Nigeria/ Ruanda/ Zaire).
Hosts: *Alchornea hirtella*, *Brillantaisia* sp., *Dichapetalum* sp., *Ficus* sp., *Macaranga* sp., *Pentadesma lebrunii*.
References: (**hb**) Schedl 1962j: 310. (**ds**) Schedl 1962j: 310. (**tx**) Nunberg 1963b: 60, pl. 30; Schedl 1957d: 94, 1962j: 310–311.

***tsukubanus* Murayama** 1954b: 195. Holotype ♀; Mt. Tsukuba, Ibaragi pref.; Murayama Collection in USNM, Washington.
Distribution: Asia (Japan).
Hosts: *Quercus acuta*.
References: (**ds**) Murayama 1954b: 184; Nobuchi 1985c: 28. (**tx**) Murayama 1954b: 195.

***tuberculosus* Browne** 1981b: 602. Holotype ♀; Balingtang (Philippines) to Nagoya (Japan), imported; BMNH, London.
Distribution: Philippine Islands.
Hosts: *Shorea* sp.
References: (**ds**) Ohno et al. 1987: 88, 1989: 64. (**tx**) Browne 1981b: 602.

***tumucensis* Hagedorn** 1905a: 414. Lectotype ♀; Guyane francaise, riviere Lunier, Tumuc-Humac; MNHN, Paris, designated by Wood 1982b: 820.
Figures: Nunberg 1959a: 22, figs. 3–4.
Distribution: North America (Costa Rica), South America (Brazil/ Cayenne).
Hosts: *Bursera simarubra*.
Notes: (3) Schedl 1960i: 107 (*obtrusus* Sampson, nomen nudum, synonymy).
References: (**hb**) Wood, S. L. 1982b: 810. (**ds**) Blackwelder 1947: 780; Hagedorn 1910d: 112; Kleine 1913b: 163, 1914b: 339; Schedl 1973d: 160; Wood, S. L. 1982b: 810. (**tx**) Eggers 1933b: 3; Hagedorn 1905a: 414, 1910a: 157; Nunberg 1959a: 22; Schedl 1960i: 107; Wood, S. L. 1972e: 200, 1982b: 810.
guayanensis Eggers 1933b: 26. Syntypes ♂♀; Nouveau Chantier, French Guiana; MNHN, Paris. Synonymy: Wood 1972e: 200.
References: (**ds**) Blackwelder 1947: 779;

Schedl 1973d: 158. (**tx**) Eggers 1933b: 3, 26–28; Nunberg 1959a: 426; Schedl 1979c: 114; Wood, S. L. 1972e: 200.

***tunggali* Schedl** 1936j: 32. Lectotype ♀; Malay Peninsula, Pagang: Rotan Tunggal Forest Reserve, Bukit Kajang Forest Reserve, Selangor, Kanching Forest Reserve; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 258.
Distribution: Asia (Malaya/ Sri Lanka), Indonesia (Borneo).
Hosts: *Canarium* sp., *Castanopsis* sp., *Dryobalanops aromatica*, *Heritiera javanica*, *Shorea* spp.
References: (**cn**) Mathur & Singh 1961a: 39. (**hb**) Browne 1938a, 1961c: 150. (**ds**) Beeson 1961: 310; Browne 1938a, 1961c: 150, 1984b: 286; Mathur & Singh 1961a: 39; Ohno, Yoneyama, & Nakazawa 1987: 94. (**tx**) Schedl 1936j: 32, 1939e: 331, 1959a: 507, 1979c: 259.

***turraeanthus* Schedl** 1957d: 103. Holotype ♀; Congo Belge: Kivu, route Tshibinda-Bunyakiri, km 77, 1000 m; MRCB, Tervuren.
Figures: Nunberg 1963b:pl. 30, fig. 7, pl. 31, fig. 1.
Distribution: Africa (Zaire).
Hosts: *Turraeanthus africana*.
References: (**ds**) Schedl 1962j: 327. (**tx**) Nunberg 1963b: 61, pl. 30–31; Schedl 1957d: 103, 1962j: 327, 1979c: 259.

***ugandaensis* Schedl** 1957e: 882. Holotype ♀; Uganda, Toro; BMNH, London.
Figures: Browne 1970: 570 (male).
Distribution: Africa (Kenya/ Tanzania/ Uganda).
Hosts: *Combretum gueinzii*, *Maba abyssinica*.
References: (**ds**) Schedl 1962j: 293, 1972k: 296, 1979c: 296. (**tx**) Browne 1963b: 247, 1970: 570; Schedl 1957e: 882, 1962j: 293, 1979c: 259.

***uncatus* Schedl** 1970e: 96. Holotype ♀; Brasilien, Jacupiranga (S.P.), 40 m, 24 degrees 45 minutes, 47 degrees 56 minutes; Schedl Collection in NHMW, Wien.
Distribution: South America (Brazil).
References: (**ds**) Schedl 1970e: 85, 96–97. (**tx**) Schedl 1970e: 85, 96–97, 1979c: 260.

***ustus* Schedl** 1957d: 96. Holotype ♀; Congo Belge: Yangambe; MRCB, Tervuren.
Figures: Nunberg 1963b:pl. 31, figs. 2–3.
Distribution: Africa (Zaire).
Hosts: *Afzelia bella*, *Scorodophloeus zenkeri*.
References: (**hb**) Browne 1941; Schedl 1962k: 318. (**ds**) Schedl 1962j: 318. (**tx**) Nunberg 1963b: 61; Schedl 1957d: 96, 1962j: 318, 1979c: 263.

***vanrynae* Browne** 1973a: 294. Holotype ♀; Zaire: Menkao, 60 km N. Kinshasa; MRCB, Tervuren.
Distribution: Africa (Zaire).
References: (**tx**) Browne 1973a: 294.

***venustulus* Schedl** 1969b: 219. Holotype ♀; New Guinea: Jimi Valley Rain Forest, Western Highlands; CSIRO, Canberra.
Distribution: New Guinea.
Hosts: *Harpullia* sp.
References: (**bv**) Gray, B. 1974c. (**hb**) Gray, B. 1974c. (**tx**) Schedl 1969b: 219–220, 1979c: 265.

***vernaculus* Schedl** 1975f: 372. Holotype ♀; Nuwok, Manus Island District, New Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1975f: 372, 1979c: 266.

***viaticus* Schedl** 1974d: 464. Holotype ♀; Bulolo, Road 35, Morobe Dist., New Guinea; CSIRO, Canberra.
Distribution: New Guinea.
Hosts: *Rhus taitensis*.
References: (**tx**) Schedl 1974d: 464, 1979c: 267.

***vicinus* Eichhoff** 1878b: 394. Holotype ♀; Venezuela; IRSNB, Brussels.
Distribution: South America (Venezuela).
References: (**ds**) Blackwelder 1947: 780; Hagedorn 1910d: 112; Kleine 1913b: 163, 1914b: 340. (**tx**) Eichhoff 1878b: 394; Hagedorn 1910a: 157.

***viduus* Eichhoff** 1878b: 391. Syntypes ♀; uncertain, either Brasilia or America septentrionali [USA]; Hamburg Museum, lost.
Distribution: North America (Alabama, Florida, Maryland, Missouri, Tennessee in USA).
References: (**ds**) Blackwelder 1947: 780; Blatchley & Leng 1916: 623; Drooz 1985: 374; Hagedorn 1910d: 112; Kleine 1913b: 163; Leng 1918: 211, 1920: 342; Wood, S. L. 1982b: 836. (**tx**) Blatchley & Leng 1916: 623; Eichhoff 1878b: 391; Hagedorn 1910a: 159; Hopkins 1915b: 62, 1915c: 217; Wood, S. L. 1982b: 836.

***viruensis* Browne** 1984a: 157. Holotype ♀; Viru Harbour (Solomon Islands) to Nagoya (Japan), imported; BMNH, London.
Distribution: Solomon Islands.
Hosts: Basswood log.
References: (**ds**) Ohno et al. 1988a: 94. (**tx**) Browne 1984a: 157.

***vismiae* Wood** 1974a: 39. Holotype ♀; Rio Damitas, Dota Mts., San Jose, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica), South America (Venezuela).
Hosts: *Vismia guayanensis*, Guttiferae sp.
References: (**hb**) Wood, S. L. 1982b: 821. (**ds**) Wood, S. L. 1982b: 821. (**tx**) Wood, S. L. 1974a: 39–40, 1982b: 821.

***volvulus* (Fabricius)** 1775: 454 (*Bostrichus*). Lectotype ♀; America ligno Dom v. Rohr [presumably Cuba]; UZMC, Copenhagen, designated by Wood 1982b: 833.
Figures: Nobuchi 1978a:pl. 4, Nunberg 1963b:pl. 7, figs. 1–6, Pedrosa-Macedo & Schonherr 1985: 44, Wood 1960a: 65.
Distribution: Africa (Angola/ Burundi/ Cameroon/ Congo/ Equatorial Guinea/ Ethiopia/ Gabon/ Ghana/ Guinea/ Ivory Coast/ Kenya/ Mauritius Island/ Mozambique/ Namibia/ Nigeria/ Ruanda/

Seychelles Islands/ Somalia/ South Africa/ Sudan/ Tanzania/ Uganda/ Zaire/ Zimbabwe), Antilles Islands (Cuba/ Jamaica/ Puerto Rico/ Santo Domingo/ Trinidad), Asia (Burma/ Japan/ Korea/ Malaya/ Ryukyu Islands/ Taiwan/ Thailand), Australia, Fiji Islands, Hawaiian Islands, Indonesia (Borneo, Celbes, Java, Sumatra), Madagascar, North America (Belize/ Costa Rica/ El Salvador/ Guatemala/ Honduras/ Isla del Coco/ Baja California Sur, Chiapas, Guerrero, Jalisco, Mexico, Morelos, Nayarit, Oaxaca, Puebla, Quintana Roo, San Luis Potosi, Tabasco, Yucatan in Mexico/ Nicaragua/ Panama/ Florida in USA), South America (Argentina/ Bolivia/ Brazil/ Cayenne/ Chile/ Colombia/ Ecuador/ Galapagos Islands/ Guyana/ Paraguay/ Peru/ Suriname/ Uruguay/ Venezuela).
Hosts: Many listed by Browne 1961c: 144, Schedl 1962j: 417–422 and Wood 1982b: 834.
Notes: (1) Eggers 1929e: 47 (to *Xyleborus*). (3) This species is doubtfully distinct from *perforans* and may intergrade with that species; reports of it from SE Asia to the SW Pacific region probably refer to *perforans* as do many records from Africa (SLW).
References: (**bv**) Choo, Woo, & Park 1988; Morales 1984. (**cn**) Ashby 1915: 311; Ballou 1905; Barrett 1908; Beaver 1988a: 67; Equihua-Martinez 1988; Estrada & Atkinson 1988: 208; Wood, S. L. 1977a: 73. (**ec**) Equihua & Atkinson 1986: 630. (**hb**) Ballou 1905; Barrett 1908; Beaver 1988a: 67; Beaver & Loyttyniemi 1985a: 76; Burgos & Saucedo 1983: 99; Deyrup & Atkinson 1987a: 65; Equihua & Atkinson 1986: 630; Loyttyniemi, Beaver, & Loyttyniemi 1984; Morales 1984; Wood, S. L. 1982b: 833. (**ds**) Atkinson & Equihua 1985a: 87, 1985b: 238, 1986a: 421; Atkinson et al. 1986: 62; Ballou 1905; Beaver 1988a: 67; Beaver & Loyttyniemi 1985a: 76; Blackwelder 1947: 780; Bright 1968b: 1318, 1972d: 85, 1982a: 128, 1985c: 174; Bruch 1914a; Burgos & Saucedo 1983: 99; Choo 1983: 112; Choo & Woo 1985: 166; Choo, Woo, & Park 1988; Deyrup & Atkinson 1987a: 65; Drooz 1985: 374; Equihua & Atkinson 1986: 630; Estrada & Atkinson 1988: 208; Ferrer 1942; Kleine 1914b: 379; Nunberg 1952: 21, 1963c: 98, 1965b: 21; Ohno, Yoneyama, & Nakazawa 1982a: 4, 1982b: 9, 1987a: 88, 1987b: 94; Ohno, Yoshioka, et al. 1988a: 94, 1989: 64; Pedrosa-Macedo & Schonherr 1985: 44; Tucker 1952: 347; Wood, S. L. 1957e: 1273, 1961c: 2, 1977a: 73, 1982b: 833. (**tx**) Bright 1968b: 1318, 1972d: 85, 1985c: 174; Choo 1983: 112; Eggers 1929e: 43, 47; Eichhoff 1878b: 378; Fabricius 1792: 363, 1801: 354, 383; Nunberg 1952: 21, 1959a: 443, 1964: 21; Pedrosa-Macedo & Schonherr 1985: 44; Schedl 1940a: 362–363, 1951: 73, 1952e: 123, 1952k: 164, 1956b: 30, 1957a: 194, 1958f: 35; Wood, S. L. 1960a: 65, 68, 1961c: 2, 1972e: 200, 1979b: 136, 1982b: 833.

torquatus Eichhoff 1868c: 146. Lectotype ♀; Brasil; IRSNB, Brussels, designated by Wood 1982b: 833. Synonymy: Wood 1960a: 69.
Notes: (1) This variant was treated as a species by Schedl; it once might have formed a clearly defined geographical race, but the limits have been virtually obliterated by movement through commerce and consequent hybridization; while some populations are clearly distinguishable, many intergrade totally.
References: (**bv**) Schedl 1960f: 100; Schedl, W. 1962: 368. (**cn**) Anonymous 1892: 164–165, 1970c: 14; Bondar 1922: 1–113; Box 1953, 1953a; Cachan 1957: 5, 15, 42–53; Costa Lima 1956; Flutier 1960; Frappa 1933b: 179–181; Frohlich & Rodewald 1969: 99; Mayne 1917: 7, 27; Miller, N. C. E. 1941: 10; Morstatt 1937: 26; Veitch 1923: 1–30; Webb & Jones 1957: 25–42; Yunus & Hua 1980: 231. (**ec**) Banerjee 1983; Schedl 1958d: 189, 1962j: 404; Schimitschek 1964c: 178; Scott & DuToit 1970; Scott & van der Walt 1970; van der Walt & Scott 1971a. (**hb**) Browne 1961c: 144, 1963c: 245; Costa Lima 1956; Kalshoven 1963; Miller, N. C. E. 1941; Pollet 1977; Roberts 1977a: 264; Schedl 1962j: 404. (**ds**) Alluaud 1900: 238–242; Alvarenga 1962: 24; Anonymous 1970c: 14; Baer 1886: 147; Beaver 1976b: 542; Beeson 1935a, 1935b: 114, 1938b: 295, 1940: 200, 1941: 393; Blackwelder 1947: 779–780; Blandford 1898b: 196, 210–217; Brader 1964: 4; Brenier & Dubois 1965: 20, 84; Brimblecombe 1953: 36; Browne 1948: 892, 1961a, 1961b, 1961c: 144, 1963a: 245, 1974a: 65, 1975a: 760, 1975b: 395; Cleare 1924: 65–68, 1938: 237–245; Cola 1971, 1973; Costa Lima 1936: 359, 1956: 292; Dumbleton 1954: 28, 157; Ferreira 1965: 1126; Ferrer 1942; Fisher, Thompson, & Webb 1954: 3; Frappa 1933b; Froggatt 1936: 18; Gemminger & Harold 1872: 2686; Ghesquiere 1933a: 31–35, 1933b: 781–785; Hagedorn 1910d: 99, 112, 1913: 256; Jones, Roberts, & Webb 1959: 13; Kalshoven 1963: 236; Kirsch 1875: 284; Kleine 1912a: 162, 1913b: 163, 1914b: 301, 327, 337, 344, 354, 371–372, 378–379, 1928: 306, 1934a: 175; Kolbe 1910: 40; LePelley 1968: 146; Lepesme et al. 1948: 647; Lever 1943a: 82; Mayne & Donis 1951: 334; Menier 1973a; Murayama 1929b: 1–13, 1930b: 23–37, 1936a: 148, 1937b: 375, 1950d: 101, 1950e: 15–21, 1951c: 4–6, 1952b: 167–171, 1953a: 17–32, 1953c: 156, 1954b: 203, 210, 1961a: 98, 109; Nobuchi 1967: 23–24, 1978a: 41, 1979a: 407; Nonveiller 1984: 42; Nunberg 1956: 144; Pollet 1977; Roba 1935: 340; Roberts 1969: 133–134, 1977a: 264; Roonwal 1954: 87; Sampson 1914: 387; Schedl 1934f: 1645, 1938d: 451, 1938g: 427, 1938h: 462–463, 1939e: 332, 1939g: 170, 1941d: 380, 1941f: 114, 1942a: 170, 1942d: 7, 1943d: 70, 1950d: 9–15, 1950e: 211, 1950g: 893–895,

1951e: 39, 1951g: 1103, 1952g: 53, 1952j: 5, 1953c: 291, 1953g: 242, 1954d: 871, 1954e: 47–73, 1955c: 31, 1955f: 259, 1957a: 194, 1957b: 151, 1957c: 325, 1957d: 15–16, 102, 1958d: 189, 196, 1959a: 504, 1959p: 21, 1960a: 75, 1960f: 39, 1961c: 71, 1961d: 177, 1961j: 349, 1962b: 184, 1962h: 61, 65, 1962j: 404, 1962k: 1104–1105, 1962m: 62, 1962p: 209, 1963a: 32, 1963c: 160, 1963f: 63, 1963h: 267, 1963i: 482, 1964e: 69, 1964f: 618, 1964i: 248–249, 1965e: 356, 1965g: 21, 1966a: 276, 1966b: 73, 1966c: 229, 1966f: 76, 79, 1966g: 29–37, 1967d: 4, 1967e: 219, 1969d: 4–12, 1969h: 105, 1970d: 234, 1970e: 85, 1970h: 180, 1971e: 5, 1971f: 149, 1971g: 194, 1972e: 284, 1972g: 38, 1972k: 296, 1973a: 368, 1973d: 159, 1974e: 52, 1975h: 350–351, 1975k: 278, 1976a: 55, 1977b: 181, 1977d: 279, 1977e: 43, 1978c: 293, 1979b: 416, 1982: 279; Schimitschek 1964: 178; Schonherr & Pedrosa-Macedo 1981: 57; Schreiner 1882: 248; Tymchak 1977: 10; Wichmann 1954: 517–521; Wolcott 1936: 318, 1948: 382–383; Yunus & Hua 1980: 231. (**tx**) Beaver 1976: 28; Beeson 1930: 47–96, 1935a: 114, 1935b, 1940; Blandford 1894d: 55, 103, 116, 1896a: 20, 1896f: 243, 1898b: 196, 210–217; Costa Lima 1956: 292; Eggers 1924: 111, 1925: 154, 1927a: 195–196, 1927b: 406, 1933b: 3, 34, 1939c: 114, 1940a: 108, 1940c: 238, 1943a: 385, 1943c: 66; Eichhoff 1868c: 146, 1878b: 374–380, 482–483; Hagedorn 1910a: 152, 157; Hopkins 1915b: 65; Kirsch 1875: 284; Nobuchi 1978a: pl. 4, 1983: 304; Nunberg 1960: 294, 1962: 224, 1963b: 19–21, 1968: 272–273; Sampson 1914: 387; Schaufuss 1891: 27, 1897: 210; Schedl 1931c: 347, 1936d: 4, 1940a: 363–364, 1948d: 37, 1948f: 261, 1948g: 26, 1948h: 577–578, 1950c: 205, 1950f: 35, 40–41, 1950i: 147, 1951h: 285–286, 1951m: 74, 1952a: 444–445, 1952e: 123, 1952h: 71–72, 1953d: 70, 1955b: 278, 1958c: 1, 1962j: 404, 1977b: 181; Strohmeyer 1911: 17, 25; Wood, S. L. 1960a: 68–69; Wylie & Yule 1977.

alternans Eichhoff 1869: 280. Syntypes ♀; Santo Domingo; those in Hamburg Museum were lost, 1 is in IRSNB, Brussels. Synonymy: Eggers 1929e: 43.

Notes: (1) This variant is *volvulus* (s. str.).

References: (**ds**) Gemminger & Harold 1872: 2685; Hagedorn 1910d: 98; Kleine 1913b: 160, 1914b: 379; Pedrosa-Macedo & Schonherr 1985: 24. (**tx**) Eggers 1929e: 43; Eichhoff 1869a: 280, 1878b: 368; Hagedorn 1910a: 152; Pedrosa-Macedo & Schonherr 1985: 24; Schedl 1931c: 346, 1940a: 363, 1951m: 73; Wood, S. L. 1960: 68.

badius Eichhoff 1869a: 280. Syntypes ♀; St. Mauritius; Hamburg Museum, lost. Synonymy: Wood 1960a: 69.

References: (**cn**) Anonymous 1953j: 25; Cleare 1938: 237–245, 1939: 85–88; Fisher, Thompson, & Webb 1953; Ghesquiere 1933a; Mathur & Singh 1960a: 9; Mayne & Donis 1951: 334; Murayama 1954: 19; Roonwal 1954: 87; Shiraki 1952. (**ec**) Anonymous 1953j: 25; Mayne & Donis 1951: 334. (**hb**) Thompson, G. H. 1963:&0. (**ds**) Beeson 1940: 200, 1961: 303; Blackwelder 1947: 779; Blandford 1894c579, 1896f: 243; Bright 1985c: 174; Browne 1949b; Cho 1957, 1963; Fairmaire 1892b; Froggatt 1936; Gemminger & Harold 1872: 2685; Ghesquiere 1933a; Hagedorn 1910d: 99; Kleine 1913b: 160, 1914b: 260, 301, 315, 326, 378, 1934a: 172; Ko 1969: 284; Kolbe 1910: 40; Mathur & Singh 1960a: 9; Mayne & Donis 1960: 104, 1962: 315; Murayama 1929b: 2, 1930b: 22, 1931a: 48, 1936b: 114, 1937b: 375, 1949a: 102, 1951a: 4, 1952b: 167 1954a: 19, 1955: 99; Nunberg 1960a: 294, 1962: 224; Roonwal 1954: 87; Schedl 1938d: 451, 1938g: 427; Shiraki 1952; Thompson, G. H. 1963: 70. (**tx**) Blandford 1894d: 116; Bright 1985c: 174; Browne 1949b; Eggers 1927a: 195–196, 1940a: 108, 1940c: 238; Eichhoff 1869a: 280, 1878b: 379; Fairmaire 1892b; Hagedorn 1910a: 152, 1913b; Murayama 1930b: 22–26, 31, 1931a: 48–49, 1934c: 299, 1937b: 375, 1952b: 167, 1955: 99; Nunberg 1956a: 144, 1963b: 19, pl. 7; Schaufuss 1897a: 210; Schedl 1931c: 346, 1938d: 451, 1938g: 427, 1939e: 332, 355, 1939g: 170, 1939j: 565, 1941d: 380, 1942a: 170, 1942d: 7, 1950c: 205, 1950d: 9, 13, 15, 1950e: 211, 1950g: 895, 1951e: 39, 1951g: 1103, 1952e: 123, 1952g: 52–53, 1952j: 4–5, 1953c: 291, 1953d: 70, 1953g: 242, 1954d: 871, 1954e: 47, 51, 1955b: 278, 1955c: 31, 1955d: 268–271, 1955f: 259, 1957b: 151, 1957c: 325, 1957d: 15, 1958c: 1, 1962j: 404, 1966f: 76, 1979c: 32; Wood, S. L. 1960a: 69.

interstitialis Eichhoff 1878b: 375. Syntypes ♀; Mexico; Hamburg Museum, lost. Synonymy: Wood 1982b: 833.

References: (**ds**) Blackwelder 1947: 780; Blandford 1898b; Ferrer 1942; Hagedorn 1910d: 106; Kleine 1913b: 161, 1914b: 354. (**tx**) Blandford 1898b; Eichhoff 1878b: 375; Hagedorn 1910a: 154; Schedl 1940a: 361; Wood, S. L. 1982b: 833.

guanaguatensis Duges 1887: 141. Holotype ♀, Mexico, lost, Neotype ♀, America ligno Dom v. Rohr [presumably Cuba], UZMC, Copenhagen, designated by Wood 1983a: 650. Synonymy: Objective synonym of *volvulus*, Wood 1983a: 650.

References: (**ds**) Blackwelder 1947: 778; Blandford 1898b; Ferrer 1942; Hagedorn 1910d: 105; Kleine 1913b: 161, 1914b: 354. (**tx**) Blandford 1898b; Duges 1887: 140–141; Hagedorn 1910a: 154; Hopkins 1914: 116; Schedl 1940a: 361; Wood, S. L. 1983a: 650.

hubbardi Hopkins 1915b: 62, 65. Holotype ♀: Biscayne Bay, Florida; USNM, Washington. Synonymy: Schedl 1952k: 164.
Notes: (1) This variant is *volvulus* (s. str.).
References: (**ds**) Blatchley & Leng 1916: 619; Leng 1920: 342. (**tx**) Blatchley & Leng 1916: 619; Hopkins 1915b: 62, 65; Schedl 1952k: 164.

schwarzi Hopkins 1915b: 62, 65. Holotype ♀; Key West, Florida; USNM, Washington. Synonymy: Bright 1968b: 1318.
Notes: (1) This variant is *volvulus* (s. str.).
References: (**hb**) Chamberlin 1939: 453. (**ds**) Blatchley & Leng 1916: 620; Chamberlin 1939: 453; Leng 1920: 342. (**tx**) Blatchley & Leng 1916: 620; Bright 1968b: 1318; Chamberlin 1939: 453; Hopkins 1915b: 62, 65; Schedl 1948f: 277, 1963j: 481.

rileyi Hopkins 1915b: 65. Holotype ♀; Capron, Florida; USNM, Washington. Synonymy: Bright 1968b: 1318.
Notes: (1) This variant is *volvulus* (s. str.).
References: (**hb**) Chamberlin 1939: 452. (**ds**) Bright 1985c: 174; Chamberlin 1939: 452; Leng 1920: 342. (**tx**) Bright 1968b: 1318, 1985c: 174; Chamberlin 1939: 452; Hopkins 1915b: 65.

grenadensis Hopkins 1915b: 61, 65. Holotype ♀; Grenada, West Indies; USNM, Washington. Synonymy: Wood 1972e: 200.
Notes: (1) This variant is *volvulus* (s. str.).
References: (**cn**) Dinther 1961; Fisher 1920: 1–134; Snyder 1927: 13; Strong 1921: 331–335. (**ds**) Blackwelder 1947: 779; Leng & Mutchler 1917: 220; Martorell 1945: 471–472; Wolcott 1936: 318, 1948: 383. (**tx**) Hopkins 1915b: 61, 65.

silvestris Beeson 1929: 241. Holotype ♀; Samoa: Upolu, Mololelei; BMNH, London. Synonymy: Wood 1989: 177.
Notes: (1) This variant is *torquatus*.
References: (**cn**) Mathur & Singh 1961a: 66. (**ds**) Beeson 1938b: 294; Mathur & Singh 1961a: 66; Pedrosa-Macedo & Schonherr 1985: 39. (**tx**) Beaver 1976b: 542; Beeson 1929: 241; Pedrosa-Macedo & Schonherr 1985: 39; Schedl 1951k: 139, 1955b: 285; Wood, S. L. 1989: 177.

vagabundus Schedl 1948f: 277. Holotype ♀; Mexico; Schedl Collection in NHMW, Wien. Synonymy: Wood 1972e: 200.
Notes: (1) This variant is *volvulus* (s. str.).
References: (**tx**) Schedl 1948f: 277, 1952e: 123, 1979c: 263; Wood, S. L. 1972e: 200.

granularis Schedl 1950g: 898. Lectotype ♀; Brisbane, Australia ex imported Borneo Cedar; Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 177.
Notes: (1) This variant is *torquatus*.
References: (**tx**) Browne 1965: 253; Nobuchi 1983: 302; Schedl 1950g: 898, 1979c: 110; Wood, S. L. 1989: 177.

***vulcanus* Perkins** 1900: 179. Holotype ♂; Hawaii: Kilauea; BMNH, London.
Figures: Samuelson 1981: 60.
Distribution: Hawaiian Islands (Hawaii, Kauai, Lanai, Maui, Oahu).
Hosts: *Acacia koa*, *Elaeocarpus bifidus*, *Pelea* sp.
References: (**cn**) Seymour 1966a. (**hb**) Beaver 1976a: 28. (**ds**) Baker, W. L. 1972: 271; Beaver 1976a: 28; Beeson 1938b: 294; Hagedorn 1910d: 112; Kleine 1913b: 163, 1914b: 302; Samuelson 1981: 90; Schedl 1963c: 160; Wood, S. L. 1960a: 51. (**tx**) Hagedorn 1910a: 157; Perkins 1900: 179; Samuelson 1981: 60, 90; Wood, S. L. 1960: 51, 1966b: 32.

truncatus Sharp 1885: 192. Holotype ♀; Oahu; BMNH, London, preoccupied by Erichson 1842. Synonymy: Wood 1966b: 32.
References: (**ds**) Beeson 1938b: 294; Hagedorn 1910d: 112; Kleine 1914b: 302; Swezey 1941: 122, 1954: 14. (**tx**) Hagedorn 1910a: 157; Nunberg 1959a: 432; Perkins 1900: 175; Schedl 1941f: 112, 1958k: 152; Sharp 1892: 192; Wood, S. L. 1966b: 32; Zondag 1977.

adspersus Schedl 1958k: 152. Holotype ♀; Oahu; BMNH, London, automatic. Synonymy: Wood 1966b: 32.
Notes: (1) This is an unneeded replacement name.
References: (**tx**) Schedl 1958k: 152, 1979c: 257; Wood, S. L. 1966b: 32.

pacificus Nunberg 1959a: 432. Holotype ♀; Oahu; BMNH, London, automatic. Synonymy: Wood 1966b: 32.
Notes: (1) This is an unneeded replacement name.
References: (**tx**) Nunberg 1959a: 432; Wood, S. L. 1966b: 32.

***wakayamensis* Nobuchi** 1981d: 144. Holotype ♀; Shionomisaki, Wakayama; Nobuchi Collection, Ibaraki.
Distribution: Asia (Japan).
Hosts: *Castanopsis cuspidata*, *Quercus phillyraeoides*.
References: (**tx**) Nobuchi 1981d: 144, 153.

***xanthophyllus* Schedl** 1942a: 195. Lectotype ♀; Malaya: Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 270.
Distribution: Asia (Malaya).
Hosts: *Iranum xanthophyllum*.
References: (**hb**) Browne 1961c: 106. (**tx**) Schedl 1942a: 195, 1955b: 278–279, 1979c: 270.

***xylographus* (Say)** 1826: 256 (*Bostrichus*). Holotype ♀, Pennsylvania [USA], lost, Neotype ♀, North Carolina [USA], CNCI, Ottawa, designated by Bright 1968b: 1313.
Figures: Bright 1976d: 133, Nunberg 1959a:pl. 23, figs. 3–4.
Distribution: Antilles Islands (Cuba/ Guadeloupe/ Puerto Rico), North America (British Columbia,

Ontario, Quebec in Canada/ Arkansas, California, District of Columbia, Florida, Georgia, Illinois, Indiana, Iowa, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oregon, Pennsylvania, South Carolina, Virginia, West Virginia, Wisconsin in USA).

Hosts: *Quercus* spp., rare in other hosts.

Notes: (3) Many citations of this name published prior to Wood 1960b: 68 are to *Xyleborinus saxeseni*, a species that was thought by some workers to be the male of *xylographus* Say; some of these have the word "error" written after the citation below. Specimens from British Columbia to California were thought to be errors in labeling, but are now known to represent introductions to that area.

References: (**ay**) Hopkins 1894g. (**bv**) Kalshoven 1962a: 13; Meixner 1937: 1219; Roling & Kearby 1975b, 1977. (**cn**) Bremner 1907: 195; Brock 1915: 285 (error); Chamberlin 1917: 356, 1918: 377 (error), 1924; Doane et al. 1936; Ebeling 1950, 1959; Ebeling & Pence 1953: 31–32 (error); Fall & Cockerell 1907: 217; Felt 1926a: 247–248, 277, 1930a: 247–248, 278; Graham 1939b; Harrington 1881: 32; Herrick 1935: 179; Hopkins 1899: 358; Horn, Essig, & Herms 1923: 10 (error); Hubbard 1896: 318, 1897b: 24–26; Keen 1929: 56; Kowal 1949a: 13; Lintner 1896: 270; Lugger 1899: 311–314; Ormerod 1898: 270; Packard 1881: 163–166, 1890: 711; Roling & Kearby 1977; Saunders 1884: 55; Seaver 1921: 770; Skinner 1905: 248; Smith, J. B. 1900: 363; Snyder 1927: 9; Swaine 1918a: 126–127; Washburn 1903: 60, 82, 91; Weldon 1915: 285 (error), 1918: 377 (error); Wichmann 1927b: 374. (**ec**) Graham 1939b; Hubbard 1896: 318; Peplinski & Merrill 1974; Roling & Kearby 1977; Rumbold 1931c: 849; Skelly 1966: 902, 1968: 1541; Steinhaus 1946: 404, 1949: 92; Verrall 1943: 142; Webb 1945: 64; Wertz, Skelly, & Merrill 1971. (**hb**) Baker, W. L. 1972: 270; Beal & Massey 1945: 153–154; Bright 1976d: 137; Chamberlin 1939: 451–452; Chittenden 1890; Deyrup & Atkinson 1987a: 65; Doane et al. 1936; Ebeling 1950; Felt 1926: 247–248, 277, 1930a: 247–248, 278; Graham 1939b; Herrick 1935: 179; Hopkins 1894g: 278; Hubbard 1897a: 426, 1897b: 24; Kalshoven 1962: 13; Keen 1929: 56; Lengerken 1954: 312; Negru & Pirvescu 1966: 149; Packard 1890: 711; Saunders 1883: 325, 1884: 55; Skinner 1905: 248; Swaine 1918a: 126–127; Wichmann 1927b: 374; Wood, S. L. 1982b: 836. (**ds**) Anonymous 1926c: 520; Baker, W. L. 1972: 270; Beal & Massey 1945: 153–154; Blatchley & Leng 1916: 621; Bright 1968b: 1313, 1976d: 137, 1985c: 174; Chamberlin 1925, 1939: 451–452; Chittenden 1890; Cockerell et al. 1907; Deyrup 1981: 7; Deyrup & Atkinson 1987a: 65; Dodge 1938; Dozier 1918: 374 (error); Drooz 1985: 374; Ebeling 1950, 1959; Escalera 1919; Everts 1922: 648; Felt 1926: 247–248, 277, 1930a: 247–278; Frost 1964: 144; Gemminger & Harold 1872: 2686; Hagedorn 1910d; Hamilton 1889: 158, 1894b: 406, 1895: 346–378; Henshaw 1885: 148; Hopkins 1893a: 136; Hopping 1922; Hubbard & Schwarz 1878a: 666; Keen 1929: 41, 56; Kirk 1969, 1970; Kleine 1913b: 163, 1934a: 176; Leng 1920: 342; Leonard 1928: 520; Melsheimer 1806: 8, 1853: 87; Negru 1966b: 403; Negru & Pirvescu 1966: 149; Negru & Rosca 1967: 141; Schedl 1959r: 43, 1961b: 184; Schwarz 1878d: 468, 666, 1886: 41, 45; Smith, J. B. 1900: 363, 1910: 402; Swaine 1909: 157; Winter, T. G. 1983: 28; Wood, S. L. 1957c: 403, 1977a: 73, 1982b: 836. (**tx**) Balachowsky & Mesnil 1935: 28; Beal & Massey 1945: 153–154; Benoit 1985: 284; Blatchley & Leng 1916: 621; Bright 1968b: 1313, 1976d: 133, 137, 1985c: 174; Chamberlin 1939: 451–452; Dodge 1938: 13, 54; Eichhoff 1878b: 369, 1896: 608, 1910a: 157; Fitch 1857: 716–720; Everts 1922: 648; Hagedorn 1910a: 157; Hopkins 1915b: 62; Hubbard 1897b: 24–26; Jacques 1951: 353; Keen 1929: 41; LeConte 1868: 160, 1876: 359–360, 1878a: 468; Meixner 1937: 1219; Negru 1966b: 403; de Ruette 1970: 98; Say 1826: 318; Schedl 1955: 256, 1957b: 150–151 (error), 1959r: 43 (error), 1960e: 173 (error), 1960g: 11 (error), 1963i: 63; Schedl, Lindberg, & Lindberg 1959: 25 (error); Schwarz 1886: 41–42, 45, 1889b: 149; Stresemann et al. 1989: 353; Swaine 1909: 157, 1917: 23–24, 1918a: 126–127; Wood, S. L. 1957c: 403, 1960b: 68, 1970: 98; Zimmermann 1868: 145.

inermis Eichhoff 1868a: 401. Holotype ♀; Cuba; Hamburg Museum, lost. Synonymy: Eichhoff 1878b: 370.

References: (**cn**) Doane et al. 1936; Hubbard 1897b: 22. (**hb**) Chamberlin 1939: 451; Doane et al. 1936; Hopkins 1905a: 383; Hubbard 1897b: 20. (**ds**) Blackwelder 1947: 780; Blatchley & Leng 1916: 628; Chamberlin 1939: 451; Gemminger & Harold 1872: 2686; Hagedorn 1910d: 106; Kleine 1913b: 161, 1914b: 378, 394, 1934a: 173; Leng 1920: 342; Leng & Mutchler 1917: 220; Martorell 1945: 471–472; Smith, J. B. 1910: 402; Swaine 1909: 154; Wolcott 1958: 383. (**tx**) Blandford 1898b: 217; Blatchley & Leng 1916: 618; Bright 1968b: 1313; Chamberlin 1939: 451; Eggers 1922c: 12–18; Eichhoff 1868a: 401, 1876: 609, 1878b: 370–372; Hagedorn 1910a: 154; Hopkins 1915b: 61, 64; Hubbard 1897b: 20–22; Nunberg 1959a: 429; Schedl 1940a: 363, 1952d: 347, 1952k: 162–163, 1963i: 63; Swaine 1909: 154–155, 1917: 24, 1918a: 127.

canadensis Swaine 1917: 24. Lectotype ♀; Isle Perrot, Quebec [Canada]; CNCI, Ottawa, designated by Bright 1976b: 680. Synonymy: Wood 1957c: 403.

References: (**cn**) Chamberlin 1924; Doane et al. 1931; Swaine 1918a: 126–127. (**hb**) Chamberlin 1939: 455; Doane et al. 1936; Swaine

1918a: 126–127. (**ds**) Beaulne 1956; Chamberlin 1939: 455; Kleine 1934a: 172; Leng 1920: 342. (**tx**) Bright 1967b: 680; Chamberlin 1939: 455; Hoebeke 1978; de Ruette 1970: 114; Schedl 1951i: 51, 1955b: 297, 1962j: 498; Swaine 1917: 24, 1918a: 126–127; Wood, S. L. 1957c: 403.

***xyloteroides* Eggers** 1939c: 120. Holotype ♀; Formosa (Kahodai); Chujo Collection.
Distribution: Asia (Taiwan).
References: (**ds**) Nobuchi 1967: 24. (**tx**) Eggers 1939c: 120–121.

***xylotrupes* Schedl** 1962j: 311. Holotype ♀; Congo Belge: Yangambi; Schedl Collection in NHMW, Wien.
Distribution: Africa (Zaire).
Hosts: *Microcos pinnatifida*.
References: (**cn**) Schedl 1962j: 311. (**tx**) Schedl 1962j: 311, 1979c: 270.

Genus *Taurodemus* Wood

TAURODEMUS WOOD 1980c: 96. Type-species: *Xyleborus sharpi* Blandford, original designation.
Keys: Wood 1982b: 778 for North and Central America.
References: (**hb**) Wood, S. L. 1986a: 83. (**ds**) Wood, S. L. 1986a: 83. (**tx**) Wood, S. L. 1980c: 96, 1986a: 83.

***bicornutus* (Wood)** 1974a: 33 (*Xyleborus*). Holotype ♀; 17 km SE Miri, Barinas, Venezuela; Wood Collection.
Distribution: South America (Colombia/ Venezuela).
Hosts: *Brownia* sp., *Hirtella trianda*, *Inga* sp., *Nectandra* sp., *Protium* sp., *Rheedia madruno*.
References: (**tx**) Wood, S. L. 1974a: 33.

***ebenus* (Wood)** 1971: 39 (*Xyleborus*). Holotype ♀; Guapiles, Limon Prov., Costa Rica; Wood Collection.
Distribution: North America (Costa Rica/ Panama), South America (Colombia).
Hosts: *Pouteria* sp., *Protium nervosum*, *Theobroma cacao*.
References: (**tx**) Wood, S. L. 1971: 39, 1982b: 793.

***flavipes* (Fabricius)** 1801: 388 (*Bostrichus*). Syntypes 3 ♀; America meridionali; UZMC, Copenhagen.
Distribution: South America (Venezuela).
Hosts: *Alex imperatricia*, *Parinari excelsa*, *Protium* sp.
References: (**ds**) Blackwelder 1947: 779; Gemminger & Harold 1872: 2690; Hagedorn 1910d: 54; Kleine 1913b: 128. (**tx**) Eggers 1929e: 42, 44, 1931c: 19, 1933g: 19–20; Fabricius 1801: 388; Hagedorn 1910a: 104; Panzer 1799: 61, no. 9.

***godmani* (Blandford)** 1898b: 197 (*Xyleborus*). Holotype ♀; Bugaba, Chiriqui, Panama; BMNH, London.
Figures: Nunberg 1959a:pl. 21, figs. 7–8.
Distribution: North America (Costa Rica/ Panama).
Hosts: *Vismia* sp., etc.
References: (**ds**) Blackwelder 1947: 779; Hagedorn 1910d: 105; Kleine 1914b: 371. (**tx**) Blandford 1898b: 195–197; Hagedorn 1910a: 152; Nunberg 1959a: 426; Wood, S. L. 1972e: 198.

caelebs Blandford 1898b: 198. Holotype ♂; Volcan de Chiriqui, Panama; BMNH, London.
Synonymy: Wood 1972e: 198.
References: (**ds**) Blackwelder 1947: 779; Hagedorn 1910d: 99; Kleine 1913b: 160, 1914b: 371. (**tx**) Blandford 1898b: 195, 198; Hagedorn 1910a: 152; Wood, S. L. 1972e: 198.

***pandulus* (Wood)** 1974a: 34 (*Xyleborus*). Holotype ♀; Fort Clayton, Canal Zone, Panama; Wood Collection.
Distribution: North America (Costa Rica/ Panama).
Hosts: *Theobroma cacao*.
References: (**tx**) Wood, S. L. 1974a: 34, 1982b: 791.

***perebeae* (Ferrari)** 1868: 252 (*Amphicranus*). Holotype ♀; Colombia; NHMW, Wien, lost?
Figures: Terra 1987: 24.
Distribution: North America (Costa Rica/ Guatemala/ Panama), South America (Brazil/ Colombia/ Venezuela).
Hosts: *Coffea robusta*, *Crotolaria* sp., *Liriosma singularis*, *Miconia* sp., *Ochroma* sp., *Perebea integrifolia*, *Psidium guava*, *Qualea ingens*, *Theobroma cacao*.
Notes: (3) Blandford 1898b: 200 (cited in *Xyleborus*).
References: (**ec**) Wichmann 1955a: 97. (**hb**) Beaver 1976a: 25. (**ds**) Atkinson & Equihua 1986a: 421; Beaver 1976a: 25; Blackwelder 1947: 780; Gemminger & Harold 1872: 2692; Hagedorn 1910d: 108; Kleine 1913b: 162, 1914b: 343; Schedl 1960a: 78, 1966f: 89, 1972g: 45, 1973d: 158; Terra 1987: 22; Wichmann 1955a: 97. (**tx**) Blandford 1898b: 200; Eggers 1929c: 44, 1933g: 20; Eichhoff 1878b: 470; Ferrari 1868: 252–253; Hagedorn 1910a: 155; Nordlinger 1868: 276; Terra 1987: 24; Wood, S. L. 1982b: 789–790.

***ruber* (Eichhoff)** 1868c: 145 (*Xyleborus*). Holotype ♀; Brasil int. [America meridionalis (Brasilia interior) in Eichhoff 1878b: 344]; Hamburg Museum, lost.
Distribution: South America (Brazil).
Notes: (3) This could be a senior synonym of *splendidus* Schaufuss.
References: (**ds**) Blackwelder 1947: 780; Gemminger & Harold 1872: 2686; Hagedorn 1910d: 110; Kleine 1914b: 337. (**tx**) Eichhoff 1868c: 145, 1878b: 344; Hagedorn 1910a: 156.

***salvini* (Blandford)** 1898b: 200 (*Xyleborus*). Lectotype ♀; Volcan de Chiriqui, Panama; BMNH, London, designated by Wood 1982b: 790.
Figures: Lara & Schenfelt 1965: 172, 176.

Distribution: North America (Costa Rica/ Panama).
Hosts: *Conostegia oerstediana*, etc.
References: (**hb**) Lara & Shenefelt 1965: 171, 173. (**ds**) Blackwelder 1947: 780; Hagedorn 1910d: 110; Kleine 1914b: 371. (**tx**) Blandford 1898b: 200; Hagedorn 1905a: 415, 1910a: 156; Lara & Shenefelt 1965: 172–173, 176; Wood, S. L. 1982b: 790.

***sanguinicollis* (Blandford)** 1898b: 198 (*Xyleborus*). Holotype ♀; Bugaba, Chiriqui, Panama; BMNH, London.
Distribution: North America (Pacific slope of Costa Rica/ Panama).
Hosts: *Vismia* sp., etc.
References: (**ds**) Blackwelder 1947: 780; Hagedorn 1910d: 110; Kleine 1914b: 371. (**tx**) Blandford 1898b: 195, 198–199; Hagedorn 1910a: 156; Wood, S. L. 1982b: 793.

***sharpi* (Blandford)** 1898b: 199 (*Xyleborus*). Lectotype ♀; Paraiso [Canal Zone, Panama]; BMNH, London, designated by Wood 1982b: 792.
Figures: Atkinson & Aquihua 1988: 103, Blandford 1898b:pl. 7, Lara & Shenfelt 1965: 172, 176.
Notes: (1) Blandford 1898b: 199 recorded this type from Paraiso, Guatemala; this error should be corrected to Paraiso, Panama. Wood 1982b: 792 (subspecies established).
References: (**ds**) Atkinson & Equihua 1986a: 421, 1988: 102; Blackwelder 1947: 780; Ferrer 1942; Hagedorn 1910d: 111; Kleine 1913b: 163, 1914b: 354, 371; Lara & Shenefelt 1965: 171, 173. (**tx**) Atkinson & Equihua 1988: 103; Blandford 1898b: 199–200; Hagedorn 1910a: 156; Lara & Shenefelt 1965: 172, 176; Schedl 1940a: 361; Wood, S. L. 1982b: 792.

sharpi sharpi:
Distribution: North America (Atlantic slope in Costa Rica/ Panama).
Hosts: *Terminalia* sp., *Theobroma cacao*.
Notes: Wood 1982b: 792 (subspecies established).
References: (**tx**) Blandford 1898b: 199; Wood, S. L. 1982b: 792.

***sharpi lenis* Wood** 1974a: 35. Holotype ♀; 29 km E Coatzocoalcos, Veracruz, Mexico; Wood Collection.
Distribution: North America (Chiapas, Oaxaca, Veracruz in Mexico).
Hosts: Tree limbs.
References: (**tx**) Wood, S. L. 1974a: 35, 1982b: 792.

***splendidus* (Schaufuss)** 1897: 111 (*Xyleborus*). Holotype ♀; Amazonas; Hamburg Museum, lost.
Distribution: Antilles Islands (Trinidad), South America (Brazil/ Cayenne/ Venezuela).
Hosts: *Brownia* sp., *Guatteria* sp., *Ocotea guianensis*, *Parinari excelsa*, *Pouteria* sp., *Pseudoolmedia laevigata*, *Theobroma cacao*.
Notes: (3) This could be a junior synonym of *ruber*; more research is needed.
References: (**hb**) Beaver 1976a: 27. (**ds**) Beaver 1976a: 27; Blackwelder 1947: 780; Hagedorn 1910d: 111; Kleine 1913b: 163, 1914b: 337; Nunberg 1976a: 27. (**tx**) Anderson, W. H. & Anderson 1971: 31; Eggers 1929e: 49, 1933b: 2; Hagedorn 1910a: 156; Nunberg 1959a: 440; Schaufuss 1897b: 111.

camopinus Hagedorn 1903b: 549 (*Xyleborus*). Syntypes ♀; Camopi Guyanae; Hamburg Museum, lost. Synonymy: Eggers 1929e: 49.
References: (**ds**) Hagedorn 1910d: 99; Kleine 1913b: 160, 1914b: 339. (**tx**) Eggers 1929e: 49, 1933b: 2; Hagedorn 1903b: 549, 1910a: 152.

***varians* (Fabricius)** 1801: 386 (*Bostrichus*). Syntypes 5 ♀; published as America meridionali, types labeled Essequibo [Guyana]; UZMC, Copenhagen.
Figures: Nunberg 1959a:pl. 30, figs. 3–4.
Distribution: Antilles Islands (Trinidad), South America (Brazil/ Cayenne/ Guyana/ Suriname/ Venezuela).
Hosts: *Paritricia excelsa*, *Pseudoolmedia laevigata*, *Theobroma cacao*.
References: (**hb**) Beaver 1976a: 27. (**ds**) Beaver 1976a: 27; Blackwelder 1947: 780; Gemminger & Harold 1872: 2692; Hagedorn 1910d: 62; Kleine 1913b: 128; Schedl 1967d: 4, 1971f: 150. (**tx**) Eggers 1929e: 42, 44, 1933b: 2; Fabricius 1801: 386; Ferrari 1867a: 47; Hagedorn 1910a: 106; Nunberg 1959a: 443.

serratus Fabricius 1801: 388 (*Bostrichus*). Syntypes 2 ♂; America meridionali, types labeled Essequibo [Guyana]; UZMC, Copenhagen. Synonymy: Eggers 1929e: 42.
References: (**ds**) Gemminger & Harold 1872: 2691; Hagedorn 1910d: 58; Kleine 1913b: 128. (**tx**) Eggers 1929e: 42; Fabricius 1801: 388; Hagedorn 1910a: 105.

unidentatus Fabricius 1801: 386 (*Bostrichus*). Syntypes 3 ♀; published as America meridionali, types labeled Essequibo [Guyana]; UZMC, Copenhagen. Synonymy: Eggers 1929e: 42.
References: (**tx**) Eggers 1929e: 42; Fabricius 1801: 386.

insignis Eichhoff 1869a: 282 (*Xyleborus*). Holotype ♀; Cayenne; IRSNB, Brussels. Synonymy: Eggers 1933b: 2.
References: (**ds**) Gemminger & Harold 1872: 2686; Hagedorn 1903b: 546, 1910d: 106; Kleine 1913b: 161, 1914b: 339. (**tx**) Eggers 1929e: 44, 1933b: 2; Eichhoff 1869a: 282, 1878b: 341; Hagedorn 1903b: 546, 1910a: 152; Nunberg 1959a: 443; Schaufuss 1897b: 112.

perversus Hagedorn 1905a: 414 (*Xyleborus*). Holotype ♂; Guiana; MNHN, Paris. Synonymy: Beeson note written in his reprint while at MNHN, Paris, prior to 1950.
Notes: Beeson saw the type and wrote a note

of synonymy in his reprint in Wood Reprint Collection.

References: (**ds**) Hagedorn 1910d: 108; Kleine 1913b: 162, 1914b: 339. (**tx**) Eggers 1929e: 44, 1933b: 3; Hagedorn 1905a: 414, 1910a: 152.

***varulus* (Wood)** 1974a: 35 (*Xyleborus*). Holotype ♀; 13 km SW El Vigia, Merida, Venezuela; Wood Collection.

Distribution: South America (Colombia/Venezuela).

Hosts: *Inga* sp., *Protium nervosum*.

References: (**tx**) Wood, S. L. 1974a: 35.

Genus *Xylosandrus* Reitter

XYLOSANDRUS REITTER 1913a: 80, 83. Type-species: *Xyleborus morigerus* Blandford, monobasic.

Apoxyleborus Wood 1980c: 90. Type-species: *Xyleborus mancus* Blandford, original designation. Synonymy: Wood 1984b: 229.

References: (**tx**) Wood, S. L. 1980c: 90, 1984b: 229.

Keys: Wood 1982b: 765 for North and Central America.

References: (**ay**) Francke-Grosmann 1957: 139–144; Nobuchi 1969a: 63. (**hb**) Browne 1961c: 165; Wolfenbarger 1948: 260, 1958: 1–51; Wood, S. L. 1982b: 764, 1986a: 83. (**ds**) Schedl 1966b: 77; Scheerpeltz & Winkler 1930: 257; Wood, S. L. 1982b: 764, 1986a: 83. (**tx**) Arnett 1960: 1044, 1968: 1044; Balachowsky 1949: 219; Bright 1968b: 1292; Browne 1963c: 54; Choo 1983: 97; Choo, Woo, & Nobuchi 1988b; Nobuchi 1981e; Reitter 1913a: 80, 83–84; Schedl 1977b: 219; Wood, S. L. 1982b: 764, 1986a: 83.

***abruptoides* (Schedl)** 1955b: 298 (*Xyleborus*). Holotype ♀; Fiji: Viti Levu, Navai Mill, near Nandarivatu; BPBM, Honolulu.

Distribution: Fiji Islands.

Notes: (1) Browne 1963c: 55 (to *Xylosandrus*).

References: (**tx**) Browne 1963c: 55; Schedl 1955b: 284, 298, 1959c: 8.

***abruptulus* (Schedl)** 1953f: 81 (*Xyleborus*). Lectotype ♀; Wongabel, Australia; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 9.

Distribution: Australia (Queensland).

Hosts: *Loranthus* sp.

Notes: (1) Schedl 1964k: 213 (to *Xylosandrus*).

References: (**cn**) Browne 1968b: 720. (**hb**) Browne 1968b: 720. (**ds**) Brimblecombe 1953: 27; Browne 1968: 720. (**tx**) Schedl 1953f: 81, 1964k: 213, 1979c: 9.

***adherescens* Schedl** 1971c: 375. Holotype ♀; Hui (?), Chuo Chan [Tonkin]; Schedl Collection in NHMW, Wien.

Distribution: Asia (Tonkin Island in Vietnam).

References: (**tx**) Schedl 1971c: 375–376, 1979c: 12.

***arquatus* (Sampson)** 1912: 246 (*Xyleborus*). Holotype ♀; BMNH, London.

Distribution: Asia (Sri Lanka).

Hosts: *Cinnamomum* spp., *Symplocos loha*.

Notes: (1) Schedl 1964k: 213 (to *Xylosandrus*).

References: (**cn**) Hutson 1937: 22–28; Rutherford 1914: 463–468; Speyer 1923: 17. (**ds**) Beeson 1930: 227; Bhasin, Roonwal, & Singh 1958; Kleine 1913b: 160, 1914b: 274, 1934a: 172; Schedl 1959a: 494. (**tx**) Beeson 1930: 227; Sampson 1912: 246; Schedl 1934d: 88, 1959a: 494, 1964k: 213, 1979c: 26.

***assequens* Schedl** 1971c: 376. Holotype ♀; Malaya, Kelantan, Bukit Kabong; BMNH, London.

Distribution: Asia (Malaya).

Hosts: *Xanthophyllum* sp.

References: (**ds**) Schedl 1971c: 366, 376.

***ater* (Eggers)** 1923a: 210 (*Xyleborus*). Holotype ♀; Batoe Insel (Tanah Masa); Natura Artis Magistra, Amsterdam (Kalshoven 1960d: 63 gives RNH, Leiden).

Figures: Nunberg 1978: 109.

Distribution: Asia (Fujian in China/ Malaya), Indonesia (Batoe Island, Borneo).

Hosts: *Adenanthera pavonina*, *Artocarpus* sp., *Cinnamomum* sp., *Dehaasia cuneata*, *Dryobalanops oblongifolia*, *Grewia latifolia*, *Palaquium stellatum*, *Pometia pinnata*, *Shorea bracteolata*, *S. leprosula*, *S. sumatrana*, *Swietenia macrophylla*, *Vitex pubescens*.

References: (**hb**) Browne 1961c: 110. (**ds**) Browne 1961c: 110. (**tx**) Eggers 1923a: 210; Kalshoven 1960d: 63–64; Nunberg 1978: 108–109; Schedl 1960e: 172, 1972q: 258.

retusiformis Schedl 1936j: 31 (*Xyleborus*). Holotype ♀; Borneo; Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 177.

References: (**ds**) Schedl 1936j: 31. (**tx**) Schedl 1962p: 207–208, 1972q: 258, 1979c: 211; Wood, S. L. 1989: 177.

***borealis* Nobuchi** 1981e: 34. Holotype ♀; Honshu, Kyushu (Japan); Nobuchi Collection, Ibaraki.

Figures: Nobuchi 1981e:figs 11–12.

Distribution: Asia (Japan/ Korea).

Hosts: *Camellia sasangua*, *Styrax obassia*.

References: (**ds**) Choo 1983: 97; Choo & Woo 1985: 165; Choo, Woo, & Nobuchi 1983: 172; Nobuchi 1985c: 22. (**tx**) Choo 1983: 97; Nobuchi 1981e: 34, figs. 11–12.

***brevis* (Eichhoff)** 1877a: 121 (*Xyleborus*). Syntypes ♀; Nipon and Nipon insula Asiatica; IRSNB, Brussels (?).

Figures: Nakane et al. 1963:pl. 192, Nobuchi 1981e:figs. 1–4.

Distribution: Asia (Xizang [Tibet] in China/ Japan/ Korea/ Taiwan/ Thailand).

Hosts: *Berberis* sp., *Camellia japonica*, *C. sasangua*, *Cinnamomum japonicum*, *Diospyros kaki*, *Grevillia* sp., *Hamamelis* sp., *Lindera* spp., *Machilus thunbergii*, *Maesa tenera*, *Meliosoma cuneifolia*, *Parabenzoin praecox*, *Quercus* spp., *Smilax china*, *Styrax obassia*, *Viburnum* sp., *Weigela hortensis*.

References: (**cn**) Anonymous 1980g; Green 1912a: 38; Mathur & Singh 1960b: 25; Murayama 1954a: 22; Shiraki 1952; Ueno 1960. (**ds**) Anonymous 1980g; Beaver & Browne 1975: 302; Blandford 1894c: 579; Cho 1957, 1963; Choo 1983: 97; Choo & Woo 1985: 165; Choo, Woo, & Nobuchi 1983: 172, 1988a: 134; Green 1912a: 38; Hagedorn 1910d: 99; Kleine 1913b: 160, 1914b: 260, 1934a: 172; Ko 1969: 287; Mathur & Singh 1960b: 25; Murayama 1929b: 2, 1930b: 19, 1931a: 42, 1936a: 131, 1937b: 375, 1953a: 17, 1953c: 156, 1954a: 22, 1954b: 176, 1955: 99, 102; Nakane et al. 1963: 383; Nobuchi 1967: 20, 1981e: 29, 1985c: 22; Shiraki 1952; Yin & Huang 1981: 567; Yin, Huang, & Li 1984: 181. (**tx**) Blandford 1894d: 104; Browne 1965a: 205; Choo 1983: 97; Eggers 1923a: 190; Eichhoff 1877a: 121, 1878b: 319–320; Green 1912a: 38; Hagedorn 1910a: 152, 1910b; Murayama 1930b: 19–23, 1931a: 41–43, 1936a: 131, 1937b: 375, 1953a: 17, 1954b: 176, 1955: 99, 102; Nakane et al. 1963: 383; Nobuchi 1981e:figs. 1–4; Schedl 1934f: 1645; Yin & Huang 1981: 567; Yin, Huang, & Li 1984: 181.

cucullatus Blandford 1894d: 121 (*Xyleborus*). Syntypes ♂; Kurigahara, and Konose in Higo, Japan; BMNH, London. Synonymy: Murayama 1954: 176.

References: (**ds**) Hagedorn 1910d: 101; Kleine 1913b: 160, 1914b: 260. (**tx**) Blandford 1894d: 121; Hagedorn 1910a: 153; Murayama 1954: 176.

***butamali* (Beeson)** 1930: 216 (*Xyleborus*). Syntypes 5 ♀; Bombay: Agsur, South Kanara, and Dandeli, North Kanara; FRI, Dehra Dun.

Figures: Chandra 1981: 287, Kumar & Chandra 1977: 41 (male).

Distribution: Asia (Maharashtra, Tamil Nadu in India).

Hosts: *Careya arborea*, *Dillenia pentagyna*, *Dipterocarpus indicus*, *Tectona grandis*, *Terminalia tomentosa*, *Vateria indica*.

Notes: (3) Kumar & Chandra 1977: 33 (described male).

References: (**cn**) Chandra 1981: 287; Mathur & Singh 1961b: 14. (**ec**) Chatterjee & Chatterjee 1951. (**hb**) Chandra 1981: 287; Chatterjee & Chatterjee 1951. (**ds**) Beeson 1930: 216–217; Chatterjee & Chatterjee 1951; Mathur & Singh 1961b: 14. (**tx**) Beeson 1930: 216–217; Chandra 1981: 287; Kumar & Chandra 1977: 33, 41; Schedl 1979c: 49.

***compactus* (Eichhoff)** 1875: 201 (*Xyleborus*). Syntypes ♀; Japan; those in Hamburg Museum, lost, 1 in Schedl Collection in NHMW, Wien.

Figures: Lhost & Roche 1960:fig. 5, Nobuchi 1964: pl. 192, Samuelson 1981: 54, Schedl 1962j: 111.

Distribution: Africa (Cameroon/ Grande Comoro in Comoro Islands/ Equatorial Guinea/ Fernando Poo/ Gabon/ Ghana/ Ivory Coast/ Liberia/ Mauritania/ Nigeria/ Senegal/ Seychelles Islands/ Sierra Leone/ South Africa/ Tanzania/ Uganda), Antilles Islands (Cuba/ Virgin Islands), Asia (Bonin Islands/ Guangdong in China/ Tamil Nadu in India/ Japan/ Malaya/ Ryukyu Islands/ Sri Lanka/ Taiwan/ Thailand/ Tonkin Island in Vietnam), Fiji Islands, Hawaiian Islands, Indonesia (Borneo, Celebes, Java, Sumatra), Madagascar, North America (Alabama, Florida, Louisiana, Mississippi, E Texas in USA), New Zealand, Philippine Islands, Reunion Island, Samoan Islands, South America (Brazil).

Hosts: Many listed by Browne 1961c: 169, Samuelson 1981: 54, Schedl 1962: 153–156. *Acalypha* sp., *Acer* sp., *Camellia sinensis*, *Cinnamomum camphora*, *Coffea arabica*, *Gossypium* sp., *Jacobina* sp., *Olea europea*, *Persea* sp., *Quercus myrsinaefolia*, *Rhizophora* sp.

References: (**ay**) Entwistle 1964: 183; Murayama & Kalshoven 1962; Sekhar & Sekhar 1964; Takagi & Okitsu 1966: 5; Takenouchi & Takagi 1967: 105–110. (**bv**) Atkinson, Foltz, & Connor 1988; Aulmann 1911; Gopinath 1967a, 1984; Gray, B. 1974c. (**cn**) Alibert 1951; Anonymous 1962r, 1963p, 1964h, 1964k, 1964t, 1965d, 1965e, 1965q, 1966f, 1966j, 1966p, 1966t, 1967f, 1967i, 1967k, 1967s, 1968i, 1968n, 1968p, 1969g, 1969k, 1970h, 1970n, 1970r, 1971m, 1971u, 1971v, 1972j, 1972s, 1973e, 1973h, 1974j, 1975i, 1975s, 1975t, 1976b, 1976c, 1976e, 1976i, 1977j, 1977q, 1978d, 1979d, 1979n, 1980g, 1985, 1987; Anstead 1920: 179; Appanna 1946; Baldwin, J. G. 1977: 10; Ballard 1921; Barrett 1966: 88–89; Beardsley 1964; Beaver 1988a: 67; Bhat 1987; Bouriquet 1963: 130–131; Brader 1964: 109, 1965: 32; Browne 1968: 720; Chevalier 1931; Chobaut 1897: 262; Corbett & Gater 1926: 22; Cranham 1963, 1964, 1966a, 1966b, 1966c; Davis 1966: 125; Dixon & Woodruff 1982; Drooz 1985: 375; Eden 1958, 1965; Entwistle 1960a, 1960b, 1962; Esser 1965: 3; Frappa 1929; Frohlich & Rodewald 1969: 99; Green 1912a: 39; Hall 1912: 741, 1913: 251–259; Hill, D. S. 1983: 496; Hofacker, Loomis, & Tucker 1984: 30; Jepson 1923: 19–21; Kaji 1964: 331; Kaneko 1965: 211–216, 1966: 5, 1967: 19–21; Kim 1965: 24; LePelley 1968: 138, 1973; Lever 1940a: 38–42; Lodos 1969; Low Chong Moi 1975; MacGowan 1973a: 3, 1979a, 1979b; Mangold, Wilkinson, & Short 1977; Mathur & Singh 1960a: 16, 1961a: 13; Mead 1965, 1966b: 8, 1967a: 7, 1967b: 4, 1969: 4, 1970b: 3, 1971: 3, 1972b: 3, 1973a: 3, 1978: 3, 1979a: 4, 1979b: 6; Miller, J. W. 1974: 6; Morstatt 1911b: 384; Nelson, R. E. & Davis 1972; Newton, A. P. 1960; Pierce, J. R., Srago, & Fujii 1977: 15; Pierce, J. R., Wood, & Fujii 1977: 16; Radhakrishnan, Ramaiah, & Bhat 1987; Ramachandra 1928: 1–30; Ramesh 1987; Reydon 1933: 172; Rutherford 1914a, 1914b, 1914c: 131–132; Sakhar, Suseela, & Sakhar 1965: 71–75; Seal 1964; Seymour 1966a, 1966b; Sivarami 1980: 58; Speyer 1916: 250, 1918, 1919, 1923: 16–17, 22;

Stokes 1975b, 1975c; Szent-Ivany 1963: 42, 1964: 89; Strohmeyer 1910f: 188; Takenouchi & Takagi 1967: 105–110; Taylor, W. E. 1973: 57; Thirugnanasuntharan & Calnaido 1968, 1969; Vazquez & Monteagudo 1988; Venkataramaiah & Sekhar 1964: 208–210; Visser 1961; Wilde, Brader, & Ticheler 1964: 550–552; Wood, S. L. 1977a: 74; Wurth 1910: 105. (**ec**) Anonymous 1987; Appanna 1946; Arx & Hennebert 1965; Betrem 1935a, 1953; Bhat & Sreedharan 1988; Brader 1964b; Browne 1958b; Gopinath 1970, 1972, 1984; Hara & Beardsley 1979; Kalshoven 1960b: 260; Kaneko 1967; Kaneko & Takagi 1966b; Kaneko, Tamaki, & Takagi 1965, 1965a; Kashiwa & Bega 1973; LePelley 1968: 138; Mulder 1960: 167; Ngoan et al. 1976; Norris 1979; Sharples 1936: 384; Steinmann 1925: 143; Thompson, W. R. 1943: 117; Vinodkumar, Balakrishnan, & Govindarajan 1986. (**hb**) Alibert 1951; Anonymous 1987; Anstead 1920; Appanna 1946; Atkinson, Foltz, & Connor 1988; Aulmann 1911; Beaver 1976b: 543, 1988a: 67; Beaver & Browne 1978: 614; Blandford 1894b; Browne 1958b, 1963a: 246, 1968b: 720; Cranham 1963, 1966b, 1966c; Deyrup & Atkinson 1987a: 66; Dixon & Woodruff 1982; Eden 1958, 1965; Entwistle 1964; Frohlich & Rodewald 1969: 99; Gopinath 1967a, 1984; Gray, B. 1974c; Hagedorn 1913a; Hamilton, W. D. 1967; Hara & Beardsley 1979; Hill, D. S. 1983: 496, 1987: 339; Kalshoven 1951: 850, 1959a: 224, 1959c: 162, 1961b, 1962: 17; Kaneko 1967; Kaneko & Takagi 1965: 23–28, 1966a: 1–20, 1966b: 173–176; Kaneko, Tamadi, & Takagi 1965a, 1965b: 23–28; Kleine 1932a: 306; LePelley 1968: 138; Ngoan et al. 1976; Pollet 1977; Roberts 1969: 134; Schedl 1977b: 219; Speyer 1923: 16; Takagi & Kaneko 1965a; Wood, S. L. 1982b: 768. (**ds**) Anonymous 1962r, 1963p, 1964h, 1964k, 1965d, 1965e, 1966f, 1966j, 1966p, 1966t, 1967f, 1967i, 1967k, 1967s, 1968i, 1968n, 1968p, 1968q, 1969g, 1969k, 1970h, 1970r, 1972j, 1972s, 1973e, 1973h, 1975i, 1975s, 1975t, 1976b, 1976c, 1976e, 1976i, 1977j, 1977q, 1978d, 1979d, 1979n, 1980g; Anstead 1920; Atkinson et al. 1991: 161; Ballard 1921; Beardsley 1965; Beaver 1976b: 543, 1988a: 67, 1990a: 280; Beaver & Browne 1978: 614; Beeson 1930: 250, 1938b; Bhasin, Roonwal, & Singh 1958: 111; Blandford 1894b, 1894c; Brader 1964b; Bright 1968b: 1294, 1985c: 174; Browne 1954, 1963c: 55, 1968: 720, 1974a: 65; Chapin & Oliver 1986; Chevalier 1931; Deyrup & Atkinson 1987a: 66; Dixon & Woodruff 1982; Drooz 1985: 375; Dumbleton 1954; Ebeling 1959; Frappa 1933b; Green 1912a; Hagedorn 1910d: 100, 1912: 38–40, 1913a; Hara & Beardsley 1979; Hargreaves 1930: 16–18, 1937: 510; Hill, D. S. 1983: 496; Kalshoven 1924b: 356, 1925b: 5, 1932: 244, 1958c: 220, 244, 1959c: 162, 1961b; Kashiwai & Bega 1973; Kleine 1913b: 160, 162, 1914b: 260, 323, 1932a: 306, 1934a: 172; Kolbe 1911: 508; LePelley 1968: 138; Lepesme et al. 1948: 647; Low Chong Moi 1975; Mathur & Singh 1960a: 16, 1961a: 13; Morstatt 1913: 292; Murayama 1949c: 102, 1952a: 17–20, 1953: 156–157, 1954b: 176, 1955: 99, 1961a: 99, 1961b: 26–28; Murayama & Kalshoven 1962: 447–450; Nobuchi 1981e: 29, 1985c: 22; Nobuchi & Ono 1973: 181; Pierce, J. R., Wood, & Fujii 1970: 16; Pollet 1977; Roba 1935: 340; Samuelson 1981; Schedl 1959a: 470, 495, 1962j: 153, 1967e: 215, 1969d: 7–12, 1969h: 101, 1971a: 274–276, 1971c: 366, 1971e: 1, 3, 1971g: 194, 1972e: 284, 1975h: 353, 1977b: 3219, 1979b: 416; Speyer 1916: 250; Strohmeyer 1910f: 188; Vasquez & Monteagudo 1988; Wood, S. L. 1977a: 74, 1980b: 353, 1982b: 768; Yin, Huang, & Li 1984: 169. (**tx**) Aulmann 1911; Beeson 1930; Blandford 1894b: 264, 1894c: 579, 1894d: 102, 107, 1896f: 243; Bright 1968b: 1294, 1985c: 174; Browne 1963c: 55; Eichhoff 1875: 201, 1877a: 123, 1878b: 328–329, 477; Green 1912a; Hagedorn 1910a: 153, 1912b: 36–39; Kalshoven 1959a: 1224; Murayama 1934c: 299, 1936: 149, 1952a: 20, 1954b: 176 1955: 99; Nobuchi 1964: 131, pl. 192, 1981e:figs. 8–10, 1983: 304; Nunberg 1959: 434, 1969: 387; Samuelson 1977a: 219, 1981: 54; Schedl 1934f: 1646, 1939e: 330, 1942c: 163, 1942d: 4, 1950d: 18, 1950f: 39, 1953d: 70, 1954d: 872, 1954e: 54, 1959a: 495, 1977a: 219; Strohmeyer 1910: 86; Wood, S. L. 1982b: 768; Yin, Huang, & Li 1984: 169. (**ms**) Radhakrishnan, Ramaiah, & Bhat 1987.

morstatti Hagedorn 1912: 37 (*Xyleborus*). Syntypes ♀; Amani, Deutsch-Ostafrika; Hamburg Museum, lost. Synonymy: Murayama & Kalshoven 1962: 247.

References: (**ay**) Lhoste & Roche 1959: 76, 1960; Murayama & Kalshoven 1962. (**bv**) Betrem 1951: 281; Gopinath 1967a. (**cn**) Ahrens & Vandenput 1952; Alibert 1951: 148; Anonymous 1933c: 625, 1960, 1962g, 1962h, 1962k, 1962y, 1963j, 1963r, 1963x; Appanna 1946: 70–74, 1947: 175–176; Aulmann 1911: 430–431; Aulmann & La Baume 1912: 63–64; Bardin 1940; Begemann 1927a: 329–334, 1927b: 273, 1927c: 10; Benavides 1961: 17; Betrem 1930c, 1930d, 1930e, 1931b, 1931c, 1931d, 1931e, 1932a, 1932b, 1932d, 1932e, 1933, 1934, 1935a, 1938, 1953; Brader 1962: 111; Braudeau 1960; Brown 1954: 707–710; Brunck 1966a; Chevalier 1931: 661–665; Corporaal 1920: 13, 31, 1921: 22; Decelle 1962a: 207; Donald 1960, 1966; Ebeling 1959; Entwistle 1962; Fluiter 1938: 37, 1939: 38, 1940: 12, 1960; Franssen 1935: 38–41; Frappa 1929: 15–20, 1931: 255, 1933b: 178–180; Gregory 1954; Hagedorn 1913a; Hall 1925: 1–51, 1926: 14; Henao 1958; Hill, D. S. 1983: 515; Isasca 1941: 1367–1369; Jacob 1931: 1193, 1934: 1141; Jepson 1939: 45; Kalshoven 1925b: 5, 1932: 244, 1951: 850, 1958c: 220, 244; Keuchenius 1931a: 203–204; Kleine 1932a: 306, 1934:

174; Klinkhammer 1925: 1379; Lavabre 1958: 119, 124, 1959: 21–33, 1960: 6, 1962: 5; Leefmans 1927: 28–29, 59, 1928: 294, 1928b: 924–925, 1929: 53–95, 1930: 52–90, 1933: 43–75, 1934: 49–81; Lever 1938: 17, 20, 1939: 17–20, 1940a: 38, 1945: 373, 1946: 4, 30–32; Lhoste & Roche 1959: 76–86; Magnin 1954: 468; Mathur & Singh 1960a: 6, 1960b: 58, 1961a: 79; McIntosh 1949: 46; Meiffren & Belin 1960: 150, 1961; Menzel 1929: 1–106; Merrill 1951: 41; Morstatt 1914b: 308, 1914d: 16, 1914e: 138, 1937: 23, 1941: 216; Muller 1933: 105–107; Paine 1934: 39–41, 1935: 40; Pasquier 1932: 223–253; Pierce, W. D. 1917: 64; Porteres 1959: 6–11; Ritchie 1934: 76; Schedl 1962k: 137; Schweizer 1932: 1–87, 1933: 1–100; Somasekhar 1958: 224; Souphieff & Scherbinovskaja 1935: 43–84, 1937: 103; Speyer 1923: 11–23; Subramanium 1935: 23–27, 1936: 23–25; Taylor, W. E. 1973: 57; Ultee 1928: 12, 1929: 59–60, 1930: 28, 1931a: 17, 1931b: 915, 1931c: 1100–1116, 1949: 7–88; Van der Goot 1928: 59–72, 1934: 39–69, 1935: 36–84; Venkataramaiah & Sekhar 1964: 208–210; Vincent 1961: 104; Vuillaume et al. 1981; Wyniger 1962a: 32; Yunus & Hua 1980: 230; Zeef & Leeuwenburgh 1931: 1065–1067; Zimmermann 1899: 43–44, 1901: 94–95, 1908: 328, 1908: 716. (**ec**) Appanna 1946; Benavides 1961: 17; Betrem 1935a, 1951: 278, 1953; Browne 1958b; Cachan 1957: 15; Decelle 1962a; Domenichini 1960; Donald 1960, 1966; Kalshoven 1960b: 260, 1960c, 1962a: 17; Lavabre 1962; Meiffrem & Belin 1960: 150; Sharples 1936: 384; Thompson, W. R. 1943: 117; Vuillaume et al. 1981. (**hb**) Appanna 1946, 1947; Benavides 1961: 17; Betrem 1951: 278; Brader 1962; Browne 1941: 67, 1958b: 164–182, 1961c: 169–171; Dammerman 1929: 78; Donald 1960, 1966; Franklin & Roberts 1959: 10; Gerritsen 1931: 1080–1090; Ghesquiere 1933a: 3, 1933b: 774; Gopinath 1967a; Greenwood 1940: 211–218; Hagedorn 1913a; Hill, D. S. 1983: 515; Jones, Roberts, & Baker 1959: 13–14; Kalshoven 1951: 850, 1959a: 224, 1959c: 162, 1960b: 259–262, 1961b: 93–110, 1962: 17; Kleine 1932a: 306; Kolbe 1911: 508; Kuneman 1931: 1077–1080; Lavabre 1962; Roepke 1909: 366; Schedl 1962j: 137; Schmidt 1939: 84–275; Sharples 1936: 384; Stadt 1931: 1073–1077; Steinmann 1931: 255–257; Webb & Jones 1957: 38, 43. (**ds**) Anonymous 1933c: 625, 1962g, 1962k, 1962y, 1963j, 1963r, 1963x; Beeson 1930: 249–250, 1938b: 293, 1941: 400; Bhasin, Roonwal, & Singh 1958: 61; Brown 1954; Browne 1954: 707, 1961c: 169; Chevalier 1931; Davis 1963: 197; Decelle 1962b; Dumbleton 1954: 28, 147; Ebeling 1959; Frappa 1933b; Greenwood 1930: 65; Gregory 1955: 294; Hagedorn 1913a: 43–270; Hardy, D. E. 1962; Hargreaves 1922: 20–22, 1937: 510; Hill, D. S. 1983: 515; Kalshoven 1924b: 356, 1925b: 5–11, 1926a: 61–66, 118–120, 1926a: 629–635, 1926c: 172–178, 1932: 244, 1958a: 147–193, 1958c: 220, 244, 1959c: 147–162, 1961b, 1962a: 17; Kleine 1913b: 162, 1914b: 323, 1932a: 306, 1934a: 174; Lepesme et al. 1948: 647; Mathur & Singh 1960a: 6, 1960b: 58, 1961a: 79; Morstatt 1911: 69, 1913: 292, 1914: 139–141, 308; Muthukrishman et al. 1958: 383; Nonveiller 1984: 41; Pierce, W. D. 1917: 64; Roba 1935: 340; Schedl 1936j: 31, 1961e: 144, 1961f: 91, 1961h: 349, 1962j: 137, 1964f: 618; Souphieff & Scherbinovskaja 1937: 103; Swezey 1945: 353; Szent-Ivany 1963: 42; Thompson, G. H. 1963: 72; Wichmann 1954: 520; Yunus & Hua 1980: 230. (**tx**) Beeson 1930: 249–250; Browne 1963c: 54; Eggers 1922a: 87, 1923a: 130, 1927b: 407, 1927c, 1930d: 182; Hagedorn 1912: 37–39; Kalshoven 1959a: 224–225, 1961b: 134; Lhoste & Roche 1960: fig. 5; Murayama & Kalshoven 1962: 247; Schedl 1936j: 31, 1939e: 330, 1942c: 163, 1942d: 4, 1950d: 18, 1950f: 39, 1953d: 70, 1954d: 872, 1954e: 54, 1959a: 470, 495, 1961e: 128, 144, 1962j: 111, 137, 1962k: 111.

***corthyloides* (Schedl)** 1934d: 86 (*Xyleborus*). Lectotype ♀; Java, Mount Gede, 800 m; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 66.

Distribution: Indonesia (Java).

Hosts: Zingiberaceae.

Notes: (3) Schedl 1964e: 69, 1975h: 351 report this species from the Ivory Coast in Africa; the identifications should be confirmed before this record is accepted (SLW).

References: (**ds**) Kalshoven 1935a: 14; Schedl 1964e: 69, 1975h: 351. (**tx**) Schedl 1934d: 86–87, 1936h: 62, 1975d: 85, 1979c: 66.

percorthyloides Schedl 1957d: 85 (*Xyleborus*). Lectotype ♀; Java, Mount Gede, 800 m; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 66, automatic.

Notes: (1) This is an unneeded replacement name of *corthyloides*.

References: (**hb**) Kalshoven 1959c: 163. (**ds**) Kalshoven 1959c: 163. (**tx**) Browne 1962b: 50; Schedl 1957d: 85, 1958k: 149, 1979c: 188.

***crassiusculus* (Motschulsky)** 1866: 403 (*Phloeotrogus*). Syntypes 3 ♀; published as Des Montagnes de Nura-Ellia, Ceylon, types labeled India Occidentale; IZM, Moscow.

Figures: Atkinson, Foltz, & Wilkinson 1988, Nakane et al. 1963:pl. 192, Samuelson 1981: 54, Schedl 1962j: 190, 1977b: 140.

Distribution: Africa (Cameroon/ Equatorial Guinea/ Fernando Poo/ Ghana/ Ivory Coast/ Kenya/ Mauritania/ Nigeria/ Sierra Leone/ Seychelles Islands/ Tanzania/ Zaire), Asia (Bhutan/ Bonin Islands/ Burma/ Fujian, Hong Kong,

Hunan, Sichuan, Xizang [Tibet] in China/ Andaman Islands, Assam, Bengal, Himachal Pradesh, Madhya Pradesh, Maharashtra, Tamil Nadu, Uttar Pradesh in India/ Japan/ Korea/ Malaya/ Nepal/ Sri Lanka/ Taiwan/ Vietnam), Hawaiian Islands, Indonesia (Borneo, Celebes, Java, Sumatra), Madagascar, Mauritius Islands, Micronesia (Palau Islands), New Caledonia, New Guinea, North America (Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Texas in USA), Philippine Islands, Samoan Islands.

Hosts: Many listed by Schedl 1962j: 197–205. *Albizzia lebbek*, *Alnus* sp., *Alstonia* sp., *Amoora* spp., *Artocarpus* spp., *Aucoumea klaineana*, *Bischofia javanica*, *Calophyllum tetrapterum*, *Canarium* sp., *Cannabris sativa*, *Castanea favanica*, *Castanopsis* spp., *Cedrela toona*, *Chloroxylon swietenia*, *Cinnamomum* sp., *Dalbergia sissoo*, *Dillenia pentagyne*, *Doonia zeylanica*, *Dipterocarpus* spp.,*Elaeocarpus sericeus*, *E. tetrapterum*, *E. tuberculata*, *Erythrina* spp., *Erythrophleum guineense*, *Ficus* spp., *Gliricidia maculata*, *Gluta tourtour*, *G. travancorica*, *Grevilla robusta*, *Guarea laurentii*, *Hevea brasiliensis*, *Holigarna arnottina*, *Hopea beccariana*, *H. ferrea*, *H. odorata*, *H. parviflora*, *H. wrightiana*, *Kayea floribunda*, *Khaya ivorensis*, *Lagerstroemia speciosa*, *Lannea grandis*, *Lasiococca* sp., *Leea sambucina*, *Lithocarpus wallichianus*, *Luffa* sp., *Macilus odoratissima*, *Malus pumila*, *Melanorrhoea* sp., *Murraya konigii*, *Myristica* spp., *Neodypsis baroni*, *Ongokea gore*, *Ougeinia dalbergioides*, *Pachytrophe dimepate*, *Phoebe lanceolata*, *Pinus khasia*, *Populus* sp., *Prunus persica*, *Pycnanthus angolensis*, *Quercus* spp., *Saccharum officinarum*, *Sageraea laurina*, *Sambucus chinensis*, *Scorodophloeus zenkeri*, *Shorea curtisii*, *S. maxwelliana*, *S. robusta*, *Sorbus alnifolia*, *Sterculia colorata*, *S. villosa*, *Styrax benzoin*, *Swietenia macrophylla*, *Swintonia specifera*, *Syzygium cumini*, *Tectona grandis*, *Terminalia* spp., *Theobroma cacao*, *Vateria indica*, *Vatica heteroptera*, *Vitex altissima*, *Wrightia tinctoria*, *Xanthophyllum affine*.

Notes: (1) Wood 1969c: 119 (types examined), 1982b: 766 (to *Xylosandrus*).

References: (**bv**) Choo, Woo, & Park 1988; Kovach 1986a. (**cn**) Anonymous 1979c, 1979i; Atkinson, Foltz, & Wilkinson 1988; Beaver 1988a: 68; Kovach 1986a; Kovach & Gorsuch 1985; Wood, S. L. 1977a: 74. (**hb**) Atkinson, Foltz, & Wilkinson 1988; Beaver 1988a: 68; Beaver & Browne 1978: 607; Deyrup & Atkinson 1987a: 66; Kovach 1986a; Wood, S. L. 1982b: 766; Wu, Sze-Jih Hsu, & Tou Chen 1978. (**ds**) Anonymous 1979c, 1979i; Atkinson, Foltz, & Wilkinson 1988; Atkinson et al. 1991: 161; Beaver 1988a: 68; Beaver & Browne 1978: 607; Chapin & Oliver 1986; Choo 1983: 98; Choo & Woo 1985: 165; Choo, Woo, & Nobuchi 1983: 172, 1988a: 134; Choo, Woo, & Park 1988; Deyrup & Atkinson 1987a: 66, 1987b: 68; Drooz 1985: 375; Gemminger & Harold 1872: 2692; Nobuchi 1985c: 22; Nohira & Ogawa 1986; Ohno, Yoneyama, & Nakazawa 1987a: 88, 1987b: 95; Ohno, Yoshioka, Uchida, Yoneyama, & Tsukamoto 1989: 61; Samuelson 1981; Schedl 1978d: 73; Wood, S. L. 1977a: 74, 1982b: 766. (**tx**) Anderson, D. M. 1975; Atkinson, Foltz, & Wilkinson 1988; Choo 1983: 98; Motschulsky 1866: 403; Ohno, Yoneyama, & Nakazawa 1982b: 9; Samuelson 1981: 54; Schedl 1951k: 136; Wood, S. L. 1969c: 119, 1982b: 766; Wylie & Yule 1977.

semiopacus Eichhoff 1878b: 334 (*Xyleborus*). Syntypes ♀; Nipon insula Japonica; Hamburg Museum, lost. Synonymy: Wood 1969c: 119.

References: (**ay**) Browne 1961d: 49; Entwistle 1963b; Schedl, W. 1962: 375; Van Ryn-Tournel 1975. (**bv**) Entwistle 1963b. (**cn**) Anonymous 1966j, 1970n, 1980g; Box 1953a; Brader 1964: 5; Browne 1968b: 716–717; Cachan 1958: 394; Green 1911: 2–5, 1912a: 38, 1916: 608–636; Hill, D. S. 1983: 573; Kudler 1978; Mathur & Singh 1960b: 24, 1961a: 3; Roonwal 1954: 19; Speyer 1917a: 9, 1923: 18–21; Williams, L. H. & La Fage 1979. (**ec**) Banno, Mikata, & Kodama 1983: 445; Norris 1979; Schedl 1962j: 189. (**hb**) Entwistle 1963b; Hill, D. S. 1983: 573; Pollet 1977; Schedl 1962j: 189; Speyer 1923: 18. (**ds**) Anderson, D. M. 1974; Anonymous 1966j, 1980g; Beeson 1930: 257; Bhasin, Roonwal, & Singh 1958; Blandford 1894c: 579; Browne 1961c: 102, 1963a: 238–242, 1968: 716; Cole 1971: 65; Eggers 1941b: 222; Green 1912a: 38; Hagedorn 1910d: 110; Hill, D. S. 1983: 573, 1987: 341; Kalshoven 1924: 6–25, 1951: 851; Kleine 1913b: 162, 1914b: 260, 280, 1928: 307, 1934a: 175; Ko 1969: 286; Mathur & Singh 1960b: 24, 1961a: 3; Miwa 1931: 269; Muraleedharan & Kandasamy 1981; Murayama 1953a: 17, 1954b: 182, 204, 1961: 103; Nakane et al. 1963: 384; Nobuchi 1967: 13–14, 23, 1978a: 24; Nobuchi & Ono 1973: 182; Nonveiller 1984: 42; Nunberg 1961b: 610, 1968a: 272; Pollet 1977; Roberts 1960: 36–38; Roonwal 1954: 19; Schedl 1934f: 1646, 1959a: 496, 1960e: 173, 1962b: 185, 1962j: 189, 1964c: 305, 1964f: 618, 1965e: 355, 1966b: 69, 1966c: 228, 1966g: 30, 1967e: 219, 1969a: 208, 1969c: 54, 1969d: 8, 1970d: 234, 1971a: 279, 1971g: 193, 1973b: 211, 1973c: 379, 1975a: 451, 1975c: 383, 1975e: 451, 1975j: 294, 1977b: 141, 1979b: 416; Tymchak 1977; Yin & Huang 1981: 566. (**tx**) Beeson 1915: 297, 1916a: 221–223, 1923: 165, 1929: 236, 1930: 257; Blandford 1894c: 579, 1894d: 101–123, 1896b: 211, 1898a: 424; Eggers 1923a: 130, 1925: 153, 1927b: 400, 407, 1939c: 114, 1941b: 222; Eichhoff 1878b: 334; Green 1912a: 38–39; Hagedorn 1909: 733, 1910a: 96, 156, 1913: 15; Murayama 1936: 144–150, 1953a: 17, 1954b: 186; Motschulsky

1866: 403; Nakane et al. 1963: 384; Nobuchi 1978a: pl. 2, 1983: 303; Sampson 1914: 386; Schedl 1931c: 340, 1934f: 1646, 1935f: 271–272, 1941d: 380, 1951j: 20, 1953d: 70, 1955b: 272, 1959a: 496, 1960e: 173, 1962h: 60, 1962j: 189–190, 1962k: 1102, 1962n: 697, 1977b: 140–141; Schreiner 1882: 248; Wood, S. L. 1969c: 119; Yin & Huang 1981: 566; Yin, Huang, & Li 1984: 170.

semigranosus Blandford 1896b: 211 (*Xyleborus*). Holotype ♀; Sumatra; BMNH, London. Synonymy: Schedl 1959a: 496.
References: (**ay**) Gardner 1934b: 1–17. (**bv**) Beeson 1917. (**cn**) Anonymous 1953h: 31, 1953j: 25; Gadd 1943: 32–36; Holmes 1947: 3, 109; Kalshoven 1924c: 1–27, 1951: 851; Kleine 1932a: 307; Mathur, Chatterjee, & Thapa 1965: 16; Mathur & Singh 1960b: 10, 1960c: 8, 1961a: 5, 1961b: 14; Ramachandra Rao 1928: 1–30, 1936: 35–45; Roonwal 1954: 45; Roonwal, Chatterjee, & Thapa 1961b: 7; Speyer 1917a: 8–9; Stebbing 1914: 589; Webb & Jones 1957: 25–44, 1958: 383; Yunus & Hua 1980: 230. (**ec**) Anonymous 1953j: 25; Beeson 1923; Bhatia 1950; Browne 1958b; Cachan 1957: 43–53; Chatterjee & Chatterjee 1951; Schedl 1958d: 192; Stebbing 1914: 589. (**hb**) Beeson 1915b: 8–11, 1916a: 1–5, 1917, 1923, 1929: 236, 1938: 293–294; Browne 1958b: 164–182; Chatterjee & Chatterjee 1951; Jones, Roberts, & Baker 1959: 13–67; Kalshoven 1924c, 1951: 851, 1958a: 187, 1959c: 145; Kleine 1932a: 307; Schedl 1958d: 192; Stebbing 1914: 589; Thompson, G. H. 1963: 72. (**ds**) Beeson 1915b: 297, 1916a: 221, 1923, 1929: 236, 1930: 255–257, 1938b: 293–294, 1941: 395, 401–402; Bhasin, Roonwal, & Singh 1958: 61, 98, 111; Bhatia 1950; Blandford 1898a; Browne 1961c: 102, 1961e: 10, 13; Chatterjee & Chatterjee 1951; Dupont 1916, 1917: 20–22; Green 1916: 608–636; Hagedorn 1910d: 110; Holmes 1947: 109; Kalshoven 1958a: 187, 1959c: 145; Kleine 1913b: 162, 1914b: 268, 274, 1932a: 307, 1934a: 175; Mathur & Singh 1960b: 10, 1960c: 8, 1961a: 5, 1961b: 14; Mayne & Donis 1960: 104; Murayama 1936b: 115; Nunberg 1961a: 331; Roberts 1960b: 36, 1960e, 1960f, 1961: 53–60, 1969: 133; Roonwal 1954: 45–87; Roonwal, Chatterjee, & Thapa 1961b: 7; Sampson 1914: 386; Schedl 1931c: 347, 1936j: 30; Thomas, R. T. S. 1960a, 1960b: 77; Thompson, G. H. 1963: 72; Van Zwaluwenburg 1956: 9; Wichmann 1954: 502, 521–522, 1955: 97; Wood, S. L. 1957e: 1273, 1960a: 51; Yunus & Hua 1980: 230. (**tx**) Beeson 1929, 1930: 255–257; Blandford 1896b: 211; Browne 1948: 908; Eggers 1923a: 130, 1925: 153, 1927b: 400–401, 1936d: 626; Gardner 1934b: 15–16; Hagedorn 1910a: 156; Sampson 1914: 386; Schedl 1936: 30, 1939e: 330, 1940b: 435, 1941d: 380, 1942a: 171, 1942d: 37, 1950e: 211, 1951e: 38, 1951i: 43–50, 1951j: 20, 1951k: 137, 1953b: 124, 1953d: 70, 1953f: 83, 1954a: 142, 1954d: 872, 1954e: 54–72, 1955d: 272, 1957d: 84, 1959a: 496, 1961e: 128, 1962b: 185–186, 1962j: 190; Stebbing 1914: 589; Wood, S. L. 1960a: 51, 56–57.

ebriosus Niisima 1909: 154 (*Xyleborus*). Holotype ♀; Sapporo, Japan; Nobuchi Collection, Ibaraki. Synonymy: Choo 1983: 98.
References: (**ay**) Murayama 1933a: 7. (**cn**) Murayama 1954a: 14. (**ec**) Inouye et al. 1955: 94. (**hb**) Inouye et al. 1955: 94. (**ds**) Kleine 1913b: 161, 1914b: 260, 1934a: 172; Murayama 1929b: 2, 1930b: 20, 1931a: 43, 1933b: 7, 1934d: 508, 1936b: 114, 1937b: 375, 1949c: 102, 1950b: 1296, 1951a: 6, 1953a: 18, 1953c: 145, 157, 1954a: 14, 1954b: 177 1955: 100, 102, 104. (**tx**) Hagedorn 1910a: 153; Murayama 1930b: 20–31, 1931a: 43–44, 1933a: 7, 19, 1934c: 299, 1937b: 375, 1950b: 1296, 1953a: 18, 1954b: 177, 1955: 100, 102, 104; Niisima 1909: 154; Schedl 1934f: 1646.

bengalensis Stebbing 1908: 12 (*Dryocoetes*). Syntypes ♀; Goalpara, Assam; FRI, Dehra Dun. Synonymy: Beeson 1915: 297.
References: (**cn**) Pierce, W. D. 1917: 193; Stebbing 1914: 590. (**ec**) Stebbing 1914: 590. (**hb**) Stebbing 1914: 590. (**ds**) Kleine 1914b: 270; Pierce, W. D. 1917: 193. (**tx**) Beeson 1915: 297, 1929: 236, 1935: 294; Hagedorn 1910a: 96; Schedl 1959a: 496, 1962j: 190; Stebbing 1908b: 12, 1914: 590; Wood, S. L. 1960: 57.

mascarenus Hagedorn 1908: 379 (*Xyleborus*). Syntypes ♀; Mauritius, and Bomole et Amani in Deutsch-Ostafrika; most lost with Hamburg Museum, 1 in Schedl Collection in NHMW, Wien. Synonymy: Eggers 1923a: 130.
Notes: (1) Schedl 1979c: 149 (citation of holotype invalid).
References: (**cn**) Sallenave 1948: 437. (**ec**) Sallenave 1948: 437. (**ds**) Beeson 1938: 294; Hagedorn 1910d: 106; Kleine 1913b: 161, 1914b: 323. (**tx**) Beeson 1929: 236; Eggers 1923a: 130, 1925: 153, 1927b: 400; Hagedorn 1908: 379, 1909a, 1910a: 155; Kalshoven 1959: 145; Nunberg 1956a: 145; Schedl 1948c: 665, 1959a: 496, 1962j: 190, 332, 1979c: 149; Wood, S. L. 1960: 57.

okoumeensis Schedl 1935f: 271 (*Xyleborus*). Syntypes ♀; imported Okoume logs, Carlshafen, Hessen-Nassau [Germany]; Schedl Collection in NHMW, Wien. Synonymy: Schedl 1959a: 496.
Notes: (1) Schedl 1979c: 177 (citation of holotype invalid).
References: (**ec**) Wichmann 1955a: 97. (**ds**) Wichmann 1955a: 97. (**tx**) Schedl 1935f: 271–272, 1950c: 209, 1959a: 496, 1962j: 190, 1979c: 177.

declivigranulatus Schedl 1936j: 30 (*Xyleborus*).

Lectotype ♀; Selangor, Malay Peninsula; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 76. Synonymy: Schedl 1959a: 496.

References: (**cn**) Browne 1938b, 1949e: 907, 1950a: 167–168, 1951: 98; Hill, D. S. 1983: 543; Mathur & Singh 1961b: 94; Sivaram 1980: 58; Yunus & Hua 1980: 230. (**ec**) Browne 1958b: 83. (**hb**) Browne 1936a: 122, 1958b: 83, 1961c: 102; Hill, D. S. 1983: 543. (**ds**) Browne 1936a: 122, 1941: 67, 1961c: 102; Hill, D. S. 1983: 543; Mathur & Singh 1961b: 94; Nunberg 1961b: 610; Schedl 1936j: 30; Yunus & Hua 1980: 230. (**tx**) Browne 1949b: 907, 1949e: 174–189, 1950a: 167–168; Schedl 1936j: 30–31, 1939e: 330, 1959a: 496, 1962j: 190, 1962n: 697, 1979c: 76.

***curtulus* (Eichhoff)** 1869a: 281 (*Xyleborus*). Holotype ♀; Brazil; IRSNB, Brussels.

Figures: Atkinson et al. 1986: 71.

Distribution: Antilles Islands (Guadeloupe), North America (Guatemala/ Honduras/ Colima, Nayarit, Oaxaca, San Luis Potosi, Veracruz in Mexico), South America (Brazil/ Colombia/ Venezuela).

Hosts: *Ficus* spp., *Phoradendron* spp., *Serjania* sp.

Notes: (3) It is possible that *zimmermanni* Hopkins is also a synonym.

References: (**ec**) Equihua & Atkinson 1986: 630. (**hb**) Equihua & Atkinson 1986: 630. (**ds**) Atkinson & Equihua 1988: 102; Atkinson et al. 1986: 62; Blackwelder 1947: 779; Equihua & Atkinson 1986: 630; Estrada & Atkinson 1988: 208; Gemminger & Harold 1872: 2685; Hagedorn 1910d: 101; Kleine 1913b: 160; Wood, S. L. 1982b: 770. (**tx**) Atkinson et al. 1986: 71; Eichhoff 1869a: 280–281, 1875: 201, 1878b: 329; Hagedorn 1910a: 153; Wood, S. L. 1973c: 187, 1982b: 770.

curtuloides Eggers 1941a: 102 (*Xyleborus*). Holotype ♀; Guadeloupe (Gourbeyre); Eggers Collection (not listed by Anderson & Anderson 1971 or Schedl 1979c). Synonymy: Wood 1982b: 770.

Notes: (1) Schedl 1979c: 72 (cites cotypes, but holotype not seen).

References: (**ds**) Bright 1985c: 174. (**tx**) Bright 1985c: 174; Eggers 1941a: 102; Schedl 1964k: 213, 1979c: 72; Wood, S. L. 1982b: 770.

biseriatus Schedl 1963d: 226 (*Xyleborus*). Holotype ♀; Nova Teutonia, Santa Catarina, Brazil; Schedl Collection in NHMW, Wien. Synonymy: Wood 1973c: 187.

References: (**ds**) Pedrosa-Macedo & Schonherr 1985: 26. (**tx**) Pedrosa-Macedo & Schonherr 1985: 26; de Ruette 1970: 114; Schedl 1963d: 226, 1964k: 213, 1979c: 41; Wood, S. L. 1966b: 33, 1973c: 187.

strumosus Schedl 1972g: 73. Holotype ♀; Brasilien, Corcovado, Guanabara; Schedl Collection in NHMW, Wien. Synonymy: Wood 1992:(in press).

References: (**ds**) Schedl 1972g: 73, 1976a: 53. (**tx**) Schedl 1972g: 73, 1979c: 239; Wood, S. L. 1992:(in press).

***cylindrotomicus* (Schedl)** 1939f: 40 (*Pseudoxyleborus*). Lectotype ♀; Sumatra, Benkoelen; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 74.

Figures: Nunberg 1963b:pl. 30, figs. 3–6, Schedl 1962j: 575.

Distribution: Africa (Zaire), Indonesia (Sumatra).

Hosts: *Albizzia gummifera*, *Eugenia caryophylata*, *Khinedoxa gabonensis* var. *oblongifolia*.

References: (**hb**) Kalshoven 1959c: 162. (**ds**) Kalshoven 1959c: 162. (**tx**) Kalshoven 1959e: 95, 1960d; Schedl 1939f: 40, 1942d: 6, 1951i: 79, 1959a: 511, 1979c: 74.

semitruncatus Schedl 1942d: 35 (*Xyleborus*). Lectotype ♀; Sumatra, Manna; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 224. Synonymy: Wood 1989: 177.

References: (**tx**) Schedl 1942d: 35, 1951i: 79, 1979c: 224; Wood, S. L. 1989: 177.

truncatellus Schedl 1951i: 79 (*Xyleborus*). Lectotype ♀; Z. Sumatra, Poelau Pisang, and Manna; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 256. Synonymy: Kalshoven 1959b: 95.

Notes: Schedl 1979c: 138 (citation of holotype invalid).

References: (**tx**) Kalshoven 1959b: 95–96; Nunberg 1963b: 60; de Ruette 1970: 115; Schedl 1951i: 79, 1954a; 1979c: 138.

jucundus Schedl 1954a: 138 (*Xyleborus*). Lectotype ♀; Z. Sumatra, Poelau Pisang, and Manna; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 256, automatic. Synonymy: Kalshoven 1959b: 95.

Notes: (1) This is an unneeded replacement name for *truncatellus*.

References: (**tx**) Kalshoven 1959b: 95; Schedl 1954a: 138, 1979c: 256.

ramulorum Schedl 1957d: 115 (*Xyleborus*). Holotype ♀; Congo Belge: Yangambi; MRCB, Tervuren. Synonymy: Wood 1989: 177.

References: (**hb**) Schedl 1962j: 575. (**ds**) Schedl 1962j: 575. (**tx**) Browne 1965a: 204; Nunberg 1963b: 47–48; Schedl 1957d: 113–115, 1962j: 575, 1979c: 210; Wood, S. L. 1989: 177.

***deruptetermin atus* (Schedl)** 1951i: 64 (*Xyleborus*). Holotype ♀; Java, Mount Gede; Schedl Collection in NHMW, Wien.

Figures: Nobuchi 1978a:pl. 1.

Distribution: Indonesia (Java).

Notes: (1) Schedl 1964k: 213 (to *Xylosandrus*).

References: (**ds**) Nobuchi 1978a: 12; Ohno, Yoneyama, & Nakazawa 1982a: 4. (**tx**) Nobuchi 1978a: pl. 1; Schedl 1951i: 64, 1964k: 213, 1979c: 78.

***deruptulus* (Schedl)** 1942d: 37 (*Xyleborus*). Lectotype ♀; Java, Mount Dede, 800 m; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 78.

Distribution: Indonesia (Java).

Notes: (1) Schedl 1964k: 213 (to *Xylosandrus*).

References: (**tx**) Schedl 1942d: 37, 1953f: 82, 1964k: 213, 1979c: 78.

***difficilis* (Eggers)** 1923a: 174 (*Xyleborus*). Lectotype ♀; Java: USNM, Washington, designated by Anderson & Anderson 1971: 12.

Distribution: Asia (Assam, Bengal in India/ Malaya/ Vietnam), Indonesia (Borneo, Celebes, Java, Sumatra), Cook Islands (?Rarotonga), Fiji Islands.

Hosts: *Amoora rohituka*, *Artocarpus elasticus*, *Beilschmiedia* sp., *Dipterocarpus kunstleri*, *Gmelina arborea*, *Macaranga* sp., *Shorea leprosula*, *S. macroptera*, *S. ovalis*, *Xanthophyllum* spp.

Notes: (1) Browne 1963c: 55 (to *Xylosandrus*).

References: (**cn**) Browne 1952; Mathur & Singh 1960b: 17. (**ec**) Kalshoven 1960b; Roberts 1977a: 269. (**hb**) Browne 1961c: 165–166; Kalshoven 1959c: 161, 1960a: 120; Roberts 1977a: 269. (**ds**) Beeson 1930: 232; Browne 1961c: 166, 1974a: 66, 1983a: 555; Kalshoven 1959c: 161; Mathur & Singh 1960b: 17; Ohno, Yoshioka, Yoneyama, & Nakazawa 1988a: 92, 1989: 61; Roberts 1977a: 269. (**tx**) Anderson, W. H. & Anderson 1971: 11–12; Beeson 1930: 232; Browne 1963c: 55; Eggers 1923a: 174–175, 1941a: 102; Nunberg 1959a: 423; Schedl 1942a: 179, 1942d: 29, 37, 1950f: 39, 1951i: 42, 1954a: 141, 1965g: 24, 1979c: 80.

***discolor* (Blandford)** 1898a: 429 (*Xyleborus*). Holotype ♀; Ceylon; BMNH, London.

Figures: Yin, Huang, & Li 1984: 180.

Distribution: Asia (Burma/ Fujian, Guangdong, Sichuan, Yunnan in China/ Andaman Islands, Assam, Tamil Nadu, Uttar Pradesh in India/ Sri Lanka), Indonesia (Java).

Hosts: *Ailanthus altissima*, *Albizzia* sp., *Camellia sinensis*, *Cassia multijuga*, *Castanopsis fargesii*, *Cedrela toona*, *Chloroxylon swietenia*, *Coffea arabica*, *C. robusta*, *C.* spp., *Cinnamomum camphora*, *Grevillia robusta*, *Hevea brasiliensis*, *Juglans nigra*, *Machilus odoratissimus*, *M. thunburgii*, *Mangifera indica*, *Pterospermum acerifolium*, *Rhus chinensis*, *Sophora japonica*, *Swietenia mahagoni*, *Tephrosia candida*, *Terminalia myriocarpa*, *T. procera*, *Theobroma cacao*, *Vitis vinifera*.

References: (**ay**) Gardner 1934b: 1–17. (**cn**) Browne 1968b: 720; Chatterjee 1917b: 1–4; Frolich & Rodewald 1969: 99; Green 1912a: 39; Janaki et al. 1958: 138; Kalshoven 1932: 244, 1951: 851; Kleine 1932a: 307; Light 1928: 25–34; Mathur & Singh 1960a: 13, 1960b: 24, 1961a: 80, 1961b: 21; Muthukrishnan et al. 1959: 364; Pasquier 1932: 223–253; Roonwal 1954: 48; Stebbing 1914: 587; Ultee 1931: 1–55. (**ec**) Stebbing 1914: 587. (**hb**) Beaver & Browne 1975: 302; Browne 1961c: 169, 1968b: 720; Kalshoven 1951: 851, 1959c: 160; Kleine 1932a: 307; Speyer 1923: 20; Stebbing 1914: 587. (**ds**) Beaver & Browne 1975: 302; Beeson 1930: 232–233; Bhasin, Roonwal, & Singh 1958; Browne 1961c: 169, 1968b: 720; Green 1911: 2–5, 1912a: 39, 1916: 608–636; Hagedorn 1910d: 101; Kalshoven 1932: 244, 1959c: 160; Kleine 1913b: 160, 1914b: 274, 1932a: 307, 1934a: 173; LePelley 1968: 145; Mathur & Singh 1960a: 13, 1960b: 24, 1961a: 80, 1961b: 21; Nobuchi 1967: 21, 1979a: 406; Roba 1935: 340; Roonwal 1954: 48; Schedl 1959a: 496, 1961c: 71, 1971a: 277; Yin, Huang, & Li 1984: 180. (**tx**) Beeson 1930: 232–233; Blandford 1898a: 429; Browne 1963c: 55; Eggers 1923a: 174, 190, 1925: 153, 1927: 407, 1930d: 186, 1939c: 119, 1941b: 224; Gardner 1934b; Green 1912a: 39; Hagedorn 1910a: 153; Nobuchi 1983: 304; Nunberg 1959a: 424; Schedl 1942d: 4, 1951i: 63–64, 1954a: 141, 1958a: 148–149, 1958k: 149, 1959a: 496; Stebbing 1914: 587; Yin, Huang, & Li 1984: 180.

***diversepilosus* (Eggers)** 1941b: 224 (*Xyleborus*). Holotype ♀; China, Prov. Fukien (Kuatun, 2300 m); Alexander Koenig Museum, Bonn.

Distribution: Asia (Fujian in China).

Notes: (1) Browne 1963c: 55 (to *Xylosandrus*).

References: (**tx**) Browne 1963c: 55; Eggers 1941b: 224.

***eupatorii* (Eggers)** 1940d: 140 (*Xyleborus*). Holotype ♀; Java (Tjibodas, G. Gedeh); Kalshoven Collection.

Distribution: Indonesia (Java).

Hosts: *Eupatorium tjibeureum*.

Notes: (1) Schedl 1964k: 213 (to *Xylosandrus*).

References: (**tx**) Eggers 1940d: 140–141; Schedl 1951i: 63, 1964k: 213, 1979c: 92.

***ferinus* (Schedl)** 1936j: 31 (*Xyleborus*). Lectotype ♀; India: Travancore Mt. Estate, Tamil Nadu; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 96.

Distribution: Asia (Tamil Nadu in India).

Hosts: Red gum.

References: (**ds**) Schedl 1936j: 31. (**tx**) Browne 1963c: 55; Schedl 1936j: 31–32, 1979c: 95–96.

***fijianus* (Schedl)** 1938f: 50 (*Xyleborus*). Lectotypes ♀; Fiji Islands, Taverne Quilai; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 96.

Figures: Nunberg 1968a:pl. 1.

Distribution: Fiji Islands.

References: (**cn**) Anonymous 1985; Browne 1968b: 715; Ebeling 1959. (**ec**) Roberts 1977a: 257. (**hb**) Browne 1968b: 715; Roberts 1977a: 257. (**ds**) Browne 1968b: 715, 1974a: 65; Ebeling 1959; Lever 1943a: 82; Roberts 1977a: 257; Schedl 1962i: 75. (**tx**) Nunberg 1968a: 273, pl. 1; Schedl

1938f: 50–51, 1942c: 163, 1950f: 40, 1955b: 284–285, 1979c: 96.

***germanus* (Blandford)** 1894d: 106 (*Xyleborus*). Syntypes 16, sex?; Ovayama, Nikko, Subashiri, Kiga, Niyanashita; BMNH, London.

Figures: Balachowsky 1963a: 1286, Grune 1979: 158, Nakane et al. 1963:pl. 192, Nobuchi 1966d: pl. 3, 1978a: pl. 1, 1981e: figs. 5–7, Postner 1974: 468.

Distribution: Asia (Anhui, Fujian, Shanxi, Xizang [Tibet], Yunnan in China/ Japan/ Korea/ Ryukyu Islands/ Taiwan/ Vietnam), Europe (introduced: Austria/ France/ Germany/ Yugoslavia), North America (introduced: Ontario in Canada/ Connecticut, Illinois, Indiana, Kentucky, New Jersey, New York, North Carolina, Ohio, Pennsylvania, West Virginia in USA).

Hosts: *Abies fabri*, *Acer* spp., *Alnus* sp., *Carpinus laxiflora*, *Carya* sp., *Cassia siamea*, *Castanea crenata*, *Castanopsis* sp., *Chamaecyparis obtusa*, *Cleyera japonica*, *Cornus florida*, *Diospyros kaki*, *Fagus multinervis*, *F. sylvatica*, *Fraxinus* spp., *Juglans* sp., *Myrica* sp., *Lindera erythrocarpa*, *Liriodendron tulipifera*, *Machilus* sp., *Morus* spp., *Nyssa aquatica*, *Pinus* sp., *Prunus* spp., *Pyrus* sp., *Rhus chinensis*, *Quercus* spp., *Schima superba*, *Styrax japonicus*, *Taxodium distichum*, *Ulmus* spp., *Vitis* sp., *Ziziphus jujuba*.

Notes: (1) Hoffman 1941: 38 (to *Xylosandrus*).

References: (**ay**) Finnegan 1963: 137; Fisher 1954; Francke-Grosmann 1956a, 1956b, 1956c, 1957; Lhoste & Roche 1960; Murayama 1933a: 2; Schneider 1976; Takagi & Kaneko 1965b, 1965c, 1966; Takenouchi & Takagi 1967. (**bv**) Choo, Woo, & Park 1988; Dethier 1947; Grune 1979: 159; Klimetzek et al. 1986: 270; Maksymov 1987; Moeck 1970b: 992; Rafes 1966: 69; Ueno 1960; Weber & McPherson 1984a, 1985. (**cn**) Anderson, R. F. 1948; Anderson, R. L. & Hoffard 1978; Androic 1966: 46; Anonymous 1964h, 1965g, 1968g, 1968k, 1969h, 1972f, 1973g, 1975c, 1978c, 1979n, 1980g; Blackman 1950; Bohm 1958; Browne 1952; Buchanan 1940: 819–820, 1941: 367–369; Clausen 1931; Collins 1941: 370–371; Cranham 1966c; Dehnert 1968; Felt 1932: 8, 80, 393, 418; Felt & Bromley 1937a: 20; Fisher, Thompson, & Webb 1953; Gabler 1955; Gauss 1960: 168–172; Groschke 1952b, 1954a; Heidenreich 1960a: 5–10, 1960b: 187–188, 1964: 131; Inouye 1955; Jones & Moses 1943: 79–85; Kamp 1953: 242, 1194, 1954: 5; Kaneko 1967; MacNay 1956: 109; Maksymov 1987; Murayama 1954a: 13; Ohnesorge 1955: 280; Rodary 1959: 850; Schimitschek 1955a: 136, 1955c: 84; Schwerdtfeger 1957a: 190; Shiraki 1952; Strong 1937: 21; Takagi & Kaneko 1965a: 54, 1965b: 247, 1966: 4, 1966: 29–31; Uchida et al. 1958: 181; Ueno 1960; Weber, B. C. 1984; Weber, B. C. & McPherson 1984a; Weise 1963; Wichmann 1955b: 250–251, 1957a: 82–84; Williams, L. H. & LaFage 1979: 426; Wood, S. L. 1977a: 74. (**ec**) Anderson, R. L. & Hoffard 1978; Baker, W. L. 1972: 271; Banno, Mikata, & Kodama 1983: 445; Batra 1963b: 217; Buchanan 1940a: 819–820, 1941; Dorsey & Leach 1956: 224; Drooz 1985: 374; Finnegan 1963: 137; Fisher 1954; Francke-Grosmann 1956a, 1956b, 1956c, 1957, 1959: 141; Heidenreich 1964; Inouye et al. 1955: 96; Kaneko 1967; Kaneko & Takagi 1965, 1966b; Kaneko, Tamaki, & Takagi 1965a, 1965b; Kessler 1974; Nishiguchi 1959: 271; Norris 1979; Rodary 1959: 850; Schimitschek 1955a: 136; Schneider 1976; Schwerdtfeger 1957a: 190; Steinhaus 1946: 405; Takagi & Kaneko 1965b, 1965c; Weber, B. C. & McPherson 1983b, 1984a, 1984b, 1985; Wichmann 1955a: 95, 103; Yoon et al. 1982. (**hb**) Anderson, R. F. 1948; Annila 1971: 12; Atkins 1968: 1116; Baker, W. L. 1972: 271; Balachowsky 1963a: 1285; Blackman 1950; Buchanan 1940a: 819–820, 1941; Cairaschi & d'Agilar 1957; Chamberlin 1939: 456; Cranham 1966c; Dehnert 1968; Deyrup & Atkinson 1987a: 66; Fisher 1954; Gabler 1955; Gauss 1960; Groschke 1952a, 1952b, 1953a: 2–12; Hoffmann 1941: 38–42; Inouye et al. 1955: 96; Kaneko 1965: 211, 1967: 19–21; Kaneko & Takagi 1965, 1966b: 173–176; Kaneko, Tamaki, & Takagi 1965a, 1965b: 23; Krivolutskaya 1965: 342, 1973; Maksymov 1987; Murayama 1968; Ohnesorge 1955: 280; Postner 1974: 468; Schimitschek 1955a: 136; Schneider & Farrier 1969: 412–415; Schwerdtfeger 1957a: 190, 1981: 196; Takahashi 1989: 403; Ueno 1960: 168; Weber, B. C. & McPherson 1983b; Wood, S. L. 1982b: 768; Yoon et al. 1982. (**ds**) Androic 1966: 46; Anonymous 1964h, 1965g, 1968g, 1969h, 1975c, 1978c, 1979n, 1980g; Arsenescu 1961; Blackman 1950; Blackwelder & Blackwelder 1948; Blandford 1894c; Bohm 1958; Bright 1968b: 1293, 1988b; Browne 1968a: 132–133; Chamberlin 1939: 456; Chapin & Oliver 1986; Cho 1957, 1963; Choo 1983: 99; Choo & Woo 1985: 165; Choo, Woo, & Nobuchi 1983: 173, 1988a: 134; Choo, Woo, & Park 1988; Clausen 1931; Deyrup 1981b: 7; Deyrup & Atkinson 1987a: 66; Drooz 1985: 374; Felt 1932; Felt & Bromley 1937a; Grune 1979: 159; Hagedorn 1910d: 105; Hoffmann 1940: 61, 1942: 13; Horion 1954b: 21; Kamp 1954: 124, 1963: 125, 1979; Kaston 1938: 240; Kleine 1913b: 161, 1914b: 260, 1934a: 173; Kono 1938b: 65, 72; Krivolutskaya 1965a: 342, 1973; Lucht 1987: 280; MacNay 1956: 109; Murayama 1929b: 2, 1930b: 20, 1931a: 45, 1936a: 132, 1936b: 114, 1942a: 56, 1949c: 103, 1950b: 1296, 1951a: 6, 1952a: 23, 1953a: 19, 1953c: 145, 158, 1954a: 13, 1954b: 178, 1955: 102, 104; Nakane et al. 1963: 384; Nobuchi 1966d: 25, 1967: 21, 1978a: 11, 1985c: 23; Nohira & Ogawa 1986; Pfeffer 1989a: 87; Postner 1974: 463; Sawamoto 1940a: 96, 107; Schedl 1960e: 172, 1966g: 30, 1981b: 98; Schneider & Farrier 1969;

Schwerdtfeger 1981: 196; Shiraki 1952; Sonan 1933: 257–270; Staines 1984; Umnov 1956: 46–50; Weber, B. C. 1979; Weber, B. C. & McPherson 1982, 1983c, 1991: 49; Weise 1963; Wichmann 1955a: 95, 103, 1955b: 250, 1957a: 82; Wood, S. L. 1977a: 74, 1982b: 768; Yin & Huang 1981: 568; Yin, Huang, & Li 1984: 168. (**tx**) Balachowsky 1963a: 1286; Blandford 1894d: 106; Bright 1968b: 1293; Chamberlin 1939: 456; Choo 1983: 99; Eggers 1926b: 145–146, 1941b: 222; Gabler 1955; Groschke 1952a, 1953a; Grune 1979: 158–159; Hagedorn 1910a: 154; Lucht 1987: 280; Maksymov 1987; Murayama 1930b: 20, 22, 24, 31, 1931a: 45–46, 1933a: 2, 1934c: 299, 1936a: 132–133, 1950b: 1296, 1952a: 23, 1953a: 19, 1954b: 178 1955: 102, 104; Nakane et al. 1963: 384; Niisima 1909: 153, 157, 1910a: 3, 13, 1913a: 5; Nobuchi 1964: 129–134, 1966d: 25, pl. 3, 1978a: pl. 1, 1981e:figs. 5–7; Pfeffer 1955a: 194; Postner 1974: 468; Sawamoto 1940: 96, 107; Schedl 1934f: 1646, 1955d: 273, 1955h: 45, 1979c: 103, 1981b: 98; Schimitschek 1955c: 84; Wood, S. L. 1982b: 768; Yin & Huang 1981: 568; Yin, Huang, & Li 1984: 168. (**ms**) Thalenhorst 1962: 347; Weber, B. C. & McPherson 1983a.

orbatus Blandford 1894d: 123 (*Xyleborus*). Holotype ♂; Kurigahara, Japan; BMNH, London.
Synonymy: Choo 1983: 100.
References: (**ds**) Hagedorn 1910d: 108; Kleine 1913b: 162, 1914b: 260; Murayama 1954b: 181. (**tx**) Choo 1983: 100; Hagedorn 1910a: 155; Murayama 1954: 181; Schedl 1934f: 1646.

***gravidus* (Blandford)** 1898a: 427 (*Xyleborus*). Holotype ♀; Chittagong Hills [Bangladesh]; BMNH, London.
Figures: Kumar & Chandra 1977: 42 (male).
Distribution: Asia (Bangladesh/ Burma/ Xizang [Tibet] in China/ Assam, Bengal in India/ Laos/ Sri Lanka/ Thailand/ Tonkin in Vietnam).
Hosts: *Buchanania lanzon*, *Cinnamomum cicidodaphne*, *Shorea bracteolata*, *Swietenia macrophylla*, *S. mahagoni*, *Tectona grandis*, *Vatica lanceaefolia*.
Notes: (3) Kumar & Chandra 1977: 34 (described male).
References: (**cn**) Browne 1968b: 716; Hagedorn 1913a; Mathur & Singh 1961a: 38, 1961b: 14; Stebbing 1914: 586. (**ec**) Stebbing 1914: 586. (**hb**) Browne 1968b: 716; Hagedorn 1913a; Stebbing 1914: 586. (**ds**) Beaver & Browne 1975: 298; Beeson 1930; Bhasin, Roonwal, & Singh 1958; Browne 1968b: 716, 1980a: 371; Hagedorn 1910d: 105, 1913a; Kleine 1913b: 161, 1914b: 270, 1934a: 173; Mathur & Singh 1961a: 38, 1961b: 371; Schedl 1937f: 15, 1962i: 185, 1971c: 363, 1971f: 149, 1974c: 262. (**tx**) Beeson 1930: 237; Blandford 1898: 427; Eggers 1930d: 185; Hagedorn 1910a: 154; Kumar & Chandra 1977: 34, 42; Schedl 1937f: 15–17; Stebbing 1914: 586.

***hirsutipennis* (Schedl)** 1961e: 144 (*Xyleborus*). Holotype ♀; Madagascar, Perinet, Montagne d'Ambre, Antaniditra; IRSM, Madagascar.
Distribution: Madagascar.
Hosts: *Cassipourea* sp., *Ficus soroceoides* var. *macrophlebia*, *Harungana madagascariensis*, *Psychotia* sp., *Urophyllum lyallii*, *Vernonia* sp.
References: (**ds**) Schedl 1977b: 139. (**tx**) Schedl 1961e: 144, 1977b: 139.

***jaintianus* (Schedl)** 1967f: 161 (*Xyleborus*). Holotype ♀; Shillong, Assam; Schedl Collection in NHMW, Wien.
Distribution: Asia (Burma/ Assam in India).
References: (**tx**) Schedl 1967f: 161, 1979c: 129.

***laticeps* (Wood)** 1977b: 219 (*Xyleborus*). Holotype ♀; 20 km SW El Vigia, Merida, Venezuela; Wood Collection.
Distribution: South America (Venezuela).
Hosts: *Dendropanax arboreum*, *Inga* sp., *Jacaranda* sp., *Melicoccus bijugata*, *Protium tenuifolium*, *Spondias mombin*, *Theobroma cacao*.
References: (**tx**) Wood, S. L. 1977b: 219.

***mancus* (Blandford)** 1898a: 428 (*Xyleborus*). Holotype ♀; Ceylon; BMNH, London.
Figures: Hin & Huang 1981: 568, Yin, Huang, & Li 1984: 179.
Distribution: Africa (Mauritania/ Seychelles Islands/ Tanzania), Asia (Gansu, Xizang [Tibet] in China/ Maharashtra, Tamil Nadu in India/ Japan/ Malaya/ Sri Lanka/ Taiwan/ Vietnam), Indonesia (Java, Sumatra), Madagascar, Philippine Islands.
Hosts: Many listed by Schedl 1962j: 573–574. *Adenanthera pavonina*, *Aphanamixa rohituka*, *Artocarpus dadah*, *Brackenridgea hookeri*, *Buchanania lanzan*, *Cordia dichotoma*, *Dryobalanops oblongifolia*, *Gomphia serrata*, *Grewia paniculata*, *Hibiscus macrophyllus*, *Hopea beccariana*, *H. ferrea*, *Hullettia dumosa*, *Litsea megacarpa*, *Melanorrhoea* sp., *Nephelium lappaceum*, *Pometia pinnata*, *Quercus* sp., *Shorea bracteolata*, *S. leprosula*, *S. macroptera*, *S. sumatrana*, *Styrax benzoin*, *Swietenia macrophylla*, *S. mahagoni*, *Theobroma cacao*, *Tristania whiteana*, *Vateria copallifera*, *Vitex pubescens*.
References: (**cn**) Beaver 1988a: 63; Browne 1938b; Green 1912: 39; Kleine 1932a: 307; Mathur & Singh 1960a: 22, 1960b: 48, 1961a: 40, 1961b: 48; McIntosh 1949: 46; Stebbing 1914: 587; Yunus & Hua 1980: 230. (**ec**) Stebbing 1914: 587. (**hb**) Beaver 1988a: 63; Beaver & Browne 1978: 609; Browne 1935a: 4, 1938a: 27, 1938b: 83–84, 1941: 63, 67, 1958b: 164–182, 1961c: 157–159; Kalshoven 1959c: 159; Kleine 1932a: 307; Schedl 1962j: 571; Stebbing 1914: 587. (**ds**) Beaver 1988a: 63; Beaver & Browne 1978: 609; Beeson 1930, 1941: 393; Bhasin, Roonwal, & Singh 1958: 41; Browne 1938a: 27, 1938b: 83–84, 1941: 63, 67, 1961c: 157, 1981a: 126; Corbett 1935: 43–56; Corbett & Gater 1926: 22; Hagedorn 1910d: 106; Kalshoven

1959c: 159; Kleine 1913b: 161, 1914b: 274, 1932a: 307, 1934a: 174; Mathur & Singh 1960a: 22, 1960b: 48, 1961a: 40, 1961b: 48; Nobuchi 1979a: 406; Nunberg 1959: 424, 1961b: 611; Sampson 1914: 388; Schedl 1936j: 19, 1959a: 510, 1962j: 571, 1966b: 59, 1969d: 8, 1971a: 281, 1973c: 379, 1975j: 291; Speyer 1923: 21; Wichmann 1954: 521; Yin & Huang 1981: 567; Yunus & Hua 1980: 230. (**tx**) Beeson 1930: 245; Blandford 1898a: 428; Eggers 1923a: 169, 1927b: 407, 1930d: 186, 1939c: 114, 1939e: 332; Hagedorn 1910a: 155, 1913a: 15, 1913b: 257; Nobuchi 1967: 13–14, 21, 1983: 303; Sampson 1914: 388; Schedl 1934: 86, 1936h: 61, 1936j: 19, 1938h: 463, 1939e: 332, 1942a: 164, 170, 1942d: 6, 1951i: 51, 1952b: 364, 1952c: 61–62, 1953d: 70, 1958k: 149, 1959a: 510, 1962j: 571–574, 1969d: 8, 11, 1977b: 192, 1979c: 147; Stebbing 1914: 587.

abruptus Sampson 1914: 388 (*Xyleborus*). Syntypes ♀; Seychelles, Mahe: high forest of Morne Blanc, and Cascade Estate; BMNH, London. Synonymy: Schedl 1951i: 51.

References: (**cn**) Dupont 1916, 1917: 20–22; Miller, N. C. E. 1941: 10. (**ds**) Kleine 1934a: 171; Mathur & Singh 1961a: 78; Sampson 1914: 388; Schedl 1969d: 11. (**tx**) Eggers 1927b: 407; Sampson 1914: 388; Schedl 1934d: 86, 1936h: 61, 1939e: 332, 1942a: 170, 1942d: 6, 1951i: 51, 1962j: 571.

mancus formosanus Eggers 1930: 186 (*Xyleborus*). Holotype ♀; Formosa: Taihoku; FRI, Dehra Dun. Synonymy: Schedl 1952c: 61.

References: (**ds**) Yin & Huang 1981: 567; Yin, Huang, & Li 1984: 179. (**tx**) Eggers 1930d: 186, 1939c: 114; Nunberg 1959a: 424; Schedl 1938h: 463, 1952c: 61; Yin & Huang 1981: 568, 609; Yin, Huang, & Li 1984: 179.

***mediocris* (Schedl)** 1942a: 185 (*Xyleborus*). Lectotype ♀; Malaya, N.S. Pasoh Forest Reserve; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 150.

Distribution: Asia (Malaya).

Hosts: *Dipterocarpus cornutus*, *Shorea dasyphylla*.

References: (**hb**) Browne 1961c: 169. (**ds**) Browne 1949b, 1961c: 169. (**tx**) Browne 1949b, 1963c: 55; Schedl 1942a: 185, 1951i: 58, 1958b: 101, 1979c: 150.

***mesuae* (Eggers)** 1930d: 182 (*Xyleborus*). Holotype ♀; Bengal (Kalimpong); FRI, Dehra Dun.

Distribution: Asia (Bengal, Uttar Pradesh in India/ Sri Lanka).

Hosts: *Mesua ferrea*, *Osbeckia aspera*, *Shorea robusta*.

Notes: (1) Browne 1963c: 55 (to *Xylosandrus*).

References: (**ds**) Beeson 1930; Kleine 1934a: 174; Schedl 1959a: 495, 1971a: 281. (**tx**) Beeson 1930: 69–70, 245; Browne 1963c: 55; Eggers 1930d: 182–183, 1940d: 142; Schedl 1942a: 185, 1957d: 86, 1959a: 495, 1979c: 152.

***metagermanus* (Schedl)** 1951i: 58 (*Xyleborus*). Holotype ♀; U. Dihing Res., Lakhimpur, Assam; Schedl Collection in NHMW, Wien.

Distribution: Asia (Assam in India).

Hosts: *Gmelina arborea*.

Notes: (1) Browne 1963c: 55 (to *Xylosandrus*).

References: (**tx**) Browne 1963c: 55; Schedl 1951i: 58, 63, 1979c: 152.

***morigerus* (Blandford)** 1894b: 264 (*Xyleborus*). Syntypes ♀; probably New Guinea; BMNH, London.

Figures: Balachowsky 1963a: 1285–1286, Samuelson 1981: 54, Schedl 1962j: 111, Wood 1960a: 53.

Distribution: Africa (Mauritius Islands/ Zaire), Antilles Islands (Puerto Rico), Asia (Bengal, Tamil Nadu in India/ Jordan/ Lebanon/ Malaya/ Sri Lanka/ Taiwan/ Tonkin Island in Vietnam, Vietnam), Australia (Queensland), Europe (introduced: Austria/ Czechoslovakia/ England/ France/ Italy), Fiji Islands, Hawaiian Islands, Indonesia (Borneo, Celebes, Java, Sumatra), Madagascar, Micronesia (Caroline Islands, Timor in Mariana Islands), North America (introduced: Costa Rica/ Honduras/ Chiapas, Veracruz in Mexico/ Panama, intercepted in USA ports), New Britain Island, New Guinea, Philippine Islands, Samoan Islands, South America (introduced: Brazil/ Colombia/ Venezuela).

Hosts: Many listed by Beaver 1976b: 543, Schedl 1962j: 124–130. *Acalypha* sp., *Actinophora fragrans*, *Adenanthera pavonina*, *Albizzia falcata*, *A. procera*, *Altingia excelsa*, *Amomum* sp., *Bixa orellana*, *Boehmeria* sp., *Bridelia* sp., *Butea monosperma*, *Calamus* sp., *Camellia sinensis*, *Cassia multijuga*, *Castanea argentea*, *Centrosema plumieri*, *Cinchona* sp., *Claoxylon polot*, *Coffea excelsa*, *C. liberica*, *C. robusta*, *Cola acuminata*, *Crotolaria anagyroides*, *C. usaramoensis*, *Dalbergia latifolia*, *Dendrobium phalaenopsis*, *Derris microphylla*, *Erythroxylon novagranatense*, *Eugenia polyantha*, *Eupatorium pallescens*, *Eusideroxylon zwageri*, *Ficus* sp., *Flemingia strobilifera*, *Fuchsia* sp., *Grewia laevigata*, *Leucaena glauca*, *Marumia muscosa*, *Ochroma lagopus*, *Persea gratissima*, *Sambucus javanica*, *Schleichera oleosa*, *Swietenia macrophylla*, *S. mahagoni*, *Tarenna incerta*, *Tectona grandis*, *Tephrosia maxima*, *T. vogelii*, *Thea sinensis*, *Theobroma cacao*.

Notes: (1) Reitter 1913a: 83 (to *Xylosandrus*).

References: (**bv**) Betrem 1951: 281; Gray, B. 1974c; Grune 1979: 159; Nakayama & Terra 1986. (**cn**) Altona 1926: 31; Anonymous 1919b: 194; Arens 1915: 9; Arreola Vazquez 1980: 71; Aulmann 1911: 438; Barkmeyer 1927; Beaver 1988a: 68; Begemann 1926, 1927a, 1927b, 1927c, 1928; Benavides 1961; Betrem 1930c, 1930d, 1930e, 1931b, 1931c, 1931d, 1931e, 1932a, 1932b, 1932d, 1932e, 1933, 1934, 1935a, 1938, 1953;

Bleij 1907: 703; Browne 1968: 721; Cramer 1908, 1913; Frohlich & Rodewald 1969: 99; Garretsen 1926: 130–136; Ghesquiere 1933a; Grandi 1951; Green 1912: 89; Hall 1912, 1913, 1915, 1916, 1922, 1923, 1924, 1925, 1926; Hill, D. S. 1983: 496; Hunger 1907: 28, 1908: 35–131; Jacob 1931: 1193; Kalshoven 1924: 9, 1925: 5–7, 1926a: 61–66, 118–120, 1928: 609, 1932: 243, 1933: 5, 1934: 13–14, 1951: 847, 1961a: 133, 1961b; Koningsberger 1901: 94–95, 1908: 76, 1915; Lang 1909: 986; Lavabre 1962: 41; Leefmans 1923: 49, 1924: 224, 1927: 28, 1928; LePelley 1968: 143; Marchal 1909: 227–228; Mathur & Singh 1960a: 13, 1960b: 43, 1961a: 29, 1961b: 14; Morstatt 1911: 384, 1937: 23; Murillo Quinche 1959: 295; Neger 1911: 50; Pirone, Dodge, & Rickett 1960: 515; Pring 1944: 103–104; Rodary 1959: 852; Roepke 1911: 2, 11, 1914: 18, 1915, 1916; Rutgers 1914: 21, 23; Schedl 1962j: 111; Speyer 1923; Trojer & Gomez 1965: 12–30; Ultee 1925: 21, 1927, 1928; Van der Goot 1928: 59; Verbeck 1930a: 402; Wigman 1909: 564–565; Wood, S. L. 1977a: 74; Wurth 1907: 58, 68, 1908: 708, 719, 1909: 548, 1910: 101, 1916, 1921; Yunus & Hua 1980: 231; Zimmermann 1898: 43–44, 1899: 32. (**ec**) Beaver 1979: 298; Benavides 1961; Betrem 1935a, 1951: 278, 1953, 1959; Browne 1958b; Domenichini 1960; Kalshoven 1960b: 259, 1960c, 1962a: 17; Norris 1979; Roberts 1977a: 269; Rodary 1959: 852; Talhouk 1961: 218; Thompson, W. R. 1943: 117; Wichmann 1955a: 98. (**hb**) Balachowsky 1963a: 1285; Beaver 1976b: 298, 1988a: 68; Beaver & Browne 1978: 614; Beeson 1929; Benavides 1961; Betrem 1951: 278; Blandford 1894b: 264; Browne 1958b, 1961c: 166, 1968b: 721; Chobaut 1897b: 261–264; Duport 1909: 282–283, 1915; Grandi 1951; Gray, B. 1974c; Hill, D. S. 1983: 496, 1987: 339; Kalshoven 1951: 847, 1958a: 187, 1959a: 224, 1959c: 162, 1961a: 133, 1961b, 1962: 17; Klinkhamer 1925: 1380; Lengerken 1954: 324; LePelley 1968: 143; Murillo Quinche 1959: 295; Pring 1944: 103; Roberts 1977a: 269; Rutherford 1914c: 131–132, 1914d: 2, 7; Schedl 1962j: 111–130; Speyer 1923: 17; Weele 1910: 1; Wood, S. L. 1982b: 765. (**ds**) Anonymous 1919b: 194, 1971x; Atkinson & Equihua 1985b: 237, 1986a: 422, 1988: 102; Balachowsky 1963a: 1285; Beaver 1976b: 543, 1987b: 65, 1988a: 68; Beaver & Browne 1978: 614; Beeson 1929, 1930: 249, 1938b; Begemann 1927a; Bhasin, Roonwal, & Singh 1958; Blandford 1894b: 264, 1896f: 243, 1897b; Brakman 1966b: 205; Bright 1981c: 157, 1985c: 174; Brimblecombe 1953: 29; Browne 1958: 164–182, 1961c: 166, 1968: 721, 1972: 30, 1974a: 66, 1980a: 371, 1986a: 90; Costa Lima 1922: 34–35, 1925: 16; Donisthorpe 1931: 174; Drooz 1985: 375; Estrada & Atkinson 1988: 208; Everts 1922: 648; Fullaway 1935: 48; Ghesquiere 1933a; Grune 1979: 159; Hagedorn 1910d: 107, 1910e: 1; Hill, D. S. 1983: 496; Hoffmann 1936: 3; Kalshoven 1932: 243, 1933: 5, 1935a: 13, 1958a: 187, 1959c: 162, 1961b, 1962a: 17; Kleine 1913b: 162, 1914b: 296, 1928: 306–307, 1934a: 172, 174; LePelley 1968: 143; Lepesme et al. 1948: 648; Lucht 1987: 280; Mathur & Singh 1960a: 13, 1960b: 43, 1961a: 29, 1961b: 14; Menzel 1929: 29; Murayama 1936b: 115; Murayama & Kalshoven 1962; Neubauer 1959: 94; Nobuchi 1967: 21; Nunberg 1958a: 481, 1961b: 610; Ohno et al. 1988a: 92; Reitter 1916: 295; Roba 1935: 340; Roberts 1977a: 269; Sainte-Claire & Mequignon 1938: 449; Samuelson 1981: 58; Schedl 1936g: 528, 1938d: 451, 1959a: 495, 1962j: 111–130, 1964d, 1966b: 77, 1966f: 76, 1969d: 11, 1971a: 281, 1981b: 97; Scheerpeltz & Winkler 1934f: 257; Schilsky 1909: 189; Swezey 1935: 6, 108, 1945: 352; Szent-Ivany 1963: 42; Talhouk 1961: 218; Terra 1987: 20; Velez 1972; Wichmann 1927a: 80, 1955a: 98–99; Wood, S. L. 1960a: 51, 1961c: 2, 1977a: 74, 1982b: 765; Yunus & Hua 1980: 231. (**tx**) Balachowsky 1949a: 219, 1963a: 1285, 1286; Beeson 1929: 233–234, 1930: 249, 1938: 293; Blandford 1894b: 264; Bright 1985c: 174; Browne 1963c: 55; Eggers 1922: 87, 1923a: 174, 1927b: 407, 1930d: 182, 1939c: 114, 1940d: 140; Fleischer 1927; Grune 1979: 159; Hagedorn 1910a: 155, 1912a, 1912b, 1913a, 1913b; Kalshoven 1959a: 224, 1961a: 133, 1961b; Lucht 1987: 280; Muskus, A. 1984: 94; Nobuchi 1983: 304; Nunberg 1958a: 481, 1961b: 610; Portevin 1935: 331; Reitter 1913a: 80, 83–84, 1916: 295; de Ruette 1970: 115; Samuelson 1981: 54, 58; Schedl 1931c: 347, 1934f: 1646, 1936g: 528, 1942a: 185, 1942c: 163, 1942d: 4, 1950f: 39, 1951i: 42, 1951k: 136, 1954a: 142, 1954c: 154, 1955b: 281, 1958b: 101, 1959a: 495, 1961f: 91, 1962j: 111–130, 1964d: 212, 1980a: 20, 1981b: 97; Strohmeyer 1910f: 186; Terra 1987: 20; Wood, S. L. 1960a: 51, 53, 1974d: 287, 1982b: 765.

coffeae Wurth 1908: 199 (*Xyleborus*). Syntypes ♀; Java; not located. Synonymy: Strohmeyer 1910f: 86, Schedl 1951k: 136.

References: (**ay**) Herfs 1949: 26. (**bv**) Aulmann 1911. (**cn**) Azavedo 1924: 180–181; Begemann 1927: 1–21; Duport 1911, 1913, 1915; Frappa 1931; Hagedorn 1913a; Hall 1916, 1918, 1919, 1920, 1921, 1922: 27, 1923b: 24, 1926: 14, 26, 1932: 265; Havard-Dukos 1928; Herfs 1949: 26; Hutson 1924: 91; Jepson 1920: 280–289; Kalshoven 1924c, 1925b: 5, 1926a: 61, 1953b: 157, 1958c: 220, 1961a: 133; Kleine 1932a: 306; Leefmans 1919: 1–8; Luziau 1953: 21; Mathur & Singh 1960a: 62; Morstatt 1911b: 384, 1937: 26; Pierce, W. D. 1917: 62; Roepke 1909: 365, 1910: 91, 1915, 1916; Rutherford 1914c: 131–132; Strohmeyer 1910f: 186; Vayssiere 1923: 111; Wurth 1910: 101, 1919; Wyniger 1962a: 27, 1962b: 70. (**ec**) Neger 1911a: 53; Thompson, W. R. 1943: 117. (**hb**) Aulmann 1911; Duport 1911; Evans 1952: 141; Hagedorn 1913a; Herfs 1949: 26;

Kalshoven 1924c, 1961a: 133; Kleine 1932a: 306; Morstatt 1924: 17. (**ds**) Beeson 1938: 293; Evans 1952: 141; Hagedorn 1910d: 100, 1912: 36–39, 1913a; Kalshoven 1925b: 5, 1958c: 220, 1961b; Kleine 1913b: 160, 1914b: 279, 288, 314, 1932a: 306, 1934a: 172; Koningsberger 1908: 76; Mathur & Singh 1960a: 15; Pierce, W. D. 1917: 62; Roba 1935: 340; Schedl 1938d: 451; Sprecher 1934: 150; Strohmeyer 1910f: 186; Swezey 1945: 359; Vayssiere 1923: 111. (**tx**) Aulmann 1911; Browne 1963c: 55; Eggers 1922a: 87, 1923a: 130, 174, 190, 1930d: 182; Hagedorn 1910a: 153, 1912a, 1912b; Kalshoven 1961a: 133, 1961b; Lucas 1920: 674; Nunberg 1959a: 420; Schedl 1931c: 346, 1951k: 136, 1954a: 140, 1959a: 495, 1962j: 111; Strohmeyer 1910f: 86; Weele 1910: 308; Wurth 1908: 63–78, 199, 1910: 101–105. (**ms**) Lucas 1920: 674.

luzonicus Eggers 1923a: 174 (*Xyleborus*). Lectotype ♀; Mt. Makiling, Insel Luzon, Philippinen; USNM, Washington, designated by Anderson & Anderson 1971: 18. Synonymy: Wood 1974d: 287.

References: (**ds**) Schedl 1966b: 77; Swezey 1945: 353. (**tx**) Anderson, W. H. & Anderson 1971: 18; Browne 1963c: 55; Eggers 1923a: 174; Nobuchi 1983: 304; Schedl 1961f: 91, 1979c: 143; Wood, S. L. 1974d: 287.

***mutilatus* (Blandford)** 1894d: 103 (*Xyleborus*). Holotype ♀; Japan; BMNH, London.

Figures: Nakane et al. 1963:pl. 192, Nobuchi & Takahashi 1965: 1–2, Yin, Huang, & Li 1984: 181.

Distribution: Asia (Burma/ Anhei, Sichuan, Yunnan, Zhejiang in China/ Andaman Islands, Assam in India/ Japan/ Korea/ Malaya/ Sri Lanka/ Taiwan/ Thailand), Indonesia (Batoe, Borneo, Java, Sumatra), New Guinea.

Hosts: *Acer* sp., *Albizzia* sp., *Benzoin* sp., *Camellia* sp., *Carpinus laxiflora*, *Castanea* sp., *Cinnamomum camphora*, *Cornus* sp., *Cryptomeria japonica*, *Fagus crenata*, *Lindera erythrocarpa*, *Machilus thunbergii*, *Ormosia hosiei*, *Osmanthus fragrans*, *Parabezoin praecox*, *Platycarya* sp., *Swietenia macrophylla*.

Notes: (3) Schedl 1962j: 208 (*pilula* Hagedorn, nomen nudum, cited as a synonym).

References: (**cn**) Anonymous 1980g; Ebeling 1959; Mathur & Singh 1961a: 79; Murayama 1954a: 16; Shiraki 1952. (**ec**) Banno, Mikata, & Kodama 1983: 445; Browne 1958b; Inouye et al. 1955: 100. (**hb**) Beaver & Browne 1975: 299; Browne 1958b; Inouye et al. 1955: 100; Kalshoven 1959c: 162. (**ds**) Anonymous 1980g; Beaver & Browne 1975: 299; Blandford 1894c: 579; Cho 1957, 1963; Choo 1983: 101; Choo & Woo 1985: 166; Choo, Woo, & Nobuchi 1988a: 134; Ebeling 1959; Hagedorn 1910d: 56, 107; Kalshoven 1959c: 162; Kleine 1913b: 128, 162, 1914b: 260, 273, 1934a: 174; Ko 1969: 285; Lacordaire 1866: 383; Mathur & Singh 1961a: 79; Murayama 1929b: 2, 1930b: 19, 1931a: 41, 1934d: 510, 1937b: 375, 1950b: 1297, 1953a: 20, 1953c: 159, 1954a: 16, 1954b: 180; Nakane et al. 1963: 383; Nobuchi 1967: 22; Nobuchi & Takahashi 1965: 1; Nohira & Ogawa 1986; Sampson 1921: 28; Schedl 1971f: 149; Shiraki 1952; Yin, Huang, & Li 1984: 181. (**tx**) Blandford 1894d: 103; Browne 1955: 353; Choo 1983: 101; Eggers 1939c: 118; Ferrari 1867a: 74; Hagedorn 1910a: 105, 155; Kalshoven 1960d: 63; Lacordaire 1866: 383; Motschulsky 1863: 514; Murayama 1930b: 19–31, 1931a: 41, 1934c: 300, 1937b: 375, 1950b: 1297, 1952a: 23, 1953a: 20, 1954b: 180; Nakane et al. 1963: 383, pl. 192; Niisima 1909: 152–154; Nobuchi & Takahashi 1965: 1–2, 1983: 303; Sampson 1921: 28; Schedl 1934f: 1646, 1962p: 208, 1972q: 255–267; Yin, Huang, & Li 1984: 181. (**ms**) Mastumura 1973.

sampsoni Eggers 1930d: 184 (*Xyleborus*). Holotype ♀; Assam (Haflong, Cachar); FRI, Dehra Dun. Synonymy: Wood 1989: 177.

References: (**tx**) Eggers 1930d: 184–185; Wood, S. L. 1989: 177.

banjoewangi Schedl 1939f: 41 (*Xyleborus*). Lectotype ♀; Banjoewangi, 270 m, Tjoerahlele; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 33. Synonymy: Kalshoven 1960d: 63.

References: (**tx**) Kalshoven 1960d: 63; Schedl 1939f: 40, 1940b: 435, 1951i: 85, 1979c: 33.

taitonus Eggers 1939c: 118 (*Xyleborus*). Holotype ♀; Formosa, Taito; Chujo Collection.

Notes: (1) Specimens in the FRI, Dehra Dun labeled by Eggers as *taitonus* are *mutilatus*; synonymy needs confirmation.

References: (**ds**) Nobuchi 1967: 23. (**tx**) Eggers 1939c: 118.

***nanus* (Blandford)** 1896f: 242 (*Xyleborus*). Holotype ♀; Noumea (Delauney); BMNH, London.

Distribution: New Caledonia.

Notes: (1) Browne 1963c: 55 (to *Xylosandrus*).

References: (**ds**) Beeson 1938b: 293; Hagedorn 1910d: 107; Kleine 1913b: 162, 1914b: 301. (**tx**) Blandford 1896f: 242; Browne 1955: 353, 1963c: 55; Eggers 1923a: 174; Hagedorn 1910a: 155.

***omissus* (Schedl)** 1961e: 153 (*Xyleborus*). Holotype ♀; Madagascar, Antaniditra pres Perinet; IRSM, Madagascar.

Distribution: Madagascar.

Hosts: *Eugenia* sp.

Notes: (1) Generic position uncertain, either *Amasa* or *Xylosandrus*.

References: (**ds**) Schedl 1977b: 194. (**tx**) Schedl 1961e: 153, 1977b: 194, 1979c: 178.

***oralis* (Schedl)** 1961e: 164 (*Xyleborus*). Holotype ♀; Madagascar, Antaniditra pres Perinet; IRSM, Madagascar.

Distribution: Madagascar.

Notes: (1) Generic position uncertain, either *Amasa* or *Xylosandrus*.
Hosts: *Eugenia* sp.
References: (**ds**) Schedl 1977b: 194. (**tx**) Schedl 1961e: 164, 1977b: 194, 1979c: 180.

***orbiculatus* (Schedl)** 1942a: 186 (*Xyleborus*). Holotype ♀; Borneo; Schedl Collection in NHMW, Wien.
Distribution: Indonesia (Borneo).
References: (**hb**) Browne 1961c: 106. (**tx**) Schedl 1942a: 186, 1951i: 51, 1955b: 298, 1979c: 180.

***posticestriatus* (Eggers)** 1939c: 119 (*Xyleborus*). Lectotype ♀; Formosa (Taihoku); USNM, Washington, designated by Anderson & Anderson 1971: 26.
Distribution: Asia (Malaya/ Sri Lanka/ Taiwan), Micronesia.
Notes: (1) Nunberg 1959a: 434 (to *Xylosandrus*).
References: (**ds**) Schedl 1975j: 294. (**tx**) Anderson, W. H. & Anderson 1971: 26; Eggers 1939c: 119; Nunberg 1959a: 434; Schedl 1942d: 4, 1951i: 63, 1954a: 142, 1958k: 149, 1959a: 496, 1979c: 198.

***pseudosolidus* (Schedl)** 1936g: 530 (*Xyleborus*). Lectotype ♀; Tasmania, and New South Wales: Dorrigo, Narara; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 202.
Distribution: Australia (New South Wales, Queensland, Tasmania), New Zealand.
Hosts: *Araucaria cunninghami*, *Malus sylvestris*, *Mangifera indica*, *Prunus* spp.
References: (**ds**) Hardy, E. J. et al. 1971; Hardy, R. J. et al. 1982; Martyn et al. 1970: 4, 1975: 9; Schedl 1936g: 530, 1959d: 67. (**tx**) Schedl 1936g: 530, 1955b: 278, 1959d: 67, 1979c: 202.

***pusillus* (Schedl)** 1961f: 91 (*Xyleborus*). Holotype ♀; Luzon, Rizal, Mt. Irid; Schedl Collection in NHMW, Wien.
Distribution: Philippine Islands (Luzon).
Notes: (1) Schedl 1964k: 213 (to *Xylosandrus*).
References: (**ds**) Schedl 1966b: 78. (**tx**) Nobuchi 1983: 303; Schedl 1961f: 91, 1964k: 213, 1979c: 206.

***pygmaeus* (Eggers)** 1940d: 142 (*Xyleborus*). Holotype ♀; Ost-Java (Alas Tbedek); Kalshoven Collection.
Distribution: Asia (Malaya/ Sri Lanka), Indonesia (Java).
Hosts: *Litsea amara*, *Vitex pubescens*.
References: (**cn**) Vayssiere 1923: 111. (**hb**) Browne 1961c: 169; Kalshoven 1959c: 147. (**ds**) Browne 1961c: 169; Kalshoven 1959c: 147; Schedl 1971a: 277; Vayssiere 1923: 111. (**tx**) Browne 1963c: 55; Eggers 1940d: 142; Schedl 1958b: 101, 1958k: 145, 1979c: 207.

***retusus* (Eichhoff)** 1868c: 151 (*Xyleborus*). Syntypes ♀; N. Freiburg [Brazil]; Hamburg Museum, lost.
Figures: Pedrosa-Macedo & Schonherr 1985: 36.
Distribution: South America (Argentina/ Brazil).
Hosts: *Bauhinia* sp., *Cedrela fissilis*, *Coffea* spp., *Cratylia floribunda*, *Nectandra* sp.
References: (**hb**) Beaver 1976a: 25; Moreira 1928: 24–25; Viana 1964: 124. (**ds**) Beaver 1976a: 25; Blackwelder 1947: 780; Gemminger & Harold 1872: 2686; Hagedorn 1910d: 110; Kleine 1913b: 162, 1934a: 174; Pedrosa-Macedo & Schonherr 1985: 36; Roba 1935: 340; Santoro 1957b: 25; Schedl 1966f: 89, 1970e: 84, 1971f: 149, 1972g: 45, 1973d: 159, 1976a: 55; Schonherr & Pedrosa-Macedo 1981: 56; Viana 1964: 124. (**tx**) Eichhoff 1868c: 151, 1878b: 316; Hagedorn 1908, 1910a: 156; Nunberg 1959a: 435; Pedrosa-Macedo & Schonherr 1985: 36; Schedl 1948d: 37, 1951h: 285.

***solidus* (Eichhoff)** 1868c: 151 (*Xyleborus*). Holotype ♀; Neu-Holland; Hamburg Museum, lost.
Figures: Schedl 1972a: 148 (male).
Distribution: Australia (New South Wales, Queensland, Tasmania, Victoria).
Hosts: *Diploglottis australis*, *Eucalyptus* spp.
Notes: (1) Schedl 1979c: 232 (cited holotype as in Schedl Collection; if this is the holotype, then it was taken while on loan to Eggers). French 1911:pl. 1, fig. 4 (erroneously labeled this as *Apate collaris* Erichson).
References: (**cn**) Brimblecombe 1956; Froggatt 1900, 1907, 1924, 1927; Gurney 1915: 303–312; Jarvis 1922: 269–271, 1924: 435–438; Kleine 1932a: 306; Moore 1959: 188. (**hb**) Brimblecombe 1956; Froggatt 1900: 640–642, 1907, 1924, 1927; Kleine 1932a: 306. (**ds**) Gemminger & Harold 1872: 2686; Hagedorn 1910d: 111; Kleine 1913b: 162, 1914b: 299, 1932a: 306; Moore 1959: 188; Schedl 1936g: 529, 1936j: 31, 1959d: 67, 1965g: 25, 1972a: 144, 1979a: 159. (**tx**) Carne et al. 1980; Eggers 1927c: 88; Eichhoff 1868c: 151, 1878b: 518; French, C. 1911; Hagedorn 1908, 1910a: 156; Lea 1902: 221, 1904: 106; Schedl 1936g: 529, 1939j: 564, 1959d: 67, 1965g: 26, 1972a: 143–149, 1979c: 232.

***squamulatus* (Beaver)** 1985: 69 (*Apoxyleborus*). Holotype ♀; Zambia; BMNH, London.
Distribution: Africa (Zambia).
References: (**tx**) Beaver 1985: 69.

***subsimiliformis* (Eggers)** 1939b: 11 (*Xyleborus*). Holotype ♀; Nordostbirma (Kaimbaiti, 7000 Fuss); NHR, Stockholm, 1 Eggers cotype in NHMW, Wien.
Distribution: Asia (Burma).
References: (**tx**) Eggers 1939b: 11–12; Schedl 1979c: 243.

***subsimilis* (Eggers)** 1930d: 186 (*Xyleborus*). Holotype ♀; Assam (Shillong); FRI, Dehra Dun, 1 Eggers cotype in NHMW, Wien.
Figures: Kumar & Chandra 1977: 47 (male).
Distribution: Asia (Assam, Bengal in India).
Hosts: *Cinnamomum obtusifolium*, *Tectona grandis*, *Terminalia myriocarpa*.

Notes: (3) Kumar & Chandra 1977: 36, 47 (described male).
References: (**cn**) Mathur & Singh 1961b: 14. (**ds**) Bhasin, Roonwal, & Singh 1958; Mathur & Singh 1961b: 14. (**tx**) Eggers 1930d: 186, 1939b: 11; Kumar & Chandra 1977: 36, 47; Schedl 1979c: 244.

***terminatus* (Eggers)** 1930d: 182 (*Xyleborus*). Holotype ♀; Coorg (Virojapet, Sidapur); FRI, Dehra Dun.
Distribution: Asia (Karnataka, Maharashtra, Tamil Nadu in India).
Hosts: *Holigarn arnottiana*, *Lantana* sp., *Swietenia macrophylla*.
Notes: (1) Browne 1963c: 55 (to *Xylosandrus*).
References: (**cn**) Mathur & Singh 1960b: 55. (**ds**) Beeson 1930: 262; Mathur & Singh 1960b: 55. (**tx**) Beeson 1930: 262; Browne 1963c: 55; Eggers 1930d: 182, 1943d; Schedl 1955b: 298, 1979c: 252.

***testudo* (Eggers)** 1939c: 116 (*Xyleborus*). Lectotype ♀; Formosa (Trichu); USNM, Washington, designated by Anderson & Anderson 1971: 34.
Distribution: Asia (Taiwan/ Vietnam).
References: (**ds**) Nobuchi 1967: 23; Schedl 1962b: 187, 1974c: 262. (**tx**) Anderson, W. H. & Anderson 1971: 34; Eggers 1939c: 116–118; Nunberg 1959a: 440; Schedl 1979c: 252.

***ursa* (Eggers)** 1923a: 172 (*Xyleborus*). Lectotype ♀; Haveri, Neu Guinea (Sudost); USNM, Washington, designated by Anderson & Anderson 1971: 35.
Distribution: Asia (Malaya), Indonesia (Celebes, Sumatra), New Guinea, Philippine Islands (Luzon), Solomon Islands.
References: (**ds**) Browne 1961c: 110, 1966: 248; Nobuchi 1979a: 407; Schedl 1936g: 528, 1966b: 75, 1969e: 156. (**tx**) Anderson, W. H. & Anderson 1971: 35; Beeson 1930: 41, 217; Eggers 1923a: 172–173, 1939b: 11; Nobuchi 1983: 304; Schedl 1936g: 528, 1940b: 434.

***ursinus* (Hagedorn)** 1908: 381 (*Xyleborus*). Holotype ♀; Sumatra, Si-Rambe; MNB, Berlin.
Distribution: Indonesia (Borneo/ Soemba Island, Sumatra), Philippine Islands (Mindoro).
Hosts: *Theobroma cacao*.
References: (**cn**) Yunus & Hua 1980: 231. (**ds**) Hagedorn 1910d: 112; Kleine 1913b: 162, 1914b: 268; Sampson 1919: 109; Schedl 1965g: 22, 1966b: 75; Yunus & Hua 1980;231. (**tx**) Beeson 1930: 41, 217; Eggers 1923a: 172–173, 1927b: 406, 1939b: 11; Hagedorn 1908: 381, 1910a: 157; Nobuchi 1983: 304; Nunberg 1959a: 441; Sampson 1919: 109; Schedl 1965g: 22.

***ursulus* (Eggers)** 1923a: 173 (*Xyleborus*). Syntypes ♀; Kintamani (Ost Bali, Sundainseln).
Figures: Nobuchi 1978a:pl. 2.
Distribution: Asia (Fujian in China/ Bengal, Nicobar Islands in India/ Malaya/ Thailand), Indonesia (Bali, Borneo, Java, Sumatra, Sunda Island), Philippine Islands (Luzon).
Hosts: *Celtis luzonicus*, *Ficus hauli*, *Gonostylus* sp.
References: (**hb**) Kalshoven 1959c: 143. (**ds**) Beaver & Browne 1978: 613; Browne 1961c: 110–111, 1965a: 189, 1984b: 287; Kalshoven 1959c: 143; Kleine 1934a: 176; Nobuchi 1978a: 25; Ohno, Yoneyama, & Nakazawa 1987a: 88, 1987b: 94; Ohno, Yoshioka, et al. 1989: 64; Schedl 1936d: 5, 1966b: 76, 1966g: 33, 1971c: 370, 1971f: 150. (**tx**) Eggers 1923a: 173, 1939b: 11; Nobuchi 1978a:pl. 2, 1983: 304; Schedl 1936d: 5, 1937e: 544, 1942d: 5, 1951i: 42, 91, 1954a: 144, 1965g: 24, 1979c: 261.

***zimmermanni* (Hopkins)** 1915b: 67 (*Anisandrus*). Holotype ♀; Biscayne, Florida [USA]; USNM, Washington.
Distribution: North America (Costa Rica/ Guatemala/ Chiapas in Mexico/ Florida in USA), South America (Venezuela).
Hosts: *Acer rubrum*, *Ardesia* sp., *Calliandra confusa*, *Chrysobalanus* sp., *Cupania guatemalensis*, *Ocotea catesbiana*.
Notes: (1) Wood 1962: 79 (to *Xylosandrus*). (3) Integration with *curtulus* is probable (SLW).
References: (**cn**) Blackman 1950. (**hb**) Blackman 1950; Chamberlin 1939: 445–446; Wood, S. L. 1982b: 769. (**ds**) Atkinson & Equihua 1985b: 237, 1986a: 422, 1988: 102; Baker, W. L. 1972: 271; Blackman 1950; Blackwelder & Blackwelder 1948; Blatchley & Leng 1916: 624; Bright 1968b: 1294; Chamberlin 1939: 445–446; Drooz 1985: 374; Leng 1920: 342; Wood, S. L. 1977a: 74, 1982b: 769. (**tx**) Blatchley & Leng 1916: 624; Bright 1968b: 1294; Chamberlin 1939: 445–446; Hopkins 1915b: 67–68; Wood, S. L. 1962: 79, 1966b: 33, 1982b: 769.

Genus *Cnestus* Sampson

CNESTUS SAMPSON 1911: 383. Type-species: *Cnestus magnus* Sampson, monobasic.
Tosaxyleborus Murayama 1950a: 49. Type-species: *Tosaxyleborus pallidipennis* Murayama =*Cnestus murayamai* Schedl, original designation. Synonymy: Browne 1955: 368.
References: (**tx**) Browne 1955: 368, 1963c: 54; Murayama 1950a: 49; Schedl 1962p: 207.
Keys: Nunberg 1972a: 476.
References: (**ay**) Nobuchi 1969a: 64. (**hb**) Browne 1961c: 173; Wood, S. L. 1986a: 83. (**ds**) Schedl 1966b: 78; Wood, S. L. 1986a: 83. (**tx**) Browne 1955: 357, 1963c: 54; Choo 1983: 96; Choo, Woo, & Nobuchi 1988b; Hopkins 1915b: 10; Nunberg 1972a: 476–477; Sampson 1911: 383–384; Schedl 1958k: 145, 1962p: 207; Wood, S. L. 1986a: 83.

***aterrimus* (Eggers)** 1927b: 400 (*Xyleborus*). Holotype ♀; Sumatra; Eggers Collection, in NHMW, Wien.
Distribution: Asia (Malaya/ Thailand), Australia, Indonesia (Java, Sumatra), New Guinea.
Hosts: *Canarium littorale*, *Castanopsis sumatrana*, *Cinnamomum iners*, *Clerodendron villosum*,

Elaeocarpus petiolatus, *Fissistigma elegana*, *Grewia paniculata*, *Scorodocarpus borneensis*, *Shorea acuminata*, *Swietenia macrophylla*, *Vitex pubescens*.
Notes: (1) Browne 1961c: 173 (to *Cnestus*).
References: (**ec**) Browne 1958b. (**hb**) Beaver & Browne 1975: 287; Browne 1958b, 1961c: 173; Kalshoven 1959c: 165–166. (**ds**) Beaver & Browne 1975: 287, 1978: 583; Browne 1961c: 173; Kalshoven 1959c: 165–166. (**tx**) Browne 1961c: 173; Eggers 1927b: 400; Schedl 1951i: 61, 88, 1954a: 140, 1958k: 145, 1979c: 30.

glaberrimus Schedl 1942c: 184 (*Xyleborus*). Holotype ♀; Neu-Guinea; Schedl Collection in NHMW, Wien. Synonymy: Browne 1961c: 173.
References: (**ds**) Schedl 1965g: 25. (**tx**) Browne 1961c: 173, 1973c: 173; Schedl 1942c: 184, 1965g: 25, 1979c: 105.

glabripennis Schedl 1942a: 189 (*Xyleborus*). Lectotype ♀; Malaya, Selangor, Ulu Gombak; Schedl Collection in NHMW, Wien. Synonymy: Schedl 1958k: 145.
References: (**tx**) Schedl 1942a: 189, 1951i: 61, 1958k: 145, 1979c: 106.

nitens Browne 1955: 358. Holotype ♀; Malay Peninsula: Selangor, Kepong; BMNH, London. Synonymy: Schedl 1958k: 145.
References: (**tx**) Browne 1955: 358; Schedl 1958k: 145.

***bicornioides* (Schedl)** 1952b: 368 (*Xyleborus*). Holotype ♀; Philippine Islands: Mindanao, Lolumbugan; Schedl Collection in NHMW, Wien.
Distribution: Asia (Malaya), Philippine Islands.
Hosts: *Shorea sumatrana*, *Swietenia macrophylla*.
Notes: (1) Browne 1961c: 174 (to *Cnestus*).
References: (**hb**) Browne 1961c: 174. (**ds**) Browne 1961c: 174; Schedl 1966b: 78. (**tx**) Browne 1955: 360, 1961c: 174; Nobuchi 1983: 304; Schedl 1952b: 368, 1958k: 145, 1979c: 39.

***bicornis* (Eggers)** 1923a: 194 (*Xyleborus*). Syntypes 2 ♀; Niederl. Indien.; MNB, Berlin, and Eggers Collection (USNM, Washington or NHMW, Wien ?).
Distribution: Asia (Assam in India/ Malaya), Indonesia (Java, Sumatra), Philippine Islands.
Hosts: *Altingia excelsa*, *Cinchona* sp., *Coffea robusta*, *Erythroxylon novagrantenae*, *Shorea bracteolata*, *S. leprosula*, *S. ovalis*, *S. sumatrana*.
References: (**cn**) Frohlich & Rodewald 1969: 99; Kalshoven 1951: 849; Miller 1933: 105–107, 125; Ultee 1931: 1–51. (**ec**) Kalshoven 1960b: 260; Norris 1979. (**hb**) Browne 1961c: 189; Kalshoven 1951: 849, 1959c: 164. (**ds**) Browne 1961c: 189; Kalshoven 1959c: 164. (**tx**) Eggers 1923a: 194, 1927b: 390, 1930d: 201; Nunberg 1959a: 416; Schedl 1942d: 32, 1952b: 368, 1958k: 145, 1979c: 39.

***bimaculatus* (Eggers)** 1927c: 88 (*Xyleborus*). Holotype ♂; Philippinen: Mindanao, Provinz Lanao, Iligan; USNM, Washington.
Distribution: New Guinea, Philippine Islands (Mindanao).
References: (**ds**) Nobuchi 1979a: 407; Schedl 1936g: 532, 1966b: 78. (**tx**) Anderson, W. H. & Anderson 1971: 6; Eggers 1927c: 88; Schedl 1958k: 145.

***cruralis* (Schedl)** 1975e: 456 (*Xyleborus*). Holotype ♀; Siam; Schedl Collection in NHMW, Wien [probably from Eggers Collection].
Distribution: Asia (Xizang [Tibet] in China/ Andaman Islands, Bengal in India/ Thailand).
Notes: (3) Schedl 1936j: 27, 1939e: 331 (*cruralis* Eggers, nomen nudum).
References: (**tx**) Schedl 1936j: 27, 1939e: 331, 1975e: 456, 1979c: 71.

***klapperichi* (Schedl)** 1955h: 46 (*Xyleborus*). Holotype ♀; Fukien: Kuatun, China; Klapperich Collection in Alexander Koenig Museum, Bonn?).
Distribution: Asia (Fujian in China).
References: (**tx**) Schedl 1955h: 46, 1960e: 172, 1979c: 133.

***maculatus* Browne** 1983d: 33. Holotype ♀; China: Sichuan, Kangding; IZAS, Beijing.
Distribution: Asia (Sichuan in China).
References: (**tx**) Browne 1983d: 33.

***magnus* Sampson** 1911: 383. Holotype ♀; Ceylon; BMNH, London.
Distribution: Asia (Sri Lanka).
Hosts: *Albizzia* spp., *Chloroxylon swietenia*, *Swietenia* spp.
References: (**cn**) Green 1912a: 39; Mathur & Singh 1961a: 79. (**ds**) Beeson 1961: 286; Bhasin, Roonwal, & Singh 1958; Green 1912a: 39; Mathur & Singh 1961a: 79; Schedl 1959a: 511, 1971a: 281. (**tx**) Browne 1955: 358–360; Green 1912a: 39; Hopkins 1914: 118–119; Sampson 1911: 383–384; Schedl 1958k: 145, 1959a: 511.

***murayamai* Schedl** 1962p: 207. Holotype ♀; Japan: Isa, Shimidzu, Hata-gun, Kochi Pref., Shikoku; Murayama Collection in USNM, Washington, automatic.
Figures: Nobuchi 1964:pl. 1, 1967:pl. 2.
Distribution: Asia (Japan/ Ryukyu Islands/ Taiwan).
Hosts: *Cinnamomum camphora*, *Machilus thunbergii*.
References: (**ds**) Choo 1983: 96; Choo & Woo 1985: 165; Nobuchi 1967: 24, 1985c: 28. (**tx**) Browne 1963c: 54; Choo 1983: 96; Nobuchi 1964: 131, 1967:pl. 2; Schedl 1962p: 207.

pallidipennis Murayama 1950a: 49 (*Tosaxyleborus*). Holotype ♀; Japan: Isa, Shimidzu, Hata-gun, Kochi pref., Shikoku; Murayama Collection in USNM, Washington, preoccupied by Eggers 1940.
References: (**ds**) Murayama 1952a: 120. (**tx**) Browne 1963c: 54; Murayama 1950a: 49, 1952: 20; Schedl 1962p: 207.

murayamai Browne 1963c: 54. Holotype ♀; Japan: Isa, Shimidzu, Hata-gun, Kochi pref., Shikoku; Murayama Collection in USNM, Washington, automatic.

Notes: (1) This is an unneeded replacement name for *pallidipennis* Murayama.
References: (**tx**) Browne 1963c: 54; Nobuchi 1964: 131; Schedl 1962p: 207.

***nitidiloides* (Schedl)** 1951i: 89 (*Xyleborus*). Holotype ♂; Java, Batoerraden, G. Slamet; Eggers Collection, in NHMW, Wien.
Distribution: Indonesia (Java).
References: (**tx**) Schedl 1951i: 89, 1979c: 169.

***nitidipennis* (Schedl)** 1951i: 88 (*Xyleborus*). Syntypes 2 ♀; Java, Batoerraden; Eggers Collection, in NHMW, Wien.
Distribution: Indonesia (Java/ Vietnam).
Hosts: *Eupatorium pallescens*.
Notes: (1) Schedl 1979c: 169 (citation of holotype invalid).
References: (**hb**) Kalshoven 1959c: 165. (**ds**) Kalshoven 1959c: 165; Nobuchi 1967: 22; Schedl 1969c: 52, 1974c: 262. (**tx**) Schedl 1951i: 88, 1954a: 142, 1979c: 169.

***nitidus* (Schedl)** 1951i: 87 (*Xyleborus*). Holotype ♀; Philippinen, Luzon, Baguio; Schedl Collection in NHMW, Wien.
Distribution: Philippine Islands (Luzon).
Hosts: *Ficus* sp.
References: (**ds**) Schedl 1966b: 78. (**tx**) Nobuchi 1983: 304; Schedl 1951i: 87, 1952b: 364, 1979c: 171.

***nudus* (Nunberg)** 1956: 209 (*Xyleborus*). Holotype ♀; Philippinen, Luzon, Baguio; Schedl Collection in NHMW, Wien, automatic.
Distribution: Philippine Islands (Luzon).
References: (**tx**) Nunberg 1956: 209; Schedl 1958k: 145, 1960i: 109.

punctulatus Schedl 1951i: 61 (*Xyleborus*). Holotype ♀; Philippinen, Luzon, Baguio; Schedl Collection in NHMW, Wien, preoccupied by Kurenzov 1948.
Notes: (1) Schedl 1958k: 145 (to *Cnestus*).
References: (**ds**) Schedl 1966b: 78. (**tx**) Nobuchi 1983: 304; Nunberg 1956: 209; Schedl 1951i: 61, 1952b: 364, 1958k: 145, 1960i: 106, 109.

***pallidipennis* (Eggers)** 1940d: 143 (*Xyleborus*). Holotype ♀; Java (Preanger, G. Tangkoeban Prahoe); Eggers Collection, in NHMW, Wien.
Distribution: Indonesia (Java).
References: (**ds**) Murayama 1953c, 1954b: 185. (**tx**) Eggers 1940d: 143–144; Murayama 1954b: 185; Schedl 1958k: 145, 1962p: 207, 1979c: 182.

***protensus* (Eggers)** 1930d: 201 (*Xyleborus*). Holotype ♀; Assam (Shillong, 6000 feet); FRI, Dehra Dun.
Distribution: Asia (Assam in India).
References: (**tx**) Eggers 1930d: 201; Schedl 1942a: 172, 1952b: 368, 1958k: 145.

***pseudopunctulus* (Schedl)** 1942a: 194 (*Xyleborus*). Syntypes ♀; Malaya, Kuala Lumpur; BMNH, London and Schedl Collection in NHMW, Wien.
Distribution: Asia (Malaya).
Notes: (1) Browne 1961c: 174 (to *Cnestus*).
References: (**tx**) Browne 1961c: 174; Schedl 1942a: 194, 1971c: 365.

***pseudosuturalis* Schedl** 1964k: 315. Lectotype ♂; Tonkin, Choganh; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 202.
Distribution: Asia (Tonkin Island in Vietnam).
References: (**tx**) Schedl 1964k: 315, 1979c: 202.

***rostratus* Schedl** 1977f: 502. Holotype ♀; N. Vietnam: Thai-Nguyen; Schedl Collection in NHMW, Wien.
Distribution: Asia (Vietnam).
References: (**tx**) Schedl 1977f: 502.

***rotundatus* Schedl** 1975f: 357. Holotype ♀; Block 10, N.G.I. logging area, Gabensis, Morobe District, New Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
Hosts: *Dracontomelon* sp.
References: (**tx**) Schedl 1975f: 357.

***suturalis* (Eggers)** 1930d: 200 (*Xyleborus*). Holotype ♀; Assam (Shillong, 6000 feet); FRI, Dehra Dun.
Distribution: Asia (Assam in India/ Malaya/ Tonkin Island in Vietnam), Indonesia (Java).
Hosts: *Acacia* sp., *Dipterocarpus* sp., *Eupatorium pallescens*, *Hopea* sp., *Melia* sp., *Piper* sp., *Shorea* sp., *Swietenia mahagoni*, *Terminalia myriocarpa*, *Vatica* sp.
References: (**cn**) Mathur & Singh 1961b: 34. (**hb**) Browne 1961c: 189; Kalshoven 1959c: 165. (**ds**) Kalshoven 1959c: 165; Schedl 1937f: 15, 1962b: 187. (**tx**) Eggers 1930d: 200–201, 1937f: 15–17, 1940d: 143, 1942d: 5; Mathur & Singh 1961b: 34; Schedl 1942a: 189, 1951i: 87, 1979c: 248.

***triangularis* (Schedl)** 1975f: 370 (*Xyleborus*). Holotype ♀; Upper Manki logging area, Bulolo, Morobe Dist., New Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1975f: 370, 1979c: 255.

Genus *Xyleborinus* Reitter

XYLEBORINUS REITTER 1913a: 79, 83. Type-species: *Bostrichus saxeseni* Ratzeburg, subsequent designation by Swaine 1918a: 50.
Keys: Wood 1982b: 842 for North and Central America.
References: (**ay**) Francke-Grosmann 1958: 139–144. (**hb**) Beaver 1976a: 22; Hopping & Jenkins 1933: 14; Wood, S. L. 1982b: 841, 1986a: 84. (**ds**) Scheerpeltz & Winkler 1930: 258; Wood, S. L. 1982b: 841, 1986a: 84. (**tx**) Arnett 1960: 1045, 1968: 1045; Balachowsky 1949a: 122; Choo 1983: 113; Choo, Woo, & Nobuchi 1988b; Wood, S. L. 1982b: 841, 1986a: 84.

***aduncus* (Schedl)** 1961e: 148 (*Xyleborus*). Holotype ♀; Madagascar, Montagne d'Ambre; IRSM, Madagascar.
Figures: Schedl 1961e: 149, 1977b: 217.
Distribution: Madagascar.
Hosts: *Cassipourea* sp., *Cinchona succerubra*, *Olea ambrensis*.
References: (**ds**) Schedl 1977b: 217. (**tx**) Schedl 1961e: 148–149, 1977b: 217–218, 1979c: 12.

aduncus profondus Schedl 1961e: 149 (*Xyleborus*). Holotype ♀; Madagascar: Ambodivoangy; IRSM, Madagascar.
References: (**tx**) Schedl 1961e: 149, 1977b: 218, 1979c: 12.

aduncuius Schedl 1961e: 150 (*Xyleborus*). Holotype ♀; Madagascar, Morafenobe, foret Mahajeby; IRSM, Madagascar.
References: (**tx**) Schedl 1961e: 150.

***aemulus* (Wollaston)** 1869: 321 (*Tomicus*). Holotype ♀; St. Helena; BMNH, London.
Figures: Schedl 1962j: 531.
Distribution: Africa (South Africa), St. Helena Island.
Hosts: *Acacia karroo*, *Acalypha glabrata*, *Commidendron robustum*, *Fagara capensis*, *Gonionia camassi*, *Ocotea bullata*, *Olea capensis*, *Podocarpus falcatus*, *Quercus* sp., *Rapanea melanophloeos*, *Rhus mucronata*, *Schotia latifolia*, *Vepris undulata*, *Virgilia capensis*, *Xymalos monospora*.
References: (**cn**) Anonymous 1970c: 14. (**ec**) Walt, Scott, & Van Der Klift 1971a, 1971b: 451. (**ds**) Anonymous 1970c: 14; Decelle 1972a, 1972b: 517–518; Gemminger & Harold 1872: 2684; Hagedorn 1910d: 98; Kleine 1913b: 159; Schedl 1962b: 59, 1962j: 531, 1965g: 20, 1965h: 112, 1969d: 6, 1970h: 180, 1975k: 277, 1982: 279. (**tx**) Hagedorn 1910a: 152; Schedl 1957b: 151, 1957d: 84, 1959q: 709, 1962j: 531, 1962k: 1198, 1965g: 20; Wollaston 1869: 321.

***alienus* (Schedl)** 1977c: 398 (*Xyleborus*). Holotype ♀; Sudafrika: Humansdorp, Kapprovinz; Schedl Collection in NHMW, Wien.
Distribution: Africa (South Africa).
References: (**tx**) Schedl 1977c: 398.

***alni* (Niisima)** 1909: 160 (*Xyleborus*). Holotype ♀; Sapporo (Mitsuhashi), Tomakomai; Nobuchi Collection, Ibaraki.
Distribution: Asia (Japan/ E USSR), Europe (Czechoslovakia).
Hosts: *Alnus* spp., *Betula japonica*, *Tilia amurensis*.
References: (**cn**) Kurenzov 1935c: 188. (**ec**) Kurenzov 1934a: 50. (**hb**) Kurenzov 1935a: 20, 38, 1948b: 114; Stark 1952: 438. (**ds**) Gemminger & Harold 1872: 2685; Kleine 1913b: 159, 1914b: 261, 1934a: 172; Knizek 1988; Kurenzov 1934a: 50, 1935a: 20, 38, 1935c: 188, 1936a: 109–110, 1936b: 350, 1938a: 59; Murayama 1954b: 202; Stark 1952: 438. (**tx**) Eggers 1933f: 53; Eichhoff 1868d: 419; Hagedorn 1910a: 152; Kurenzov 1941a: 188, 1948b: 114; Murayama 1954b: 202; Niisima 1909: 160; Schedl 1934f: 1645, 1940c: 208, 1979c: 16; Stark 1952: 438.

***andrewesi* (Blandford)** 1896b: 227 (*Xyleborus*). Holotype ♀; India, Belgaum [Maharashtra]; BMNH, London.
Figures: Nunberg 1978: 105.
Distribution: Africa (Kenya/ Seychelles Islands/ Zambia), Antilles Islands (introduced: Jamaica), Asia (Bangladesh/ Burma/ China/ Andaman Islands, Assam, Bengal, Bihar, Karnataka, Madhya Pradesh, Maharashtra, Tamil Nadu, Uttar Pradesh in India/ Japan/ Malaya/ Nepal/ Ryukyu Islands/ Sri Lanka/ Thailand/ Vietnam), Indonesia (Borneo, Java), Micronesia (Timor in Mariana Islands), New Guinea, New Zealand, Philippine Islands.
Hosts: Many listed by Browne 1961c: 120, Schedl 1962j: 486–488. *Albizzia* spp., *Anacardium* sp., *Anthocephalus* sp., *Artocarpus dadah*, *Buchanania* sp., *Canarium* sp., *Cinnamomum* sp., *Cryptocaria* sp., *Garuga* sp., *Isonandra* sp., *Mallotus* sp., *Mangifera indica*, *Myristica indica*, *Odina wodier*, *Palaquium eliptica*, *Pterospermum* sp., *Randia* sp., *Samanea saman*, *Shorea robusta*, *Tectona grandis*.
References: (**bv**) Gray, B. 1974c. (**cn**) Beaver 1988a: 63; Chandra 1981: 287; Kalshoven 1924c; Kleine 1932a: 307; Mathur & Singh 1960b: 6, 1961a, 1961b: 13; Pierce, W. D. 1917: 193; Roonwal 1954: 45; Stebbing 1914: 593. (**ec**) Beeson 1923; Stebbing 1914: 593. (**hb**) Beaver 1988a: 63; Beaver & Browne 1975: 297, 1978: 603; Beaver & Loyttyniemi 1985a: 72; Beeson 1915: 8–11, 1916a: 221, 1923; Browne 1961c: 120–122; Chandra 1981: 287; Gray, B. 1974c; Kalshoven 1924c: 6–25, 1958a: 186–189; Kleine 1932a: 307; Loyttyniemi, Beaver, & Loyttyniemi 1984; Schedl 1962j: 485; Stebbing 1914: 593. (**ds**) Beaver 1988a: 63; Beaver & Browne 1975: 297, 1978: 603; Beaver & Loyttyniemi 1985a: 72; Beeson 1916a, 1923: 164, 1930: 226, 1941: 393; Bhasin, Roonwal, & Singh 1958: 41, 68; Bright 1985c: 173; Browne 1935: 3, 1941: 67, 1949: 178–189, 1961c: 120; Chandra 1981; Hagedorn 1910d: 99; Kalshoven 1958a: 186, 1959: 153; Kleine 1913b: 159, 1914b: 270, 1928: 307, 1932a: 307, 1934a: 172; Mathur & Singh 1960b: 6, 1961a: 13, 1961b: 14; Nobuchi 1979a: 406; Pierce, W. D. 1917: 193; Roonwal 1954: 45, 53, 67; Schedl 1962j: 485, 1969d: 12, 1971a: 277, 1973b: 211, 1973c: 378, 1975a, 1975e: 450, 1975i: 346, 1975j: 294; Wichmann 1954: 522; Yin, Huang, & Li 1984: 157. (**tx**) Beaver & Loyttyniemi 1985a: 72; Beeson 1930: 226; Blandford 1896b: 227; Bright 1985c: 173; Eggers 1922b: 174, 1925: 153–154; Hagedorn 1910a: 152; Nunberg 1978: 105–106; Sampson 1919: 110, 1923b: 287–288; Schedl 1939e: 332, 1942d: 7, 1962j: 485; Stebbing 1914: 593; Wood, S. L. 1989: 176; Yin, Huang, & Li 1984: 157.

persphenos Schedl 1970a: 219 (*Xyleborus*). Holotype ♀; New Guinea: Simbai, Madang Dist.; CSIRO, Canberra. Synonymy: Beaver & Browne 1978: 603, Wood 1989: 176.
References: (**tx**) Schedl 1970a: 219, 1979c: 191; Wood, S. L. 1989: 176.

insolitus Bright 1972d: 77 (*Xyleborus*). Holotype ♀; Irish Town, St. Andrew Parish, Jamaica; CNCI, Ottawa. Synonymy: Bright 1985: 173.
References: (**tx**) Bright 1972d: 77, 95, 1985: 179; McNamara 1977: 200.

***ankius* (Schedl)** 1975f: 361 (*Xyleborus*). Holotype ♀; Upper Manki logging area, Bulolo, Morobe Dist. [New Guinea]; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1975f: 361, 1979c: 21.

***armatus* (Schaufuss)** 1891: 30 (*Xyleborus*). Holotype ♀; Madagascar; Hamburg Museum, lost.
Distribution: Madagascar.
References: (**ds**) Alluaud 1900: 440; Fairmaire 1892b; Frappa 1933: 179; Hagedorn 1910d: 99; Kleine 1913b: 160, 1914b: 326; Spahr 1981; Voeltzkow 1913: 256. (**tx**) Eggers 1920: 44; Fairmaire 1892b; Hagedorn 1910a: 152; Keler 1928: 33; Schaufuss 1891: 30; Schedl 1953d: 102, 1977b: 197.

***artelineatus* (Beeson)** 1929: 239 (*Xyleborus*). Holotype ♀; Upolu: Malololelei, Samoa; BMNH, London.
Distribution: Fiji Islands, Samoan Islands.
References: (**ds**) Beeson 1938b: 291; Spahr 1981. (**tx**) Beeson 1929: 239; Schedl 1951k: 138, 1977b: 197.

validicornis Schedl 1950f: 52 (*Xyleborus*). Lectotype ♀; Fiji: 2700 ft., Tholo North, west slope of Mt. Victoria, 3000 ft.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 263. Synonymy: Beaver 1991: 94.
References: (**ec**) Roberts 1977a: 267. (**hb**) Roberts 1977a: 267. (**ds**) Browne 1974a: 65; Roberts 1977a: 267. (**tx**) Beaver 1991: 94; Schedl 1950f: 52, 1979c: 263.

***artestriatus* (Eichhoff)** 1878: 507 (*Xyleborus*). Holotype ♀; Asiae India orientalis; Hamburg Museum, lost.
Distribution: Asia (Burma/ Bengal, Madhya Pradesh, Uttar Pradesh in India/ Malaya/ Sri Lanka/ Vietnam), Australia (Darwin, Queensland), Bismarck Islands, Fiji Islands, Indonesia (Borneo, Java, Sumatra), New Guinea.
Hosts: *Eugenia jambolana*, *Ficus religiosa*, *Heritiera fomes*, *Juglans regia*, *Lannea grandis*, *Mallotus philippinensis*, *Mangifera indica*, *Phyllanthus emblica*, *Semecarpus anacardium*, *Shorea robusta*.
References: (**bv**) Gray, B. 1974c. (**cn**) Wylie & Shanahan 1975. (**hb**) Browne 1961c: 148; Gray, B. 1974c; Kalshoven 1958a: 186, 1959c: 147; Wylie & Shanahan 1975. (**ds**) Browne 1961c: 148, 1966: 252, 1970: 541; Hagedorn 1910d: 99; Kalshoven 1958a: 186, 1959c: 147–148; Kleine 1913b: 160, 1914b: 270; Schedl 1936d: 2, 1936g: 528, 1937j: 15–17, 1959a: 506, 1962b: 184, 1964c: 306, 1965a: 340, 1969c: 52, 1971c: 366, 1971f: 148, 1977d: 280. (**tx**) Beeson 1929: 240; Eggers 1923a: 196–197, 1925: 154, 1927c: 101, 1932b: 206; Eichhoff 1878b: 507; Hagedorn 1910a: 152; Schedl 1935j: 1, 1939e: 332, 1942d: 6, 1954a: 140, 1959a: 506; Wood, S. L. 1989: 176.

laticollis Blandford 1896b: 226 (*Xyleborus*). Holotype ♀; India, Kanara; BMNH, London. Synonymy: Schedl 1958k: 152.
References: (**bv**) Beeson 1917. (**cn**) Kleine 1932a: 307; Mathur & Singh 1961a: 32. (**ec**) Beeson 1923. (**hb**) Beeson 1915: 8–11, 1916a: 221, 1917, 1923; Chandra 1981; Kleine 1932a: 307. (**ds**) Beeson 1916a, 1923, 1930: 244, 1961: 306; Hagedorn 1910d: 106; Kleine 1913b: 161, 1914b: 270, 1932a: 307; Mathur & Singh 1961a: 32; Sampson 1921: 33; Schedl 1936j: 32. (**tx**) Beeson 1930: 244; Blandford 1896b: 226; Hagedorn 1910a: 155; Sampson 1919: 112, 1921: 32–33; Schedl 1958k: 152.

rugipennis Schedl 1953c: 303 (*Xyleborus*). Lectotype ♀; Malaya, Pahang, Cameron Highlands, Sinking Kial; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 216. Synonymy: Wood 1989: 176.
References: (**ds**) Browne 1961c: 151. (**tx**) Schedl 1953c: 303, 1979c: 216; Wood, S. L. 1989: 176.

***attenuatus* (Blandford)** 1894d: 114 (*Xyleborus*). Holotype ♀; Nikko, Japan; BMNH, London.
Distribution: Asia (Japan/ Korea).
Hosts: *Diospyros kaki*, *Fagus crenata*, *Hamamelis japonica*, *Magnolia obovata*, *Prunus* sp., *Quercus stenophylla*.
References: (**bv**) Choo, Woo, & Park 1988. (**cn**) Murayama 1954a: 15; Shiraki 1952; Ueno 1960. (**ds**) Blandford 1894c; Cho 1957; Choo 1983: 105; Choo & Woo 1985: 166; Choo, Woo, & Nobuchi 1988a: 134; Choo, Woo, & Park 1988; Hagedorn 1910d: 99; Kleine 1913b: 160, 1914b: 260; Ko 1969: 284; Murayama 1929b: 2, 1937b: 375, 1949c: 102, 1953a: 16, 1953c: 156, 1954a: 15, 1954b: 175; Nobuchi 1967: 21; Shiraki 1952; Ueno 1960. (**tx**) Blandford 1894d: 114; Choo 1983: 105; Hagedorn 1910a: 152; Murayama 1930: 22, 26, 31, 1937b: 375, 1953a: 16, 1954b: 175; Niisima 1909: 161; Schedl 1934f: 1645.

***beaveri* Browne** *in* Beaver & Browne 1978: 603. Holotype ♀; Malaysia: Penang; BMNH, London.
Figures: Beaver & Browne 1978: 604.
Distribution: Asia (Malaya).
References: (**tx**) Beaver & Browne 1978: 603–605.

***bicornatulus* (Wood)** 1967c: 137 (*Xyleborus*). Holotype ♀; Moravia, Cartago, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica/ Panama), South America (Colombia).
Hosts: *Ochroma* sp., *Theobroma cacao*, palm log.
References: (**hb**) Wood, S. L. 1982b: 847. (**ds**) Wood, S. L. 1982b: 847. (**tx**) McNamara 1977: 200; Wood, S. L. 1967c: 137, 1982b: 847.

***buscki* (Hopkins)** 1915b: 63 (*Xyleborus*). Holotype ♀; Guadeloupe, West Indies; USNM, Washington.
Distribution: Antilles Islands (Dominica/ Guadeloupe).
Notes: (1) Bright 1981c: 156 (to *Xyleborinus*).
References: (**ds**) Blackwelder 1947: 779; Bright 1981c: 156, 1985c: 173. (**tx**) Bright 1981c: 156, 1985c: 173; Hopkins 1915b: 61–63.

***celatus* Wood** 1974a: 43. Holotype ♀; 8 km S Colonia (near Buenaventura), Valle de Cauca, Colombia; Wood Collection.
Distribution: South America (Colombia).
Hosts: *Icica altisima*, *Inga* sp., *Protium nervosum*.
References: (**tx**) Wood, S. L. 1974a: 43.

***collarti* (Eggers)** 1932d: 300 (*Xyleborus*). Holotype ♀; Congostaat (Foret de Kawa); USNM, Washington.
Figures: Nunberg 1963b:pl. 9, figs. 5–8.
Distribution: Africa (Angola/ Cameroon/ Ghana/ Tanzania/ Zaire).
Hosts: *Acacia* sp., *Cinchona* sp., *Conopharyngia* sp., *Galiniera coffeoides*, *Haronga paniculata*, *Milletia ferruginea*, *Solanum aculeastrum*, *Syzygium congolense*, *Trichilia heudelotii*, *Turraeanthus africana*.
Notes: (3) Browne 1973a: 296 (described male).
References: (**hb**) Roberts 1969: 131; Schedl 1962j: 490. (**ds**) Ferreira 1965: 1121; Schedl 1959p: 19, 1962j: 490;Thompson, G. H. 1963: 71. (**tx**) Anderson, W. H. & Anderson 1971: 9; Browne 1973a: 296; Eggers 1932d: 300–301; Nunberg 1963b: 24, pl. 9; Schedl 1952j: 4, 1953g: 242, 1954e: 52, 1962j: 490, 1962k: 1099, 1979c: 60.
semipilosus Eggers 1932d: 300 (*Xyleborus*). Holotype ♀; Congostaat (Katanga: Lufudizi); MRCB, Tervuren. Synonymy: Schedl 1962q: 490.
References: (**tx**) Eggers 1932d: 300; Nunberg 1963b:pl. 26; Schedl 1962q: 490.

***cuneidentis* (Schedl)** 1961e: 151 (*Xyleborus*). Holotype ♀; Madagascar, Ambodivoangy; IRSM, Madagascar.
Distribution: Madagascar.
References: (**tx**) Schedl 1961e: 151, 1977b: 196, 1979c: 71.

***cuneolosus* (Schedl)** 1959a: 510 (*Xyleborus*). Holotype ♀; Ceylon: Millawitiya Estate; Schedl Collection in NHMW, Wien.
Distribution: Asia (Sri Lanka).
References: (**ds**) Schedl 1959a: 510. (**tx**) Schedl 1959a: 510, 1977b: 218, 1979c: 72.

***cupulatus* (Schedl)** 1961e: 150 (*Xyleborus*). Holotype ♀; Madagascar, Perinet; IRSM, Madagascar.
Distribution: Madagascar.
Hosts: *Calophyllum chapelieri*, *Garcinia verrucosa*, *Weilmannia* sp..
References: (**tx**) Schedl 1961e: 150, 1977b: 218, 1979c: 72.

***dentellus* (Schedl)** 1953d: 102 (*Xyleborus*). Lectotype ♀; Madagascar, Mt. d'Ambre; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 77.
Figures: Schedl 1977b: 213.
Distribution: Madagascar.
Hosts: *Uapaca* sp.
Notes: (3) Schedl 1965c: 71 (described male).
References: (**ds**) Schedl 1977b: 212. (**tx**) Schedl 1953d: 102, 1965c: 71, 1977b: 212–213, 1979c: 77.

***diapiformis* (Schedl)** 1961e: 155 (*Xyleborus*). Holotype ♀; Madagascar, Perinet; IRSM, Madagascar.
Distribution: Madagascar.
Hosts: *Chrysophyllum boivinianum*.
References: (**ds**) Schedl 1977b: 207. (**tx**) Schedl 1961e: 155, 1977b: 207, 1979c: 80.

***dirus* Wood** 1974a: 41. Holotype ♀; Rincon de Osa, Puntarenas, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica), South America (Colombia).
Hosts: *Cespedesia macrophylla*.
References: (**hb**) Wood, S. L. 1982b: 845. (**ds**) Wood, S. L. 1982b: 845. (**tx**) Wood, S. L. 1974a: 41, 1982b: 845.

***diversus* (Schedl)** 1954e: 80 (*Xyleborus*). Lectotype ♀; Gold Coast, Bekwai; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 83.
Distribution: Africa (Angola/ Fernando Poo Island/ Ghana/ Ivory Coast/ Zaire).
Hosts: *Anthocleista nobilis*, *Trichilia* sp., *Triplochiton scleroxylon*.
References: (**hb**) Pollet 1977; Schedl 1962j: 493. (**ds**) Ferreira 1965: 1122; Pollett 1977; Schedl 1959p: 20, 1962j: 493, 1971g: 193, 1972e: 283, 1979b: 416; Thompson, G. H. 1963: 71. (**tx**) Schedl 1954e: 52, 80, 1962j: 493, 1979c: 83.

° ***excavatus* (Hagedorn)** 1907b: 111 (*Xyleborus*). Syntypes 6 ♀; Madagaskarkopal; Hamburg Museum, lost.
Distribution: Madagascar (fossil in copal).
References: (**ds**) Begein 1907: 223; Hagedorn 1907a: 261, 1910d: 104, 1913b: 256; Kleine 1912a: 212, 1913b: 161, 1914b: 326; Schedl 1977b: 219; Spahr 1981. (**tx**) Hagedorn 1907b: 111, 1910a: 152–153; Keler 1928: 30; Schedl 1961e: 148, 1977b: 219, 1979c: 93.

***exiguus* (Walker)** 1859: 260 (*Bostrichus*). Holotype ♀; Ceylon; BMNH, London.
Figures: Nobuchi 1978a:pl. 4, Wood 1960a: 58.

Distribution: Asia (Burma/ Andaman Islands, Assam, Bengal, Nicobar Islands in India/ Malaya/ Nepal/ Sri Lanka/ Thailand/ Vietnam), Fiji Islands, Indonesia (Borneo, Java, Sumatra), Micronesia (Guam, Truk in Mariana Islands, Palau Islands), New Guinea, Philippine Islands, Society Islands, Solomon Islands (Rennell Island).

Hosts: *Artocarpus* sp., *Bombax malabaricum*, *Canarium euphyllum*, *Cinnamomum iners*, *Dipterocarpus zeylanicus*, *Eucalyptus deglupta*, *Hevea brasiliensis*, *Parkia speciosa*, *Pterocarpus dalbergoides*, *Quercus* sp., *Samonea saman*, *Terminalia bialata*.

References: (**cn**) Mathur & Singh 1960b: 43, 1961b: 28; Ranawera 1959: 78; Roonwal 1954: 85, 1959: 78. (**hb**) Beaver & Browne 1978: 608; Browne 1936a, 1961c: 122; Mathur & Singh 1960b: 43, 1961b: 28; Speyer 1923: 20. (**ds**) Beaver & Browne 1975: 298; Beeson 1930: 233–234, 1935a: 202, 1935b, 1938b: 202; Bhasin, Roonwal, & Singh 1958; Browne 1936a, 1961c: 122–123, 1966: 255–256, 1968c: 113; Eggers 1926a; Froggatt 1936; Gemminger & Harold 1872: 2690; Hagedorn 1910d: 54, 104; Kleine 1913b: 127, 161, 1914b: 273, 278, 1934a: 172; Lacordaire 1866: 383; Mathur & Singh 1960b: 43, 1961b: 28; Nobuchi 1978a: 43, 1980a; Nunberg 1964a: 236; Ohno, Yoneyama, & Nakazawa 1982a: 4, 1982b: 8, 1987a: 88, 1987b: 94; Ohno, Yoshioka, et al. 1988a: 93, 1989: 61; Roonwal 1954: 85; Schedl 1936g: 528, 1936j: 21, 1938g: 426, 1959a: 506, 1965a: 340, 1965g: 22, 1966b: 53, 1969a: 206, 1969e: 156, 1971a: 227, 1971f: 148, 1972b: 226, 1973b: 211, 1975j: 294; Thomas, R. T. S. 1960a, 1960b; Wood, S. L. 1960a: 51. (**tx**) Beeson 1930: 57–58, 283, 1935a: 118, 1935b; Eggers 1925;154, 1926a: 300, 1927b: 407; Ferrari 1867: 75; Hagedorn 1910a: 154, 1910d: 104; Lacordaire 1866: 383; Motschulsky 1863: 511; Nobuchi 1978a:pl. 4, 1983: 302; Schedl 1933e: 106, 1939e: 332, 1942a: 170, 1942c: 163, 1942d: 7, 1950f: 40, 1951k: 138, 1952b: 364, 1954a: 141, 1958k: 155, 1959a: 506, 1962p: 207, 1965g: 22; Walker 1859: 260; Wood, S. L. 1960a: 51, 58–60.

muriceus Eichhoff 1878b: 506 (*Xyleborus*). Syntypes ♀; Asie India; Hamburg Museum, lost.

Synonymy: Eggers 1925: 154.

References: (**tx**) Beeson 1935: 118; Eggers 1925: 154; Eichhoff 1878b: 506; Wood, S. L. 1960a: 60.

***forcipatus* (Schedl)** 1957d: 104 (*Xyleborus*). Holotype ♀; Congo Belge: Kivu, Mulungu; MRCB, Tervuren.

Figures: Nunberg 1963b:pl. 14, figs. 7–8, Schedl 1962j: 524.

Distribution: Africa (Zaire).

Hosts: *Acridocarpus fraxinifolius*, *Eucalyptus citriodora*.

References: (**ds**) Mayne & Donis 1962: 319; Schedl 1962j: 523. (**tx**) Nunberg 1963b: 32, pl. 14; Schedl 1957d: 104, 1962j: 523–524, 1979c: 98.

***forficuloides* (Schedl)** 1951j: 24 (*Xyleborus*). Lectotype ♀; Madagascar, Tsimbazaza; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 98.

Figures: Schedl 1961e: 150, 1977b: 215.

Distribution: Madagascar.

Hosts: *Chrysophyllum boivianum*, *Coleus* sp., *Ekebergia* sp., *Eleocarpus* sp., *Eugenia* cf. *jambolana*, *Garcinia verrucosa*, *Leptolaene multiflora* var. *cuspidata*, *Mangifera indica*, *Neodypsis baroni*, *Neotina boursii*, *Senecio erechtitoides*, *Weilmannia* sp.

References: (**hb**) Paulian 1951: 28. (**ds**) Beaver & Loyttyniemi 1985a: 72; Paulian 1951: 28. (**tx**) Beaver & Loyttyniemi 1985a: 72; Schedl 1951j: 24, 1953d: 70, 1961e: 150, 1977b: 213–215, 1979c:98.

forficuloides dentibaris Schedl 1961e: 150 (*Xyleborus*). Holotype ♀; Madagascar, Montagne d'Ambre; IRSM, Madagascar.

References: (**ds**) Schedl 1977b: 214. (**tx**) Schedl 1961e: 150, 1977b: 214–215, 1979c: 98.

forficuloides pinguis Schedl 1961e: 150 (*Xyleborus*). Holotype ♀; Madagascar: Perinet; IRSM, Madagascar.

References: (**tx**) Schedl 1961e: 150–151, 1977b: 215, 1979c: 98.

***forficulus* (Eggers)** 1922b: 171 (*Xyleborus*). Syntypes ♀; Sudl. Makonde Plateau in Deutsch-Ostafrika; Methner Collection and Eggers Collection USNM, Washington or NHMW, Wien?).

Figures: Nunberg 1963b:pl. 15, figs. 3–6.

Distribution: Africa (Angola/ Kenya/ Mozambique/ South Africa/ Tanzania/ Zaire/ Zimbabwe/ Zambia).

Hosts: *Coleus* sp.

References: (**hb**) Loyttyniemi, Beaver, & Loyttyniemi 1984. (**ds**) Browne 1980b: 381; Ferreira 1965: 381; Nunberg 1961a: 330; Schedl 1959p: 20, 1962j: 524, 1965e: 354, 1969d: 4, 1972k: 296. (**tx**) Eggers 1922b: 171–172, 1930d: 202, 1943c: 66; Nunberg 1963b: 33, pl. 15; Schedl 1952g: 52, 1952j: 4, 1955d: 271, 1955i: 212, 1957d: 84, 104, 1962j: 524.

***gracilicornis* (Schedl)** 1977e: 45 (*Xyleborus*). Holotype ♀; San Francisco Golera, El Salvador; Schedl Collection in NHMW, Wien.

Distribution: North America (El Salvador).

Hosts: *Quercus* sp.

References: (**ds**) Wood, S. L. 1982b: 844. (**tx**) Schedl 1977e: 45; Wood, S. L. 1982b: 844.

***gracilipennis* (Schedl)** 1957d: 106 (*Xyleborus*). Holotype ♀; Congo Belge: Yangambi; MRCB, Tervuren.

Figures: Nunberg 1963b:pl. 15–16.

Distribution: Africa (Ghana/ Zaire).

Hosts: *Anthonotha macrophylla*, *Clitandra* sp., *Croton haumanianus*, *Dialium corbisieri*,

Macaranga sp., *Microcos pinnatifida*, *Musanga cecropioides*, *Peltophorum pterocarpum*, *Staudtia stipitata*, *Trichila* sp.
References: (**hb**) Schedl 1962j: 494. (**ds**) Schedl 1962j: 494. (**tx**) Nunberg 1963b: 34, pl. 15–16; Schedl 1957d: 106, 1962j: 60, 1962k: 1100, 1979c: 107.

***gracilis* (Eichhoff)** 1868c: 145 (*Xyleborus*). Lectotype ♀; Brasilia; USNM, Washington, designated by Anderson & Anderson 1971: 14.
Figures: Pedrosa-Macedo & Schonherr 1985: 30.
Distribution: Africa (Azores Islands), Antilles Islands (Guadeloupe), North America (Costa Rica/ Panama/ Florida, Louisiana, North Carolina in USA), South America (Argentina/ Brazil/ Colombia/ Galapagos Islands/ Venezuela).
Hosts: *Cedrela fissilis*, *Marcgravida* sp., *Pinus elliottii*, *Terminalia* sp., *Theobroma cacao*.
Notes: (3) Schedl 1948b: 278 (described male).
References: (**hb**) Viana 1964: 124. (**ds**) Blackwelder 1947: 779; Bright 1985c: 173, 1987b; Gemminger & Harold 1872: 2685; Hagedorn 1910d: 105; Kleine 1913b: 161, 1914b: 337; Nunberg 1958a: 481, 1971: 58; Pedrosa-Macedo & Schonherr 1985: 30; Schedl 1966d: 89, 1967d: 3, 1970e: 83, 1971f: 149, 1973d: 158, 1974e: 51, 1976a: 54; Schonherr & Pedrosa-Macedo 1981: 56; Terra 1987: 25; Viana 1964: 124; Weber, B. C. 1982a. (**tx**) Anderson, W. H. & Anderson 1971: 14; Bright 1985c: 173; Eggers 1941a: 106; Eichhoff 1868c: 145, 1878b: 364–365; Hagedorn 1910a: 154; Hopkins 1915b: 61; Nunberg 1958a: 481; Pedrosa-Macedo & Schonherr 1985: 30; Schedl 1937h: 169, 1948f: 278, 1951h: 285, 1952a: 446, 1979c: 108; Terra 1987: 25; Wood, S. L. 1989: 176, Wylie & Yule 1977.

aspericauda Eggers 1941a: 106 (*Xyleborus*). Holotype ♀; Guadeloupe; Fleutiaux Collection. Synonymy: Bright 1985c: 177.
References: (**hb**) Beaver 1976a: 23; Wood, S. L. 1982b: 848. (**ds**) Atkinson & Equihua 1986a: 421; Beaver 1976a: 23; Estrada & Atkinson 1988: 207; Wood, S. L. 1977a: 73, 1982b: 848. (**tx**) Bright 1985c: 177; Eggers 1941a: 106; Wood, S. L. 1982b: 848.

neogracilis Schedl 1954b: 46 (*Xyleborus*). Lectotype ♀; Brasilien: Parana, Rondon; Schedl Collection in NHMW, Wien. Synonymy: Bright 1985c: 177, Wood 1989: 176.
References: (**ds**) Schedl 1967d: 3. (**tx**) Bright 1985c: 177; Schedl 1954b: 46, 1979c: 164; Wood, S. L. 1989: 176.

***heveae* (Schedl)** 1957d: 97 (*Xyleborus*). Holotype ♀; Congo Belge: Kivu, route Tshibinda-Bunyakiri, Yangambi; MRCB, Tervuren.
Figures: Nunberg 1963b:pl. 16, fig. 1.
Distribution: Africa (Zaire).
Hosts: *Albizzia* sp., *Hevea brasiliensis*.
References: (**hb**) Schedl 1962j: 495. (**ds**) Schedl 1962j: 495. (**tx**) Nunberg 1963b: 35, pl. 16–17; Schedl 1957d: 97, 1962j: 495, 1979c: 116.

***intersetosus* (Blandford)** 1898b: 211 (*Xyleborus*). Holotype ♀; Tamahu, Vera Paz, Guatemala; BMNH, London.
Distribution: Antilles Islands (Guadeloupe), North America (Costa Rica/ Guatemala/ Isla del Coco/ Chiapas, Veracruz in Mexico/ Panama), South America (Brazil/ Colombia/ Suriname/ Venezuela).
Hosts: *Alexa imperatricia*, *Sloanea multiflora*, *Theobroma cacao*, *Vismia guianensis*.
References: (**cn**) Cleare 1924: 65–68. (**hb**) Wood, S. L. 1982b: 843. (**ds**) Atkinson & Equihua 1986a: 421; Bright 1982a: 128; Hagedorn 1910d: 106; Kleine 1913b: 161; Wood, S. L. 1982b: 843. (**tx**) Blandford 1898b: 211; Eggers 1940a; Hagedorn 1910a: 154; Wood, S. L. 1966b: 31, 1982b: 843.

analogus Schedl 1948f: 277 (*Xyleborus*). Holotype ♀; Mexico; Eggers Collection, in NHMW, Wien. Synonymy: Wood 1966b: 31.
References: (**ds**) Schedl 1963f: 58, 1973d: 157. (**tx**) Schedl 1948f: 277, 1979c: 19; Wood, S. L. 1966b: 31.

***linearicollis* (Schedl)** 1937h: 169 (*Xyleborus*). Holotype ♀; Nova-Teutonia, Brasilien; Schedl Collection in NHMW, Wien.
Figures: Pedrosa-Macedo & Schonherr 1985: 32.
Distribution: South America (Brazil).
Hosts: *Pinus elliottii*.
References: (**hb**) Viana 1964: 124. (**ds**) Blackwelder 1947: 780; Pedrosa-Macedo & Schonherr 1985: 32; Schedl 1966f: 88, 1967d: 3, 1970e: 84, 1976a: 54; Schonherr & Pedrosa-Macedo 1981: 56; Viana 1964: 124. (**tx**) Pedrosa-Macedo & Schonherr 1985: 32; Schedl 1937h: 169–170, 1939m: 170, 1951h: 285–286, 288; 1954b: 46, 1958f: 35, 1979c: 139.

***longulus* (Schedl)** 1966f: 117 (*Xyleborus*). Holotype ♀; Guadeloupe; Schedl Collection in NHMW, Wien.
Distribution: Antilles Islands (Guadeloupe).
Notes: (1) Bright 1985c: 177 (to *Xyleborinus*).
References: (**ds**) Bright 1985c: 173, 177. (**tx**) Bright 1966f: 117, 1985c: 173; Schedl 1979c: 142.

***longus* (Eggers)** 1927b: 403 (*Xyleborus*). Lectotype ♀; Sumatra (Si Rambe); Eggers Collection, in NHMW, Wien, designated by Schedl 1979c: 142.
Distribution: Indonesia (Java, Sumatra).
Hosts: *Plochodion* sp.
References: (**tx**) Eggers 1927b: 403; Schedl 1942d: 6, 1957d: 112, 1958b: 103, 1979c: 142.

***marcidus* (Schedl)** 1965c: 72 (*Xyleborus*). Holotype ♂; Madagascar, Montagne d'Ambre; Schedl Collection in NHMW, Wien.
Distribution: Madagascar.
References: (**tx**) Schedl 1965c: 72, 1977b: 208, 1979c: 148.

***micrographus* (Schedl)** 1958b: 103 (*Xyleborus*). Lectotype ♀; Malaya, Selangor, Kepong; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 153.

Distribution: Asia (Malaya).

Hosts: *Shorea gysbertsiana*.

References: (**hb**) Browne 1961c: 150. (**ds**) Browne 1961c: 150, 1983a: 554. (**tx**) Schedl 1958b: 103, 1960h: 110, 1979c: 153.

decorus Schedl 1960h: 110 (*Xyleborus*). Lectotype ♀; Malaya, Selangor, Kepong; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 153, automatic.

Notes: (1) This is an unneeded replacement name for *micrographus*.

References: (**tx**) Schedl 1960h: 110, 1979c: 153.

***mimosae* (Schedl)** 1957d: 109 (*Xyleborus*). Holotype ♀; Congo Belge: Lushadu, cote Ouest Kivu; MRCB, Tervuren.

Figures: Nunberg 1963b:pl. 19, figs. 2–3.

Distribution: Africa (Tanzania/ Zaire).

Hosts: *Acacia podalyriaefolia*.

References: (**ds**) Schedl 1962j: 495, 1965e: 355, 1967e: 218. (**tx**) Nunberg 1963b: 39, pl. 19; Schedl 1957d: 109, 1962j: 495, 1979c: 153.

***mitosomiformis* (Schedl)** 1953d: 104 (*Xyleborus*). Lectotype ♀; Madagascar, Mt. Tsaratanana, 1500 m; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 157.

Figures: Schedl 1977b: 198.

Distribution: Madagascar.

References: (**tx**) Schedl 1953d: 104, 1965c: 73, 1977b: 198, 1979c: 157.

***mitosomipennis* (Schedl)** 1953d: 103 (*Xyleborus*). Lectotype ♀; Madagascar, Mt. d'Ambre; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 157.

Figures: Schedl 1977b: 199.

Distribution: Madagascar.

Hosts: *Foetida clusioides*, *Ravensara* sp.

Notes: (3) Schedl 1961e: 155 (named an aberration as var. *laevipennis*, no status).

References: (**tx**) Schedl 1953d: 103, 1961e: 155, 1977b: 198–199, 1979c: 157.

***namibiae* (Schedl)** 1982: 285 (*Xyleborus*). Holotype ♀; Namibia: Klein Spitz-Koppe; TMP, Pretoria.

Figures: Schedl 1977b: 199.

Distribution: Africa (Namibia).

References: (**tx**) Schedl 1977b: 199, 1982: 285.

***octospinosus* (Eggers)** 1920: 44 (*Xyleborus*). Lectotype ♀, Derema bei Amani, Ostafrika; Hagedorn Collection, apparently on loan to Eggers when removed by Schedl to NHMW, Wien, designated by Schedl 1979c: 177.

Distribution: Africa (Tanzania).

References: (**tx**) Eggers 1920: 44; Schedl 1962j: 532, 1979c: 177.

***opimulus* (Schedl)** 1976a: 77 (*Xyleborus*). Holotype ♀; Acungui, PR, Brazil; Schedl Collection in NHMW, Wien.

Distribution: South America (Brazil).

Hosts: *Cedrela fissilis*.

References: (**ds**) Schonherr & Pedrosa-Macedo 1981: 56. (**tx**) Schedl 1976a: 77.

***percuneolus* (Schedl)** 1951i: 85 (*Xyleborus*). Syntypes ♀; Java; Schedl Collection in NHMW, Wien.

Distribution: Indonesia (Java).

Notes: (1) Schedl 1979c: 10 (citation of holotype invalid).

References: (**tx**) Schedl 1951i: 85, 1979c: 188.

***perexiguus* (Schedl)** 1971c: 381 (*Xyleborus*). Holotype ♀; Luzon, P.I., Tayabas Prov., Casiguran; Eggers Collection, in NHMW, Wien.

Distribution: Australia, Indonesia (Java), Cook Islands (Rarotonga), Fiji Islands, New Britain Island, New Guinea, Niue Island, Philippine Islands (Luzon), Samoan Islands.

Hosts: *Anacardium occidentale*.

References: (**bv**) Gray, B. 1974c. (**ec**) Roberts 1977a: 262. (**hb**) Beaver 1976b: 540; Gray, B. 1974c; Roberts 1977a: 262. (**ds**) Beaver 1976b: 540; Beaver & Maddison 1990: 1372–1373; Browne 1974a: 65; Roberts 1977a: 262; Schedl 1972b: 267. (**tx**) Schedl 1955b: 282, 1958k: 155, 1971c: 381, 1979c: 189.

***perminutissimus* (Schedl)** 1934d: 90 (*Xyleborus*). Lectotype ♀; Java, Mt. Gede, 1000 m; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 190.

Distribution: Asia (Malaya), Indonesia (Java).

Hosts: Rattan, *Canarium litoralis*, *Dipterocarpus kunstleri*, *Hopea* sp., *Shorea sumatrana*.

References: (**hb**) Browne 1961c: 150; Kalshoven 1959c: 152. (**ds**) Browne 1961c: 150; Kalshoven 1935a: 14, 1959c: 152; Schedl 1971c: 365. (**tx**) Schedl 1934d: 90, 1942d: 7, 1979c: 190.

angustatulus Schedl 1942d: 43 (*Xyleborus*). Lectotype ♀; Java, Mt. Gede, 800 m, Tapos; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 20.

References: (**tx**) Schedl 1942d: 43, 1979c: 20.

***perpusillus* (Eggers)** 1927b: 404 (*Xyleborus*). Holotype ♀; Sumatra; Eggers Collection (not mentioned by Anderson & Anderson 1971 or Schedl 1979c).

Distribution: Indonesia (Sumatra).

References: (**tx**) Eggers 1927b: 404.

***pilosellus* (Schedl)** 1957d: 86 (*Xyleborus*). Holotype ♀; Congo Belge: Yangambi; MRCB, Tervuren.

Figures: Nunberg 1963b:pl. 22, figs. 3–4.

Distribution: Africa (Zaire).

Hosts: *Angylocalyx pynaertii*, *Garcinia punctata*.

References: (**hb**) Schedl 1962j: 168. (**ds**) Schedl 1962j: 168. (**tx**) Nunberg 1963b: 45, pl. 22; Schedl 1957d: 85–86, 1962j: 168, 1979c: 194.

***polyalthiae* (Schedl)** 1952i: 19 (*Xyleborus*). Holotype ♀; Congo Belge: Yangambi; MRCB, Tervuren.
Figures: Nunberg 1963b:pl. 22, figs. 5–6.
Distribution: Africa (Zaire).
Hosts: *Hevea brasiliensis*, *Isolona bruneelii*, *Polyalthia suaveolens*, *Scorodophloeus zenkeri*.
References: (**ec**) Schedl 1962j: 496. (**hb**) Schedl 1962j: 496. (**ds**) Mayne & Donis 1960: 104, 1962: 322; Schedl 1962j: 496. (**tx**) Nunberg 1963b: 45, pl. 22; Schedl 1952i: 19, 1962j: 496–497, 1979c: 196.

***pometianus* (Schedl)** 1939e: 354 (*Xyleborus*). Lectotype ♀; Malaya, Selangor: Sungei Boloh For. Res.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 197.
Distribution: Asia (Malaya/ Thailand).
Hosts: *Nephelium* sp., *Pometia* sp., *Xerospermum* sp.
References: (**hb**) Browne 1961c: 146. (**ds**) Browne 1961c: 146, 1984a: 150; Nunberg & Chujo 1961: 358. (**tx**) Nunberg 1961: 358; Schedl 1939e: 354–355, 1942a: 171, 1979c: 197.

***protinus* (Wood)** 1974a: 42 (*Xyleborus*). Holotype ♀; Finca La Lola, Limon, Costa Rica; Wood Collection.
Distribution: North America (Costa Rica).
Hosts: *Theobroma cacao*.
References: (**ds**) Wood, S. L. 1982b: 845. (**tx**) Wood, S. L. 1974a: 43, 1982b: 845.

***pseudopityogenes* (Eggers)** 1943e: 76 (*Xyleborus*). Holotype ♀; Africa: Zambeze (Nova Choupanga pres Chemba); MNHN, Paris.
Distribution: Africa (Mozambique/ Namibia/ South Africa/ Zaire).
References: (**ds**) Schedl 1962j: 529. (**tx**) Eggers 1943e: 76; Schedl 1952j: 4, 1953d: 102, 1962j: 529, 1979c: 201.

***quadrispinis* (Schedl)** 1953d: 102 (*Xyleborus*). Lectotype ♀; Madagascar, Mt. Tsaratanana; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 208.
Figures: Schedl 1977b: 209.
Distribution: Madagascar.
Hosts: *Olea ambrensis*, *Pachytrophe dimepate*, *Pittosporum* sp., *Trema orientalis*.
References: (**hb**) Schedl 1977b: 208. (**ds**) Hagedorn 1910d: 58; Schedl 1977b: 208. (**tx**) Hagedorn 1910a: 105; Schedl 1953d: 102, 1961e: 152, 1977b: 208–209, 1979c: 208.

***quadrispinosus* (Eichhoff)** 1878b: 396 (*Xyleborus*). Syntypes ♀; Africa meridionalis; IRSNB, Brussels?
Distribution: Africa (South Africa), Madagascar.
Hosts: *Bridelia tulasneana*, *Canarium* sp., *Cinchona succirubra*, *C. ledgeriana*, *Dalbergia pterocarpifolia*, *Eleocarpus* sp., *Macaranga* sp., *Mesogordonia* sp., *Psychotria* sp., *Vernonia* sp.
References: (**hb**) Schedl 1977b: 209. (**ds**) Hagedorn 1910d: 110; Kleine 1913b: 128, 162, 1914b: 317; Schedl 1962j: 533, 1970d: 234, 1977b: 209; Thomas, R. T. S. 1960a, 1960b. (**tx**) Eggers 1920: 125–126; Eichhoff 1878b: 396; Hagedorn 1910a: 156; Schedl 1951j: 24, 1962j: 533, 1970d: 234, 1977b: 209.

***reconditus* (Schedl)** 1963f: 60 (*Xyleborus*). Holotype ♀; Suriname, Tambahredjo; Schedl Collection in NHMW, Wien.
Distribution: North America (Costa Rica/ Panama), South America (Brazil/ Guyana/ Suriname/ Venezuela).
Hosts: *Cratylia floribunda*, *Eugenia jambos*, *Liriosoma singularis*, *Pouteria* sp., *Pseudoolmedia laevigata*, *Qualea ingens*, *Theobroma cacao*.
References: (**hb**) Browne 1976a: 23; Wood, S. L. 1982b: 846. (**ds**) Beaver 1976a: 23; Schedl 1973d: 159; Wood, S. L. 1982b: 846. (**tx**) Schedl 1963f: 60; Wood, S. L. 1967c: 137, 1982b: 846.

***saxeseni* (Ratzeburg)** 1837: 167 (*Bostrichus*). Syntypes ♀; Sudlichen Deutschland; not located.
Figures: Bain 1976: 183, Borthwick 1981: 148, Bright 1976d: 132, Grune 1979: 152, Hickin 1963: 269, Hosking 1979c, Joly 1976, Lhoste & Roche 1960, Nobuchi 1966d:pl. 4, 1978a:pl. 4, Pfeffer 1989a:pls. 7–8, Postner 1974: 462, Samuelson 1981: 54, Yin & Huang 1981: 569.
Distribution: Africa (Algeria/ Azores Islands/ Cameroon/ Canary Islands/ Egypt/ Libya/ Madeira Island/ Morocco/ Tunisia/ South Africa), Asia (Bonin Islands/ Xizang [Tibet] in China/ Assam, Bengal, Kashmir, Uttar Pradesh in India/ Iran/ Israel/ Japan/ Korea/ Kuril Islands/ Syria/ Taiwan/ Turkey/ Kamchatka, Sakhalin Island, Siberia in E USSR/ Vietnam), Australia, Europe (Albania/ Austria/ Belgium/ Bulgaria/ Corsica/ Czechoslovakia/ Denmark/ England/ France/ Germany/ Greece/ Hungary/ Italy/ Luxemburg/ Netherlands/ Norway/ Poland/ Portugal/ Romania/ Sardinia/ Spain/ Sweden/ Switzerland/ W USSR/ Yugoslavia), Hawaiian Islands, New Guinea, New Zealand, North America (British Columbia, Ontario in Canada/ Baja California, Hidalgo in Mexico/ Alabama, Arizona, Arkansas, California, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Mississippi, Missouri, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oregon, Pennsylvania, South Carolina, Tennessee, Texas, Utah, Virginia, Washington, West Virginia in USA), Philippine Islands, Samoan Islands, South America (Argentina/ Brazil/ Chile/ Paraguay).
Hosts: Many listed by Schedl 1962j: 507, Yin, Huang, & Li 1984: 158. *Abies koreana*, *A.* spp., *Acacia koa*, *Acer* spp., *Alnus japonica*, *Betula platyphylla japonica*, *Castanea crenata*, *Chamaecyparis obtusa*, *Cornus florida*, *Cryptomeria japonica*, *Eucalyptus* sp., *Fagus grandiflora*, *F. multinervis*, *Knightia exelsa*, *Larix* spp., *Librocedrus decurrens*, *Machilus thunbergii*, *Melastoma* sp., *Metrosideros collina polymorpha*,

Myrica faya, *Myrsine*, *Picea jezoensis*, *P.* spp., *Pinus rigida*, *P. strobus*, *P.* spp., *Populus angustifolia*, *P.* spp., *Prunus armeniaca*, *P. serotina*, *Quercus stenophylla*, *Pseudotsuga menziesii*, *Tsuga* spp., *Ulmus* spp.

References: (**ay**) Baumberger 1919: 53; Bugnion 1887b; Escherich 1923b: 488, 629; Feytaud 1950a; Finnegan 1963: 137; Fischer 1954: 137–180; Francke-Grosmann 1956a: 112–118, 1956b, 1956c, 1957, 1958: 141; Hopkins 1894g; Lhoste & Roche 1960; Murayama 1933a: 2; Nosek 1958a: 87; Nunberg 1928a: 140; Nusslin 1911a: 4–5, 82; Schneider-Orelli 1913: 27; Uchastnova 1988: 39. (**bv**) Atkinson, Foltz, & Connor 1988; Chapman 1963: 675; Chararas 1965: 2313; Choo, Woo, & Park 1988; Daterman, Rudinsky, & Nagel 1965; Dixon & Payne 1979b; Grune 1979: 153; Hosking 1973; Kirkendall 1984: 241; Klimetzek et al. 1986: 270; Kovach 1986a; Majernik 1960; Meixner 1937: 1216; Moeck 1971; Roling & Kearby 1975a, 1975b, 1977; Turnbow & Franklin 1980; Welch 1987. (**cn**) Acatay 1943a: 70; Androic 1966: 46; Anonymous 1940b: 9, 1961j, 1970c: 14, 1980g, 1982i; Barbey 1925: 176; Bargmann 1906: 14; Blackman 1950: 299; Blandford 1892b; Bodenheimer 1930: 234; Bohm 1958; Borthwick 1981: 44; Brandt 1952, 1957; Bremmer 1907; Chamberlin 1939: 457–458; Chittenden 1902; Chorbadzhievo 1929; Currie 1905: 71; Davatchi 1958: 77; Doane et al. 1936; Dominik 1959: 1–9; Dugdale 1965b; Ebeling 1950: 666; Eckstein 1926: 572; Egger, A. 1977; Eichhorn & Graf 1974; Escherich 1923b: 488, 629; Essig 1915a: 314, 1926: 521, 1958: 521; Essig & Hoskins 1944: 16; Feytaud 1950a; Fischer 1954: 142; French, J. R. J., Rosel, & Robinson 1977; Gabler 1955; Garcia-Tejero 1955: 235; Georgescu et al. 1957: 357, 405, 417; Goidanich & Goidanich 1934; Grandi 1951; Greckin 1956: 1480; Groschke 1952b, 1953a: 81–84; Heidenreich 1964: 131; Herfs 1930: 7; Hess & Beck 1914: 292, 1927: 347; Hopkins 1898d: 47, 1904a: 16; Hopping & Jenkins 1933; Hosking 1979a, 1979c; Johnson 1958a: 508, 1958b: 236; Joly 1976; Judeich & Nitsche 1895: 544–545; Kamp 1954: 5; Kershaw 1973; Kholodkovskii 1912: 278, 320; Kleine 1932a: 308; Knight, R. L. & Alston 1974; Konig, E. 1957: 110; Kotte 1941: 64, 1948: 71, 1958: 118; Kovacevic 1951: 69; Kovach 1986a; Kovach & Gorsuch 1985; Kurenzov 1935c: 189, 1951c: 78; Lachance & Pfeiffer 1989; Lamey 1881: 142–143; Leach 1940b: 61; Leiby 1925: 1–62; Lugger 1899a: 310; MacNay & Creelman 1958: 27; Majernik 1957: 71, 1959: 198; Marcu 1926c: 65; Menschoy & Martins 1974: 6; Milligan 1969a: 1–4, 1969b: 60; Mokrzecki 1931a: 68; Muller 1912: 186; Nash et al. 1951: 46; Nijholt 1978a; Nitto 1953: 302; Nosek 1951: 109, 1958: 87–90; Nusslin 1913: 204; Ormerod 1898: 192; Paillot 1926: 838; Prebble & Graham 1957: 93–96, 110–112; Puecher Passavalli 1931b: 657; Rhumbler 1922: 329; Roling & Kearby 1973, 1977; Rossem 1954: 247; Ruppel 1967: 98; Savary 1946: 94; Schimitschek 1937c: 53, 1938c: 2119, 1939d: 2119, 1944: 181, 1952c: 58, 60, 1955a: 92, 1955c: 86; Schneider-Orelli 1915a: 66, 1915b: 47; Schuh & Mote 1948: 120; Schvester 1952c: 4, 1953: 1; Schwerdtfeger 1944a: 185, 1957a: 190; Shaw, M. J. P. & Borthwick 1982; Shea & Johnson 1962: 5; Shiraki 1952; Shore 1985; Souphieff & Scherbinovskaja 1937: 14; Strohmeyer 1906b: 330; Swaine 1918a: 126–127; Taraschkewitsch 1934: 357; Theobald 1909: 370; Umnov 1956: 50; Wachtl 1901: 382; Wahl 1914: 1–4; Weber, H. 1926: 572; Wichmann 1927b: 359, 1957a: 95; Wilson 1913: 107, 1915: 6, 50–51; Wood, S. L. 1977a: 73; Zirngiebl 1901: 59; Zondag 1982; Zurn 1902: 20; Zwolfer 1949: 401. (**ec**) Apel 1983; Balazy & Michalski 1960; Banno, Mikata, & Kodama 1983: 445; Batra 1963b: 217; Batra & Lichtwardt 1962: 91–97; Beauverie 1910b; Cardip 1926; Chabrolin 1929; Chamberlin 1918, 1939: 457; Chapman 1963: 673–676; Cote & Allen 1980; Dereksen 1941; Dixon & Payne 1979b; Ehnstrom 1983; Eichhorn & Graf 1974; Finnegan 1963: 137; Fisher 1954, 1971; Fleischer 1911; Francke-Grosmann 1956a, 1956b, 1956c, 1957, 1975; Furniss, R. L. & Carolin 1977: 412; Gyorfi 1941b; Hagedorn 1907c; Halperin & Holzschuh 1984: 29; Heliovaara & Lilja 1989; Inouye et al. 1955: 104; Jamnicky 1958; Kalina 1977: 49; Kielczewski 1976; Kielczewski, Moser, & Wisniewski 1983; Kielczewski & Wisniewski 1978, 1980a, 1980b, 1983; Kleine 1908c: 219, 1909a: 49, 77, 1944: 73; Klimesch 1914c: 59; Knauer 1908: 500; Kostenko 1929; Kovach & Gorsuch 1988; Kurenzov 1951c: 79, 1951d: 24; Lachance & Pfeiffer 1989; Lamey 1881; Leach 1940b: 61; Majernik 1960; Milligan 1969a: 1–4, 1969b: 60; Neger 1908c: 276, 1909a: 374, 1911a: 50; Nikitsky 1978; Nishiguchi 1959: 271; Norris 1979; Nosek 1951: 109, 1956: 204, 1959a: 118, 1959b: 85; Novak, P. 1952: 417; Nusslin 1927: 345; Peplinski & Merrill 1974; Perris 1856a: 244; Pfeffer 1923a: 331, 1928b: 7, 1943b: 182, 1955b: 85; Roeper & French 1981; Roling & Kearby 1977; Roubal 1934b: 178; Rupertsberger 1893a: 215; Ruschka 1923: 201; Schedl 1962k: 498; Scheidter 1936: 236; Schimitschek 1941a: 314, 1946: 9, 1955a: 92, 1964e; Schneider-Orelli 1913: 27; Schwerdtfeger 1944a: 185, 1957a: 190; Sedlaczek 1915a: 127; Shore 1985; Skelly 1966: 49, 1968: 1541; Slaby 1947: 375; Stefanov 1949a: 96; Swaine 1925c: 265; Turnau 1984; Uchastnova 1988: 39; Vite 1952a: 106–107; Webb 1945: 68; Wertz, Skelly, & Merrill 1971; Wichmann 1955a: 95; Yoon et al. 1982. (**hb**) Acatay 1943a: 70; Adeli 1972: 14; Altum 1881c: 317; Apel 1983; Atkinson, Foltz, & Connor 1988; Bach 1864; Baeta Neves 1943a; Baker, W. L. 1972: 269; Balachowsky 1963a: 1255; Balachowsky & Mesnil 1935; Barbey 1901: 28, 107, 1925: 176, 1942; Bargmann 1906;

Batra 1963b: 220; Baudys 1929; Beal & Massey 1945; Beffa 1949, 1961; Beiling 1873; Bellevoye 1894: 89–111, 1898, 1900: 89–111; Blackman 1922b: 116–118, 1950; Blandford 1892b; Bonnemaison 1953; Bright 1976d: 136; Bright & Stark 1973: 77; Budge 1949; Bugnion 1887b; Bukowsky 1930; Buysson 1910; Cairaschi & d'Agiler 1957; Cecconi 1906: 988–990, 1924; Chamberlin 1939: 457, 1958: 186–187; Chararas 1962c: 321, 1965; Charvat 1950; Chorbadzhievo 1929; Dallimore & Munro 1922: 189–193; Daterman, Rudinsky, & Nagel 1965; Davatchi 1958; Deyrup & Atkinson 1987a: 65; Distant 1882: 16; Doane et al. 1936; Dombrowsky 1887; Drooz 1985: 374; Eckstein 1889, 1897, 1926: 572, 1928; Egger, A. 1973; Ehnstrom 1983; Eichhoff 1881a: 54, 279, 1882c; Eichhorn & Graf 1974; Escherich 1923b: 488, 629; Essig 1915a: 314, 1926: 521, 1958: 521; Everts 1902, 1903: 767; Feytaud 1950a; Fisher 1936a, 1954, 1971; Fuchs 1904a; Furniss, M. M. & Johnson 1987: 377; Furniss, R. L. & Carolin 1977: 412; Furst 1888: 113; Gabler 1955; Gerhard 1908; Grandi 1951; Greckin 1956: 1480; Groschke 1952a, 1952b, 1953a; Gyorfi 1936: 525, 527, 1957; Hagedorn 1903a; Halperin & Holzschuh 1984: 29; Henschel 1895a: 193; Hergula 1939: 302; Hess & Beck 1914: 292, 1927: 347; Hoffmann 1940: 61, 1941; Hopkins 1894g, 1898b, 1904a: 10; Hosking 1969, 1971, 1973, 1979c; Houins 1939: 401–409; Inouye et al. 1955: 104; Johnson 1958a: 508, 1958b: 237; Joly 1950, 1976a, 1976b; Judeich & Nitsche 1895: 544; Karpinski & Strawinski 1948: 156; Kholodkovskii 1912: 278, 320; Kleine 1932a: 308; Knotek 1894a: 559; Konig, E. 1957: 110; Kostin 1960: 136; Kovach 1986a; Krivolutskaya 1973; Kurenzov 1935a: 39, 1948b: 112, 1951d: 24, 1951e: 79; Lengerken 1933: 248–255, 1939: 35, 1954: 315; Lepiney & Mimeur 1932: 46; Lindemann 1881a: 236; Louzil 1961: 23; Lugger 1899a: 310; Lunardoni & Leonardi 1889: 483; Majernik 1957: 71; Massee 1935; Milligan 1969a; Morstatt 1924: 19; Munro 1926: 57; Neger 1908: 276; Nijholt 1978a; Nordlinger 1855: 184, 1856: 31, 1869: 233; Nosek 1956: 204, 1959a: 118, 1959b: 85; Nunberg 1929: 110; Nusslin 1898: 283, 1906b: 14, 1913: 204, 1927: 345; Ormerod 1898: 192; Ostmark 1968; Palm 1953a: 23, 1962: 354; Perris 1856a: 244; Pfeffer 1941c: 5, 1942a: 3; Pierce, W. D. 1907: 291; Postner 1974: 465; Ratzeburg 1837: 131, 167; Reh 1900b: 110; Rhumbler 1922: 329; Rimski-Korsakov et al. 1949: 269; Roling & Kearby 1973; Rumbold 1931: 849; Rupertsberger 1879: 231, 1880: 232; Schedl 1962j: 498; Scheidter 1936: 236; Schimitschek 1944: 181, 1946: 9, 1955a: 92; Schneider-Orelli 1913: 27; Schoch 1878: 367; Schwerdtfeger 1944a: 185, 1957a: 190, 1981: 196; Simmel 1919a: 34–36; Snyder 1927: 9; Spessivtsev 1913a: 103; Stark 1952: 436; Stefanov 1949a: 96; Strohmeyer 1906b: 330; Swaine 1918a: 126–127; Takahashi 1989: 403; Taschenberg 1901: 109; Theobald 1909: 370; Thomsen 1948: 807; Titus & Pratt 1904: 20; Tschorbadjiev 1929: 169; Vasseur & Schvester 1948: 85; Vite 1952a: 106–107; Wachtl 1876a: 452, 1901: 382; Weber, H. 1926: 572; Wettstein 1959; Wichmann 1927b: 360; Wilson 1915: 6, 50–51; Wissman 1846: 24; Wood, S. L. 1982b: 847; Yoon et al. 1982; Zirngiebl 1901: 59; Zurn 1902: 20. (**ds**) Acloque 1896; Adeli 1972: 14; Alfken 1924: 405; Androic 1966: 46; Anonymous 1926c: 520, 1964e, 1970c: 14, 1980g; Audras & Schaefer 1957; Bain 1974: 16; Balachowsky 1963a: 1286; Balazy & Michalski 1960; Bangsholt 1975: 95; Barthe 1896; Bau 1888; Beal & Massey 1945; Bedel 1888b: 403, 419; Beeson 1930: 255, 1941: 401; Beffa 1949; Bejer-Petersen & Jorum 1977: 25; Benick 1921; Bielz 1887; Blackman 1922b: 116–118, 1950; Blatchley & Leng 1916: 616; Bohm 1958; Borchert 1951; Borges & Serrano 1989; Brakman 1966b: 206; Brancsik 1906; Bright 1968b: 1309, 1976d: 136, 1987a: 3; Bright & Stark 1973: 77; Buck 1955b: 191; Bukowsky 1930; Buresh & Lazarov 1956; Buysson 1910; Calwer 1884, 1893, 1916; Carpentier & Delaby 1908; Cecconi 1906; Chamberlin 1918a, 1939: 457, 1958: 186–187; Chapman 1963: 675; Chapuis & Candeze 1853; Charvat 1950; Chittenden 1902; Cho 1957; Choo 1983: 113; Choo & Woo 1985: 166; Choo, Woo, & Nobuchi 1983: 172, 1988a: 134; Choo, Woo, & Park 1988; Chorbadzhievo 1924d, 1929; Chrystal 1937; Cola 1971, 1973; Correa de Barros 1913; Crotch 1863; Csiki 1942c; Currie 1905; Dallimore & Munro 1922; Davatchi 1958: 77; Debatisse 1945; Deyrup 1981b: 6; Deyrup & Atkinson 1987a: 65; Dorsey & Leach 1956: 224; Drooz 1985: 374; Dugdale 1965b; Duprez 1938a; Eckstein 1923; Eder 1934; Eggers 1904, 1912f; Endrodi 1958a, 1958b, 1981: 185, 1986: 212; Ericson & Sandin 1893; Escalera 1919; Escherich 1923b: 430, 487, 629–641, 1932b; Essig 1915a: 314, 1926: 521, 1958: 521; Everts 1922: 648; Fauvel 1897; Favre 1890; Fisher 1936a; Ford 1955: 388; Forster 1849: 439; Fowler 1891; Fricken 1889: 354; Frost & Dietrich 1929; Fuchs 1904a, 1905a; Furniss, M. M. & Johnson 1987: 377; Furniss, R. L. & Carolin 1977: 412; Ganglbauer 1904; Gaubil 1849: 126; Gemminger & Harold 1872: 2686; Gillerfors 1988; Gozis 1875: 80; Gredler 1868: 375; Grill 1895: 312; Grouzelle 1905; Grune 1979: 153; Gussmann 1919; Gyorfi 1936: 525, 527, 1941b; Hagedorn 1903a, 1910d: 112–113; Halperin & Holzschuh 1984: 29; Hansen, V. 1939, 1956, 1964: 463; Heidenreich 1934: 90; Heinemann 1908a; Hellen 1947; Henschel 1895a: 193; Herger 1985a: 79; Heyden 1876: 301; Heyden, Reitter, & Weise 1883: 182, 1891: 674, 1906: 713; Hickin 1963; Hilburn & Gordon 1989: 689; Hill, D. S. 1987: 341; Hoffmann 1936, 1940: 61, 1941: 42, 1942: 13; Holdhaus 1912: 454; Hopkins 1893a: 136; Horion 1949; Hosking 1969, 1973, 1979a; Israel-

son 1985: 17; Jamnicky 1960a; Jansson 1940: 63; Jazentkovsky 1912: 292; Joffre 1958: 25; Johnson, Wright, & Orr 1961; Joly 1960,1976; Judeich & Nitsche 1895: 544; Kadyrov 1988: 43, 1989; Kaltenbach 1874: 71, 178, 624, 646; Karpinski 1925: 216, 1926: 82, 1931: 20, 1932b: 55; Karpinski & Strawinski 1948: 156; Keen 1929: 41; Keler 1925b: 275; Kersten 1933: 75; Kestercanek 1881a: 12; Kirk 1969, 1970; Klefbeck & Sjoberg 1960: 232; Kleine 1912a: 162, 262, 268, 1913a: 36, 1913b: 163, 1914a: 19–20, 1914b: 261, 410, 1928: 308, 1932a: 308, 1944: 68–83, 125–133; Kloft & Hinks 1945: 218; Knotek 1892a: 38, 1894a: 559; Ko 1969: 286; Kobakhidze 1957: 178; Koca 1900: 116; Koltze 1901: 154; Koschitsky 1900: 84; Kostenko 1929; Kotula 1873b: 80; Kovacevic 1957: 69; Kraatz 1869: 60; Krivolutskaya 1965: 241, 1973, 1983; Krivolutskaya & Kupyanskaya 1970; Kurenzov 1935c: 189, 1951b: 18, 1967; Kurir 1947c: 7; Kuschel 1972; Langhoffer 1915c: 158; Leclercq 1971; Lentz 1857: 140; Leonard 1928: 520; Lepiney & Mimeur 1932: 46; Lokaj 1868: 64; Lomnicki 1886a: 243, 1913b: 148; Loos 1918: 372–377; Lucht 1987: 279; Lugger 1899: 226–228; Lunardoni & Leonardi 1889: 483; Lundblad 1958: 489; MacNay & Creelman 1958: 27; Mahler 1987: 232; Majernik 1960; Marcu 1926c: 65; Matthews & Fowler 1883: 42; Mayne 1953: 310; Meinert 1887: 70; Michel 1937: 24; Milligan 1969a; Murayama 1929b: 2, 1930a: 3, 1930b: 22, 1933b: 6, 1936a: 136, 1936b: 116, 1937b: 374, 1948: 2, 1949a: 13, 1949c: 104, 1951a: 5, 1951c: 5, 1953a: 21–34, 1953c: 160, 1954b: 182, 1955: 100; Negru 1957: 129, 1968a: 456, 1968c: 91; Neumann & Harris 1974; Nobuchi 1966d: 30, 1967: 23, 1978a: 42; Nobuchi & Ono 1973: 182; Nohira & Ogawa 1986; Normand 1937: 269; Novak, P. 1952: 417, 1964; Nunberg 1928b: 88, 110, 1954: 60, 1958a: 481; Nusslin 1898: 283; Orest 1926c: 65; Ortzen 1886: 280; Ostmark 1968; Palm 1953a: 23, 1959: 130, 214; Perris 1876a: 253, 255, 1877a: 413, 415; Peyerimhoff 1919: 248, 1933: 371; Pfeffer 1928b: 7, 1931b: 73, 1947e: 2, 1950b: 76, 1989a: 88; Pfeiffer & Axtell 1980; Pittioni 1943: 176; Pjatnitskii 1930a: 165; Postner 1974: 465; Ragusa 1924: 117; Rapp 1934: 735; Ratzeburg 1837: 131, 167; Redtenbacher 1858: 836, 1874: 382; Reitter 1869: 155, 1894: 91, 1916: 295; Rimski-Korsakov et al. 1949: 269; Rohrig 1955: 37; Roubal 1941: 73, 276; Ruppel 1967: 98; Ruskov 1928c: 62; Rye 1858: 70; Sainte-Claire 1914: 475; Sainte-Claire & Mequignon 1938: 449; Samuelson 1981: 59; Schaufuss 1915: 1239; Schaum 1859: 96, 1862: 101; Schedl 1959h: 100, 1960e: 173, 1962i: 74, 1962j: 498, 1963e: 155, 1964a, 1964i: 248, 1966g: 37, 1967c: 73, 1967d: 5, 1969c: 54, 1969d: 6, 1969g: 292, 1971b: 530, 1971d: 425, 427, 1971f: 149, 1972d: 153, 1972n: 352, 1975d: 2, 1975e: 451, 1975k: 278, 1976a: 55, 1977d: 281, 1978e: 37, 1979a: 159, 1979i: 292, 1980a: 20, 1981b: 94; Schedl, Lindberg, & Lindberg 1959: 25; Scheerpeltz & Winkler 1930: 258; Schilsky 1909: 189; Schmidt 1939: 26, 152, 192, 273; Schmitz 1898: 157; Schneider & Farrier 1969: 413; Schneider & Leder 1977: 55; Schuh & Mote 1948: 120; Schwarz 1886: 41; Schwerdtfeger 1981: 196; Seidlitz 1872: 396, 1891a: 568, 1891b: 613; Sharp & Fowler 1893: 34; Shiraki 1952; Shore 1985; Souphieff & Scherbinovskaja 1937: 14; Stark 1926b: 104, 1926j: 127, 1927b: 89, 1931d: 548, 1952: 436; Stein 1868: 114; Stein & Weise 1877: 165; Stierlin 1898: 447; Stierlin & Gautard 1871: 293, 1906: 230; Sturm 1843: 230; Swaine 1909: 158; Thomson 1865: 370, 1868: 223; Tredl 1907: 19; Tressens 1952: 90; Tschorbadjiev 1929: 169; Turnbow & Franklin 1980; Vite 1953: 42; Wachtl 1876a: 452; Wanka 1908: 231; Welch, R. C. 1980: 272; West 1938: 184; Westhoff 1882: 240; Wichmann, H. E. v. 1927: 360–378; Wichmann, H. E. 1927: 70, 1954: 522–523, 1955a: 95, 1957a: 95; Winter, T. G. 1983: 28; Wood, S. L. 1948: 74, 1951a: 128, 1957c: 403, 1972a: 422, 1977a: 73, 1982b: 847; Yanovskii & Tegshzhargal 1985: 415; Yin & Huang 1981: 569; Yin, Huang, & Li 1984: 158; Zondag 1966, 1982. (**tx**) Acloque 1896; Apel 1983; Bach 1854: 126, 134, 1864; Bain 1976: 183; Balachowsky 1949a: 224–229, 1963a: 1286; Balachowsky & Mesnil 1935: 25–26; Barbey 1901: 28, 107; Beal & Massey 1945; Bedel 1888b: 402–403, 419; Beeson 1930: 79, 255; Beffa 1949, 1961; Bertolini 1872; Blackman 1922b: 116–118; Blandford 1892b; Blatchley & Leng 1916: 616; Borthwick 1981: 48; Bright 1968b: 1309, 1976d: 132, 136; Buysson 1880: 73, 1910: 122–123; Carne et al. 1980; Carpentier & Delaby 1908; Ceballos 1945; Chamberlin 1918: 35–37, 1939: 448–458, 1958: 30, 186–187; Chapuis & Candeze 1853; Charvat 1950; Choo 1983: 113; Chorbadzhievo 1924d; Doebner 1862: 182; Dombrowsky 1887; Duffy 1953; Eggers 1912f: 29, 1920: 115, 1922c: 17, 1923a: 201, 1927b: 302, 1932d: 300–301, 1933f: 53–54, 1941a: 106, 1944c: 142; Eichhoff 1864b: 37–38, 46, 1866: 278, 1868d: 423, 1875: 202–203, 1876a: 378–379, 1878: 361–364, 506, 1881a: 54, 279–282, 1883a: 116, 142, 1896: 609; Endrodi 1957b: 417; Escherich 1923b: 488, 629; Everts 1903: 767, 1922: 648; Fauvel 1887: 276, 1889, 1897: 66; Ferrant 1911; Ferrari 1867a: 21–23, 89, 1867b: 114, 1868: 256; Fleischer 1927; Formanek 1907: 53; Fricken 1889: 354; Gabler 1955; Gebien 1907: 197; Groschke 1952a, 1953a; Grune 1979: 152, 153; Hagedorn 1907: 290–293, 1910a: 157; Hansen, V. 1956, 1964: 463; Henschel 1895a: 193; Hickin 1963: 269; Hoffmann 1936: 44–45; Hopkins 1898: 21–29, 1904: 16, 1915b: 60, 1915c: 184; Hosking 1979b, 1979c; Hubbard 1897: 24; Iablokoff-Khnzorian 1961: 90; Jacquelin du Val & Fairmaire 1868: 107, 109; Johnson 1958b: 237; Joly 1976; Judeich & Nitsche 1895: 544; Kalina 1975; Karpinski & Strawinski 1948: 156; Keen 1929: 41; Knotek 1892a: 38; Kri-

volutskaya 1958: 54–55, 168; Kuhnt 1913: 1060; Kurenzov 1941a: 189–193, 1948a: 52, 1948b: 112, 1951: 78–80, 1961: 24–25; Lacordaire 1866: 381; LeConte 1876: 360; Letzner 1891: 377; Lhoste & Roche 1960; Lindemann 1881a: 236; Lovendal 1889b: 74–75, 1898: 188; Lucht 1987: 279; Lunardoni & Leonardi 1889: 483; Meixner 1937: 1216; Munro 1946: 10–72; Murayama 1930b: 22–31, 1933a: 2, 1933b: 18–19, 32–33, 1934a: 4, 1934c: 300, 1936: 135–136, 1937b: 374, 1951: 71, 1953a: 21, 1954: 182, 1955: 100; Niisima 1909: 154, 160, 1910: 14; Nobuchi 1966d: 30, pl. 4, 1978a:pl. 4; Nordlinger 1848: 246, 1856: 31; Nunberg 1928a: 140, 1954: 60, 1958a: 481; Nusslin 1911a: 5, 82; Perris 1877a: 413, 415; Pfeffer 1932b: 21, 1941c: 5, 1942a: 3, 1947e: 2, 1955a: 199, 1989a:pls. 7–8; Portevin 1935: 330; Postner 1974: 465; Quaschik 1953: 35; Ratzeburg 1837: 131, 167, 1839: 204; Redtenbacher 1849a: 791, 1849b: 26, 1858: 836, 1874: 382; Reitter 1894a: 91, 1905: 249, 1906: 713, 1913a: 83, 1916: 295; Rhumbler 1922: 329; Rupertsberger 1879: 231, 1880: 232; Samuelson 1981: 54, 59; Schedl 1934f: 1646, 1937h: 169, 1938i: 28, 1948d: 37, 1948f: 276, 1948g: 28, 1952f: 88, 1955e: 256, 1955i: 212, 1957b: 151, 1957d: 82, 84, 1959h: 100, 1959r: 43, 1960a: 11, 1962j: 498, 1963i: 63, 1964m: 313, 1966e: 44, 1972d: 153, 1980a: 20, 1981b: 94; Schedl, Lindberg, & Lindberg 1959: 25–26; Schimitschek 1937c: 53–54, 1955c: 86; Schwarz 1886: 41; Seidlitz 1872: 396, 1891a: 568, 1891b: 613; Semenov 1902: 271; Spessivtsev 1913a: 103, 1922a: 478, 492, 1925a: 180, 1931: 58–60; Stark 1952: 436; Stierlin 1898: 447; Strohmeyer 1906: 330, 416, 420, 509; Swaine 1909: 157–158, 1918a: 126–127, 1934: 204; Taschenberg 1901: 109; Thomson 1865: 370, 1868: 223; Wissman 1846: 24; Wollaston 1864: 255, 1865: 237; Wood, S. L. 1951a: 128, 1957c: 403, 1960b: 68, 1962: 79, 1972a: 422, 1982b: 847; Yin & Huang 1981: 569; Yin, Huang, & Li 1984: 158; Zimmermann 1868: 145. (**ms**) Eggers 1910a, 1910b, 1912e; Eichhoff 1868d: 423; Escherich 1932b; Heinemann 1908a; Klimesch 1914c: 59; Knight 1971: 40; Merino-Rodriguez 1966: 50; Reh 1900b: 110; Schwappach 1924: 57; Swaine 1925c: 265.

dohrni Wollaston 1854: 290 (*Tomicus*). Syntypes ♀; BMNH, London. Synonymy: Ferrari 1867a: 22, Eichhoff 1878b: 362.

References: (**ds**) Lacordaire 1866: 383; Schaum 1862: 101; Stein 1868; Swaine 1909: 157; Wollaston 1854: 290, 1857: 96. (**tx**) Balachowsky 1949a: 229; Eichhoff 1878b: 362; Ferrari 1867a: 72; Hopkins 1898: 28; Lacordaire 1866: 383; Swaine 1909: 157; Wollaston 1854: 290, 1857: 96, 1864: 253.

decolor Boieldieu 1859: 473 (*Tomicus*). Syntypes ♀; Environs de Peronne, France; MNHN, Paris. Synonymy: Ferrari 1867a: 22.

References: (**hb**) Davatchi 1965: 77; Wachtl 1876a: 458. (**ds**) Calwer 1884, 1893; Gemminger & Harold 1872: 2685; Lacordaire 1866: 383; Perris 1866; Schaum 1862: 101; Schilsky 1909: 189; Stein 1868: 114; Stein & Weise 1877: 165; Strauch 1861: 122; Swaine 1909: 157; Wachtl 1876a: 458. (**tx**) Aube 1959; Boieldieu 1859: 473; Eichhoff 1868d: 419, 1876a: 378, 1878b: 362; Ferrari 1867a: 21–22, 1867b: 114; Hopkins 1898: 29; Lacordaire 1866: 383; Letzner 1891: 377; Swaine 1909: 157. (**ms**) Eichhoff 1868d: 419.

angustatus Eichhoff 1866: 278 (*Xyleborus*). Syntypes ♀; Volhynia, USSR; Hamburg Museum, lost. Synonymy: Schedl 1964m: 313.

References: (**hb**) Eichhoff 1881a: 54, 282; Stark 1952: 438; Wachtl 1876a: 458. (**ds**) Gemminger & Harold 1872: 2685; Hagedorn 1910d: 99; Heyden, Reitter, & Weise 1883: 182, 1891: 674, 1906: 713; Jazentkovsky 1912: 292; Kleine 1913b: 160; Nunberg 1928b: 88, 110, 1960b: 157; Reitter 1894a: 91; Schaufuss 1915: 1239; Stark 1952: 438; Stein 1868: 114; Stein & Weise 1877: 165; Wachtl 1876a: 458. (**tx**) Eichhoff 1866: 278, 1878b: 365, 1881a: 54, 282, 1883a: 116, 142; Ferrari 1867a: 21–22, 1867b: 114; Hagedorn 1910a: 152; Reitter 1894a: 91, 1913a: 83; Schedl 1942d: 41, 1964m: 313, 1979c: 20; Stark 1952: 438.

aesculi Ferrari 1867: 22 (*Xyleborus*). Syntypes ♀; Meidling bei Wien [Austria]; NHMW, Wien. Synonymy: Eichhoff 1878b: 362.

References: (**ds**) Lentz 1857: 138; Schilsky 1909: 189; Stein & Weise 1877: 165; Swaine 1909: 157. (**tx**) Eichhoff 1878b: 362; Ferrari 1867a: 22; Hopkins 1898: 28; Letzner 1891: 377; Swaine 1909: 157.

sobrinus Eichhoff 1875: 202 (*Xyleborus*). Syntypes ♀; Japan; IRSNB, Brussels. Synonymy: Schedl 1964m: 313.

References: (**cn**) Anonymous 1980g. (**hb**) Niisima 1908b: 18. (**ds**) Anonymous 1980g; Hagedorn 1910d: 111; Hill, D. S. 1987: 341; Kleine 1914b: 261; Murayama 1953a: 23, 1954b: 183; Niisima 1908b: 18. (**tx**) Eggers 1939c: 114; Eichhoff 1875: 202, 1878b: 363; Hagedorn 1910a: 156; Murayama 1934c: 300, 1953a: 23, 1954b: 183; Schedl 1948g: 28, 1964m: 313, 1979c: 231; Strohmeyer 1914: 32.

subdepressus Rey 1883: 142 (*Xyleborus*). Syntypes ♂; Lyons, France; MNHN, Paris. Synonymy: Bedel 1888b: 419.

References: (**ds**) Davatchi 1958: 77; Schilsky 1909: 189; Swaine 1909: 158. (**tx**) Balachowsky 1949a: 229; Bedel 1888b: 419; Eichhoff 1883a: 142; Hopkins 1898: 28; Rey 1885: 142, 1892b: 30; Schedl 1960i: 112; Swaine 1909: 158.

frigidus Blackburn 1885: 193 (*Xyleborus*). Holotype ♀; Haleakala, Maui, 4000 feet [Hawaiian

Islands]; BMNH, London. Synonymy: Samuelson 1981: 59.

References: (**ds**) Beeson 1938b: 292; Hagedorn 1910d: 104; Kleine 1913b: 161, 1914b: 302; Swezey 1941: 124, 1954: 14. (**tx**) Blackburn 1885: 193; Hagedorn 1910a: 154; Perkins 1900: 178.

floridensis Hopkins 1915b: 60, 63 (*Xyleborus*). Holotype ♀; Enterprise, Florida [USA]; USNM, Washington. Synonymy: Wood 1962: 79.

References: (**hb**) Chamberlin 1939: 450. (**ds**) Blatchley & Leng 1916: 617; Chamberlin 1939: 450. (**tx**) Blatchley & Leng 1916: 617; Chamberlin 1939: 450; Hopkins 1915b: 60, 63; Wood, S. L. 1962: 79.

pecanus Hopkins 1915b: 63 (*Xyleborus*). Holotype ♀; Waynesboro, Mississippi [USA]; USNM, Washington. Synonymy: Wood 1962: 79.

References: (**bv**) Dethier 1947. (**cn**) Blackman 1950; Doane et al. 1936; Turner 1918: 30. (**ec**) Slaby 1947: 378; Versall 1943: 125–143. (**hb**) Beal & Massey 1945: 152–153; Blackman 1922b: 116–117, 1950; Doane et al. 1936. (**ds**) Beal & Massey 1945: 152–153; Blackman 1922b: 116–117, 1950; Blatchley & Leng 1916: 617; Glick 1939: 37; Kleine 1934a: 175; Rosewell 1920: 148. (**tx**) Beal & Massey 1945: 152–153; Blackman 1922b: 116–117; Blatchley & Leng 1916: 617; Chamberlin 1939: 450; Hopkins 1915b: 60, 63; Wood, S. L. 1962: 79.

quercus Hopkins 1915b: 60, 63 (*Xyleborus*). Holotype ♀; Baxterville, Mississippi [USA]; USNM, Washington. Synonymy: Wood 1962: 79.

References: (**cn**) Doane et al. 1936. (**hb**) Chamberlin 1939: 450; Doane et al. 1936. (**ds**) Blatchley & Leng 1916: 616; Chamberlin 1939: 450; Kleine 1934a: 175; Krivolutskaya 1983. (**tx**) Blatchley & Leng 1916: 616; Chamberlin 1939: 450; Hopkins 1915b: 60, 63; Wood, S. L. 1962: 79.

arbuti Hopkins 1915b: 64 (*Xyleborus*). Holotype ♀; Walker, California [USA]; USNM, Washington. Synonymy: Wood 1957c: 403.

References: (**cn**) Chamberlin 1924, 1939: 451; Doane et al. 1936; Keen 1938: 147. (**ec**) Chamberlin 1939: 451; Keen 1938: 147. (**hb**) Chamberlin 1939: 451; Doane et al. 1936; Keen 1938: 147. (**ds**) Chamberlin 1939: 451; Keen 1929: 42, 1938: 147; Kleine 1934a: 172; Patterson & Hatch 1945: 154; Schedl 1962j: 498; Swaine 1918a: 127; Wood, S. L. 1957c: 403. (**tx**) Chamberlin 1939: 451; Hopkins 1915b: 64; Keen 1929: 42; Schedl 1962j: 498; Swaine 1918a: 127; Wood, S. L. 1957c: 403.

subspinosus Eggers 1930d: 203 (*Xyleborus*). Holotype ♀; India, Assam (Shillong, 6000 feet); FRI, Dehra Dun. Synonymy: Wood 1989: 176.

References: (**tx**) Eggers 1930d: 203; Wood, S. L. 1989: 176.

tsugae Swaine 1934: 204. Holotype ♀; Oak Ridge, Oregon [USA]; CNCI, Ottawa. Synonymy: Wood 1957c: 403.

References: (**bv**) Prebble & Graham 1957: 93. (**cn**) Johnson 1958: 236; McMullen 1956: 34; Prebble 1944: 52; Schuder 1969: 82. (**hb**) Chamberlin 1939: 457; Prebble & Graham 1957: 93. (**ds**) Blackwelder 1939; Chamberlin 1939: 457; Schuder 1969: 82. (**tx**) Bright 1967b: 679; Chamberlin 1939: 457; de Ruette 1970: 114; Schedl 1962j: 499; Swaine 1934: 204–205; Wood, S. L. 1957c: 403. (**ms**) Prebble 1944: 52.

libocedri Swaine 1934: 205. Holotype ♀; Oak Ridge, Oregon [USA]; CNCI, Ottawa. Synonymy: Wood 1957c: 403.

Notes: (1) A lapsus calami in the original spelling of this name, *libocedri*, was corrected by most authors.

References: (**cn**) Chamberlin 1939: 457; Schuder 1969: 75. (**ec**) Chamberlin 1939: 457. (**hb**) Chamberlin 1939: 457. (**ds**) Blackwelder 1939; Chamberlin 1939: 457; Schuder 1969: 75. (**tx**) Bright 1967b: 679; Chamberlin 1939: 457; de Ruette 1970: 114; Schedl 1962j: 502; Swaine 1934: 205–206; Wood, S. L. 1957c: 403.

pseudogracilis Schedl 1937h: 169 (*Xyleborus*). Lectotype ♀; Brasilien, Nova Teutonia; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 201. Synonymy: Wood 1989: 176.

References: (**ds**) Blackwelder 1947: 780. (**tx**) Schedl 1937h: 169, 1979c: 201; Wood, S. L. 1989: 176.

retrusus Schedl 1940c: 208 (*Xyleborus*). Lectotype ♀; Kameroon; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 211. Synonymy: Wood 1989: 176.

References: (**tx**) Schedl 1940c: 208, 1957d: 97, 1962j: 497, 1979c: 210; Wood, S. L. 1989: 176.

peregrinus Eggers 1944c: 142 (*Xyleborus*). Holotype ♀; Stuttgart, Germany; Eggers Collection, in NHMW, Wien. Synonymy: Schedl 1980d: 122.

References: (**ds**) Horion 1951. (**tx**) Eggers 1944c: 142; Schedl 1979c: 189, 1980d: 122.

pseudoangustatus Schedl 1948g: 28 (*Xyleborus*). Lectotype ♀; Queensland: Stapleton, Brookfield, Stanthrope, and New South Wales: W. Pennant Hills; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 200. Synonymy: Schedl 1964m: 313.

References: (**cn**) Moore 1959: 188. (**ds**) Moore 1959: 188, 1961: 92; Schedl 1959d: 67; Swezey 1941: 123, 1954: 14. (**tx**) Schedl 1941f: 116, 1942d: 43, 1948g: 28, 1964m: 313, 1979c: 200.

paraguayensis Schedl 1948f: 276 (*Xyleborus*). Holotype ♀; Paraguay, Villarrica; Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 176.

References: (**hb**) Viana 1964: 124. (**ds**) Schedl 1966f: 89, 1970e: 84, 1972d: 152, 1973d: 158; Viana 1964: 124. (**tx**) Schedl 1948f: 276, 1951h: 285, 1955e: 256, 1958f: 35, 1972d: 152, 1979c: 184; Wood, S. L. 1989: 176.

cinctipennis Schedl 1980b: 186 (*Xyleborus*). Holotype ♀; Queensland, Australia; Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 176.

References: (**tx**) Schedl 1980b: 186; Wood, S. L. 1989: 176.

***schaufussi* (Blandford)** 1894d: 117 (*Xyleborus*). Syntypes ♂ ♀; Japan: Lake Junsai, Nikko; BMNH, London.

Distribution: Asia (Japan/ Taiwan).

Hosts: *Fagus crenata*.

References: (**ec**) Inouye et al. 1955: 106. (**hb**) Inouye et al. 1955: 106. (**ds**) Blandford 1894c: 579; Hagedorn 1910d: 110; Kleine 1913b: 162, 1914b: 261, 1934a: 175; Murayama 1953c: 161, 1954b: 182; Nobuchi 1967: 23, 1985c: 27. (**tx**) Blandford 1894d: 117; Hagedorn 1910a: 156; Murayama 1954b: 182; Niisima 1909: 154, 162; Schedl 1934f: 1646, 1972d: 152, 1979c: 184.

***schoenherri* (Schedl)** 1981a: 5 (*Xyleborus*). Holotype ♀; Brasilien, PR [Parana (Telemaco-Borba), Schonherr & Pedrosa-Macedo 1981: 56]; Schedl Collection in NHMW, Wien.

Distribution: South America (Brazil).

Hosts: *Pinus elliottii*.

References: (**ds**) Pedrosa-Macedo & Schonherr 1985: 37; Schonherr & Pedrosa-Macedo 1981: 56. (**tx**) Pedrosa-Macedo & Schonherr 1985: 37; Schedl 1981a: 5.

***sclerocaryae* (Schedl)** 1962h: 71 (*Xyleborus*). Holotype ♀; Transvaal, Lothion; NICP, Pretoria.

Distribution: Africa (South Africa).

Hosts: *Sclerocarya birrea*, *S. caffra*.

References: (**cn**) Anonymous 1970c: 14. (**ds**) Anonymous 1970c: 14; Schedl 1962j: 60. (**tx**) Schedl 1962h: 71, 1962k: 1102, 1979c: 222.

***sculptilis* (Schedl)** 1964g: 247 (*Xyleborus*). Holotype ♀; Sarawak, Kuching; BMNH, London.

Distribution: Indonesia (Sarawak in Borneo).

Hosts: *Artocarpus heterophyllus*.

References: (**tx**) Schedl 1964g: 247, 1979c: 223.

***sentosus* (Eichhoff)** 1868c: 146 (*Xyleborus*). Holotype ♀; Brasilia; Schedl Collection in NHMW, Wien.

Figures: Pedrosa-Macedo & Schonherr 1985: 38.

Distribution: South America (Brazil/ Paraguay/ Peru).

Hosts: *Araucaria angustifolia*, *Cedrela fissilis*.

Notes: (1) The original spelling on page 146 with the description was *setosus*, but it was corrected by Eichhoff 1878b: 64, 395; the original spelling (Eichhoff 1868c: 146) is treated as a lapsus calami.

References: (**cn**) Santoro 1966a. (**ds**) Ferrer 1942; Hagedorn 1910d: 110; Kleine 1913b: 162, 1914b: 337; Pedrosa-Macedo & Schonherr 1985: 38; Santoro 1957b: 26; Schedl 1960a: 77, 1966f: 90, 1967d: 3, 1971f: 149, 1972g: 45, 1973d: 162, 1976a: 551; Schonherr & Pedrosa-Macedo 1981: 57. (**tx**) Eggers 1920: 125–126; Eichhoff 1868c: 146; Iglesias 1914b: 130; Hagedorn 1910a: 156; Nunberg 1956a: 145; Pedrosa-Macedo & Schonherr 1985: 38; Schaufuss 1891: 28; Schedl 1931c: 342–343, 1940a: 368, 1951h: 285, 1952a: 446, 1966e: 43, 1979c: 225.

***sharpae* (Hopkins)** 1915b: 63 (*Xyleborus*). Holotype ♀; Mt. Coffee, Liberia; USNM, Washington.

Figures: Nobuchi 1978a:pl. 4.

Distribution: Africa (Angola/ Cameroon/ Congo/ Equatorial Guinea/ Ghana/ Guinea/ Ivory Coast/ Liberia/ Tanzania/ Zaire).

Hosts: Many listed by Schedl 1962j: 509–513. *Albizzia ferruginea*, *A. zygia*, *Bosqueia angolensis*, *Bussea occidentalis*, *Celtis zenkeri*, *Entandrophragma utile*, *Khaya ivorensis*, *Macrolobium* sp., *Pinus caribaea*, *Piptadeniastrum africanum*, *Terminalia ivorensis*, *T. superba*, *Trichilia heudelotii*.

References: (**cn**) Anonymous 1953j: 25. (**ec**) Anonymous 1953j: 25; Banerjee 1983. (**hb**) Jones 1959: 6; Jones, Roberts, & Baker 1959: 13–37; Schedl 1962j: 512; Thompson, G. H. 1963: 72; Webb & Jones 1957: 25–36. (**ds**) Browne 1970: 542; Nobuchi 1978a: 43; Schedl 1962b: 61, 1962j: 512, 1964e: 69, 1969a: 203, 1971e: 2, 1971f: 149, 1971g: 194; Thompson, G. H. 1963: 72. (**tx**) Eggers 1940c: 237; Hopkins 1915b: 63–64; Nobuchi 1978a:pl. 4; Schedl 1951e: 39, 1954e: 54, 1955d: 269, 1962h: 61, 1962j: 512; Wood, S. L. 1962: 79.

schreineri Eggers 1920: 115 (*Xyleborus*). Lectotype ♀; Amani (D.O. Afrika); Eggers Collection, in NHMW, Wien, designated by Schedl 1979c: 222. Synonymy: Wood 1962: 79.

References: (**hb**) Cachan 1957: 15; Schedl 1962j: 508. (**ds**) Ferreira 1965: 1125; Mayne & Donis 1962: 322; Schedl 1959p: 21, 1962j: 508, 1967e: 218. (**tx**) Eggers 1920: 115; Nunberg 1963b: 51, pl. 26; Schedl 1951e: 39; 1954d: 872, 1962j: 508, 1979c: 222; Wood, S. L. 1962: 79.

***signatipennis* (Schedl)** 1961e: 152 (*Xyleborus*). Holotype ♀; Madagascar, Perinet et Antaniditra, pres Perinet; IRSM, Madagascar.

Distribution: Madagascar.

Hosts: *Alchornea coriacea*, *Cassipourea* sp., *Dalbergia pterocarpifolia*, *Ekebergia* sp., *Eleocarpus* sp., *Oncostemon* sp., *Peptadenia perivillei*.

References: (**hb**) Schedl 1977b: 211. (**ds**) Schedl 1977b: 211. (**tx**) Schedl 1961e: 152, 1977b: 211, 1979c: 228.

***similans* (Eggers)** 1940c: 237 (*Xyleborus*). Holotype ♀; Congostaat: Kasamvu; Eggers Collection, in NHMW, Wien.

Figures: Nunberg 1963b:pl. 27, figs. 3–5.

Distribution: Africa (Congo/ Ghana/ Ivory Coast/ Somalia/ Zaire).

Hosts: *Acacia dudgeoni*, *Albizzia adianthifolia*, *A. gummifera*, *Alchornea hirtella*, *Blighia sapida*, *Cola chlamydantha*, *Funtumia elastica*, *Guarea laurentii*, *Hevea brasiliensis*, *Macaranga* sp., *Macrolobium houdelotianum*, *Pentadesma lebrunii*, *Scorodophloeus zenkeri*, *Sterculia rhinopetala*, *Terminalia superba*, *Triplochiton scleroxylon*, *Turraeanthus africana*.

References: (**ec**) Schedl 1962j: 514. (**hb**) Browne 1963: 244; Cachan 1957: 15; Schedl 1962j: 514. (**ds**) Browne 1963a: 244; Mayne & Donis 1962: 322; Schedl 1962h: 61, 1962j: 514, 1966c: 228, 1967a: 219; Thompson, G. H. 1963: 72. (**tx**) Eggers 1940c: 237; Nunberg 1963b: 54, pl. 27; Schedl 1951f: 40, 1954d: 872–873, 1954e: 54, 1955c: 31, 1962h: 61, 1962j: 514, 1979c: 229.

***speciosus* (Schedl)** 1975e: 457 (*Xyleborus*). Holotype ♀; Bengal, Darjeeling; Schedl Collection in NHMW, Wien.

Distribution: Asia (Bengal in India).

References: (**tx**) Schedl 1975e: 457.

***spiculatulus* (Schedl)** 1965c: 70 (*Xyleborus*). Holotype ♀; G. Comoren [apparently Grande Comoro Island in Indian Ocean off Mozambique]; Schedl Collection in NHMW, Wien.

Distribution: Africa (Grande Comoro Island), Madagascar.

References: (**ds**) Schedl 1969d: 10. (**tx**) Schedl 1965c: 70, 1977b: 200, 1979c: 234.

***spiculatus* (Schaufuss)** 1891: 28 (*Xyleborus*). Holotype ♀; Madagascar; Hamburg Museum, lost.

Distribution: Madagascar.

Hosts: *Allophyllus macrocarpus*, *Chrysophyllum boivinianum*, *Dombeya* sp., *Ficus soroceoides*, *Gouania glandulosa*, *Macphersonia* cf. *madagascariensis*, *Olea ambrensis*, *Panax* sp., *Pittosporum* sp., *Trema orientalis*, *Tricocodendron acuminatum*.

References: (**hb**) Schedl 1977b: 200. (**ds**) Alluaud 1900: 441; Fairmaire 1892b; Frappa 1933: 179; Hagedorn 1907a: 261, 1907b: 111, 1910d: 111; Kleine 1913b, 1914b: 326; Schedl 1977b: 200; Spahr 1981. (**tx**) Eggers 1920: 125–126; Fairmaire 1892b; Hagedorn 1910a: 156, 1913b: 257; Keler 1928: 29; Schaufuss 1891: 28; Schedl 1953d: 71, 1965c: 70, 1969d: 10, 1977b: 200.

***spinifer* (Eggers)** 1920: 116 (*Xyleborus*). Holotype ♀; Sogosse (Britisch Bechuanaland), Sudafrika; MNB, Berlin.

Distribution: Africa (Angola/ Botswana/ Namibia/ South Africa), Madagascar.

Hosts: *Acacia* sp., *Pinus khasia*.

References: (**cn**) Anonymous 1970c: 14. (**ds**) Anonymous 1970c: 14; Ferreira 1965: 112; Schedl 1959p: 21, 1962j: 530, 1977b: 216. (**tx**) Eggers 1920: 116, 1922b: 171; Schedl 1957c: 325, 1957d: 85, 1962j: 530, 1977b: 216.

***spiniger* (Schedl)** 1954b: 45 (*Xyleborus*). Lectotype ♀; Brasilien: Matto Grosso, Rio Caraguata; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 235.

Distribution: South America (Brazil).

References: (**tx**) Schedl 1954b: 45, 1979c: 235.

***spinipennis* (Eggers)** 1930d: 202 (*Xyleborus*). Holotype ♀; Assam (Haflong, Cachar); FRI, Dehra Dun, lost.

Distribution: Asia (Assam in India).

Notes: (1) A Beeson note in his collection states that the holotype was lost before 1941.

References: (**tx**) Eggers 1930d: 202.

***spinipes* (Schedl)** 1957d: 103 (*Xyleborus*). Holotype ♀; Congo Belge: Yangambi; MRCB, Tervuren.

Figures: Nunberg 1963b:pl. 28, figs. 4–5.

Distribution: Africa (Zaire).

Hosts: *Celtis brieyi*, *Scorodophloeus zenkeri*.

References: (**ds**) Schedl 1962j: 530, 1967e: 219. (**tx**) Nunberg 1963b: 57, pl. 28; Schedl 1957d: 103, 1962j: 530, 1979c: 235.

***spiniposticus* Wood** 1992b: 80. Holotype, sex?; Fiji; Schedl Collection in NHMW, Wien, automatic.

Distribution: Fiji Islands.

References: (**tx**) Wood, S. L. 1992b: 80.

spinipennis Schedl 1979f: 106 (*Eidophelus*). Holotype, sex?; Fiji; Schedl Collection in NHMW, Wien, preoccupied by Eggers 1930.

References: (**tx**) Beaver 1991: 94; Schedl 1979f: 106; Wood, S. L. 1992b: 80.

***spinosus* (Schaufuss)** 1891: 27 (*Xyleborus*). Syntypes ♀; Madagascar; Hamburg Museum, lost.

Distribution: Madagascar.

Hosts: *Allophyllus macrocarpus*, *Chrysophyllum boivinianum*, *Dombeya* sp., *Ficus soroceoides* var. *macrophlebia*, *Gouania glandulosa*, *Pittosporum* sp.

References: (**ec**) Schedl 1977a: 201, 1977b: 201. (**hb**) Fairmaire 1892b; Schedl 1977a: 201, 1977b: 201. (**ds**) Alluaud 1900: 438–442; Fairmaire 1892b; Frappa 1933: 179; Hagedorn 1910d: 111; Kleine 1913b, 1914b: 326; Schedl 1977a: 201, 1977b: 201. (**tx**) Eggers 1920: 44, 125–126; Hagedorn 1910a: 156, 1913b: 256; Schaufuss 1891: 27; Schedl 1953d: 71, 1977b: 201.

mitosomus Schedl 1965c: 73 (*Xyleborus*). Holotype ♀; Madagascar, Ankaratra; Schedl Collection in NHMW, Wien. Synonymy: Schedl 1977b: 201.

References: (**tx**) Schedl 1965c: 73, 1977b: 201, 1979c: 157.

***subgranulatus* (Eggers)** 1930d: 202 (*Xyleborus*). Holotype ♀; Assam (Central Range, Sibsagar Div.); FRI, Dehra Dun.

Distribution: Asia (Burma/ Assam, Bengal, Karmataka in India).

Hosts: *Amoora walichii*, *Cinnamomum zeylanicum*, *Juglans regia*, *Sapium eugeniaefolium*, *Terminalia myriocarpa*, *Vatica lanceaefolia*.

References: (**cn**) Mathur & Singh 1961b: 71. (**ds**)

Beeson 1930: 260; Kleine 1934a: 175; Mathur & Singh 1961b: 71. (**tx**) Beeson 1930: 260; Eggers 1930d: 84, 202; Schedl 1979c: 242.

***subsulcatus* (Eggers)** 1927a: 190 (*Xyleborus*). Holotype ♀; Belge Congo (Barumbu); MRCB, Tervuren.
Figures: Nunberg 1963b:pl. 29, figs. 3–4.
Distribution: Africa (Zaire/ Zambia).
Hosts: *Theobroma cacao*.
References: (**hb**) Ghesquiere 1933a: 31, 36, 1933b: 781–786; Loyttyniemi, Beaver, & Loyttyniemi 1984. (**ds**) Beaver & Loyttyniemi 1985a: 76; Kleine 1934a: 175; Schedl 1962j: 522; Wichmann 1954: 521. (**tx**) Eggers 1927a: 190–191; Nunberg 1963b: 58, pl. 29; Schedl 1962j: 522.

***syzygii* (Schedl)** 1959q: 709 (*Xyleborus*). Holotype ♀; Tanganyika, N. Prov.; BMNH, London.
Distribution: Africa (Tanzania).
Hosts: *Syzygium* sp.
References: (**ds**) Schedl 1962j: 532. (**tx**) Schedl 1959q: 709, 1960h: 106, 1962j: 532, 1979c: 248.

***tribuloides* Wood** 1977b: 218. Holotype ♀; 24 km S Valle Nacional, Oaxaca, Mexico; CNCI, Ottawa.
Distribution: North America (Oaxaca in Mexico).
Hosts: *Cecropia* sp.
References: (**ds**) Atkinson & Equihua 1986a: 421; Wood, S. L. 1982b: 844. (**tx**) Wood, S. L. 1977b: 218, 1982b: 844.

***tribulosus* Wood** 1974a: 42. Holotype ♀; Madden Forest, Canal Zone, Panama; Wood Collection.
Distribution: North America (Panama).
References: (**hb**) Wood, S. L. 1982b: 844. (**ds**) Wood, S. L. 1982b: 844. (**tx**) Wood, S. L. 1974a: 42, 1982b: 844.

***truncatipennis* (Schedl)** 1961f: 92 (*Xyleborus*). Holotype ♀; Balbalan, Philippines; Schedl Collection in NHMW, Wien.
Distribution: Philippine Islands.
References: (**ds**) Schedl 1966b: 75. (**tx**) Nobuchi 1983: 304; Schedl 1961f: 92, 1979c: 256.

***undatus* (Schedl)** 1974c: 264 (*Xyleborus*). Holotype ♀; Nord-Vietnam, L. Thsi Nuguyen; MHNB, Bucharest.
Distribution: Asia (Vietnam).
References: (**ds**) Schedl 1974c: 262. (**tx**) Schedl 1974c: 264, 1979c: 260.

Genus *Mesoscolytus* Broun

MESOSCOLYTUS BROUN 1904: 125. Type-species: *Mesoscolytus inurbanus* Broun, monobasic.
References: (**hb**) Wood, S. L. 1986a: 84. (**ds**) Hagedorn 1910d: 75; Hutton 1904: 219; Wood, S. L. 1986a: 84. (**tx**) Broun 1904: 125, 1909: 125; Hagedorn 1910a: 92; Wood, S. L. 1986a: 84.

***inurbanus* (Broun)** 1904: 126 (*Apate*). Holotype ♀; Tairua, New Zealand; not located.
Figures: Baine 1976: 183 (adult).
Distribution: New Zealand.
Notes: (1) The description cited here may be a redescription; Broun states that the type was found about 30 years prior to 1904 and was referred to *Apate*. (3) It is apparent that the species we cite as *inurbanus* is not congeneric with the one identified by Schedl; confirmation is needed.
References: (**ds**) Broun 1904: 126; Hagedorn 1910d: 75; Hutton 1904: 219; Kleine 1913b: 142, 1914b: 304. (**tx**) Bain 1976: 183; Broun 1904: 126; Hagedorn 1910a: 92; Hopkins 1914: 124; Lucas 1920: 406. (**ms**) Lucas 1920: 406.

Genus *Hadrodemius* Wood

HADRODEMIUS WOOD 1980c: 94. Type-species: *Xyleborus globus* Blandford, original designation.
Keys: Eggers 1939b: 11.
References: (**hb**) Wood, S. L. 1986a: 84. (**ds**) Wood, S. L. 1986a: 84. (**tx**) Wood, S. L. 1980c: 94, 1986a: 84.

***amorphus* (Eggers)** 1926b: 147 (*Xyleborus*). Syntypes 1♀, 1♂; Formosa; Eggers Collection, in NHMW, Wien.
Figures: Nobuchi 1967:pl. 1, Yin & Huang 1981: 568.
Distribution: Asia (Fujian, Sichuan, Xizang [Tibet] in China/ Taiwan).
Hosts: *Acacia* sp., *Ficus carica*, *Machilus* sp., *Quercus* sp.
Notes: (1) Schedl 1979c: 18 (citation of holotype invalid).
References: (**ds**) Miwa 1931: 269; Murayama 1934d: 505–512; Nobuchi 1967: 21; Yin & Huang 1981: 567; Yin, Huang, & Li 1984: 177. (**tx**) Eggers 1926b: 147–148, 1939b: 11; Nobuchi 1967:pl. 1; Schedl 1934f: 1645, 1960i: 109, 1979c: 18; Yin & Huang 1981: 567–568, Yin, Huang, & Li 1984: 177.
melli Schedl 1938h: 463 (*Xyleborus*). Lectotype ♀; China, Tsha-jiu-san; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 151. Synonymy: Schedl 1960i: 109.
References: (**ds**) Schedl 1960e: 172. (**tx**) Schedl 1938h: 463–464, 1960e: 172, 1960i: 109, 1979c: 151.

***artecomans* (Schedl)** 1953e: 24 (*Xyleborus*). Lectotype ♀; Fukien, Kautun, China (2300 m), M. Br. 117.40 degrees, 21.5 L; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 26.
Figures: Nunberg 1959a:pl. 18, figs. 7–8, Yin, Huang, & Li 1984: 176 (male).
Distribution: Asia (Fujian, Hainan Island, Xizang [Tibet] in China).
Hosts: *Ficus chorocarpa*, *Machilus* sp.
References: (**ds**) Schedl 1960e: 172; Yin & Huang 1981: 566. (**tx**) McNamara 1984: 759; Nunberg 1959a: 415–416; Schedl 1953e: 24, 1979c: 26; Yin & Huang 1981: 566, 567, Yin, Huang, & Li 1984: 176.

***comans* (Sampson)** 1919: 109 (*Xyleborus*). Syntypes ♀; Borneo, Sarawak (Mt. Merinjak and Quop); BMNH, London.
Distribution: Asia (Malaya), Indonesia (Borneo, Java, Sumatra).
Hosts: *Aphanamixa rohituka*, *Fordia* sp., *Hopea ferrea*, *H. odorata*, *Melanorrhoea* sp., *Rhodamnia trinervia*, *Saurauia pentapetala*, *Shorea bracteolata*, *S. leprosula*, *S. maxwelliana*, *Streblus elongatus*, *Swietenia macrophylla*.
References: (**hb**) Beaver & Browne 1978: 606; Browne 1961c: 111. (**ds**) Beaver & Browne 1978: 606; Browne 1961c: 111; Sampson 1919: 109; Schedl 1965g: 22. (**tx**) Eggers 1926b: 147, 1927b: 406, 1930d: 187–188; Sampson 1919: 109–110; Schedl 1953c: 290, 1964d: 212, 1965g: 22, 1979c: 60.

***globus* (Blandford)** 1896b: 208 (*Xyleborus*). Holotype ♀; New Guinea, Dorey; BMNH, London.
Figures: Nunberg 1959a:pl. 30, figs. 5–6.
Distribution: Asia (India/ Malaya/ Taiwan/ Thailand), Indonesia (Borneo, Java, Sumatra), New Guinea, Philippine Islands, Solomon Islands.
Hosts: *Artocarpus* sp., *Canarium littorale*, *Castanea argenea*, *Cinnamomum* sp., *Dryobalanops longifolia*, *Dysoxylum* sp., *Eupatorium pallescens*, *Intsia palembanica*, *Kleinhovia hospita*, *Litsea megacarpa*, *Piper* sp., *Swietenia macrophyla*, *Turpinia pomifera*.
Notes: (3) The record from "India" probably refers to the Malayan collections (SLW).
References: (**ay**) Browne 1961d: 49. (**cn**) Kleine 1932a: 307. (**hb**) Beaver & Browne 1975: 298; Browne 1961c: 111–112; Kalshoven 1924; 1959c: 163; Kleine 1932a: 307. (**ds**) Beaver & Browne 1975: 298; Browne 1981a: 125; Hagedorn 1910d: 105; Kalshoven 1924b: 358, 1959c: 163; Kleine 1913b: 161, 1914b: 296, 1932a: 307; Nobuchi 1967: 22; Schedl 1971f: 149, 1975e: 451. (**tx**) Blandford 1896b: 208; Hagedorn 1910a: 154.

ursus Eggers 1923a: 173 (*Xyleborus*). Holotype ♀; Malinao Tayabas (Luzon); SMTD, Dresden. Synonymy: Browne 1961c: 111.
References: (**cn**) Mathur & Singh 1961a: 79. (**ds**) Mathur & Singh 1961a: 79; Schedl 1936g: 528, 1964d, 1966b: 76. (**tx**) Browne 1961c: 111; Eggers 1923a: 172–174, 1926b: 147, 1927b: 406, 1939b: 11; Nobuchi 1983: 304; Nunberg 1959a: 442; Schedl 1939e: 329.

ursus fuscus Eggers 1923a: 174 (*Xyleborus*). Holotype ♀; Si-Rambe auf Sumatra; MCG, Genova. Synonymy: Browne 1961c: 111.
References: (**tx**) Browne 1961c: 111; Eggers 1923a: 173–174, 1939b: 10–11; Kalshoven 1959: 163; Schedl 1937e: 544, 1939e: 329, 1942d: 5, 1951i: 42, 90, 1954a: 141, 1961c: 71, 1979c: 102.

***metacomans* (Eggers)** 1930d: 188 (*Xyleborus*). Holotype ♀; Assam (Haflong, Cachar); FRI, Dehra Dun.
Figures: Kumar & Chandra 1977: 45 (male).
Distribution: Asia (Burma/ Assam, Bengal in India).
Hosts: *Clerodendron infortunatum*, *Mesua ferrea*, *Terminalia myriocarpa*.
Notes: (3) Kumar & Chandra 1977: 35 (described male).
References: (**ay**) Gardner 1934b: 1–17. (**cn**) Mathur & Singh 1960a: 6, 1961b: 34. (**ds**) Mathur & Singh 1960a: 6, 1961b: 34. (**tx**) Eggers 1930d: 187–188, 1939d; Gardner 1934b: 1–17; Kumar & Chandra 1977: 35, 45.

***pseudocomans* (Eggers)** 1930d: 187 (*Xyleborus*). Holotype ♀; Assam: Upper Dihing Reserve, Lakhimpur; FRI, Dehra Dun.
Distribution: Asia (Burma/ Xizang [Tibet] in China/ Assam, Bengal in India).
Hosts: *Cinnamomum cecicodaphne*, *Mallotus alba*, *Myristica longifolia*, *Terminalia myriocarpa*.
References: (**cn**) Mathur & Singh 1961b: 345. (**ds**) Beeson 1930; Kleine 1934a: 175; Mathur & Singh 1961b: 345; Schedl 1969c: 54. (**tx**) Beeson 1930: 252; Eggers 1930d: 187; Schedl 1953e: 24, 1979c: 201.

***pubifer* (Schedl)** 1972m: 200 (*Xyleborus*). Holotype ♀; Brit. N. Borneo; BMNH, London.
Distribution: Indonesia (Sarawak in Borneo).
References: Schedl 1972m: 200.

***tomentosus* (Eggers)** 1939b: 10 (*Xyleborus*). Holotype ♀; Nordostbirma (Kambaiti, 7000 Fuss); NHR, Stockholm.
Distribution: Asia (Burma).
References: (**tx**) Eggers 1939b: 10.

Genus *Eccoptopterus* Motschulsky

ECCOPTOPTERUS MOTSCHULSKY 1863: 515. Type-species: *Eccoptopterus sexspinosus* Motschulsky = *Scolytus spinosus* Olivier, monobasic.

Platydactylus Eichhoff 1886: 25. Type-species: *Platydactylus gracilipes* Eichhoff, monobasic, preoccupied by Goldfuss 1820.
References: (**tx**) Blandford 1893a: 162, 1893d: 442; Eichhoff 1886: 25; Hagedorn 1909a: 733; Schedl 1962j: 90.

Eurydactylus Hagedorn 1909a: 733. Type-species: *Platydactylus gracilipes* Eichhoff, automatic. Synonymy: Hagedorn 1910d: 110.
References: (**tx**) Hagedorn 1909a: 733, 1910d: 110, 1912b: 35; Schedl 1962j: 90.

References: (**ay**) Francke-Grosmann 1958: 139–144; Nobuchi 1969a: 64. (**hb**) Browne 1958b: 164–182; Wood, S. L. 1986a: 84. (**ds**) Brimblecombe 1953: 18; Hagedorn 1910d: 97–98; Schedl 1962j: 90, 1966b: 79, 1977b: 223; Wood, S. L. 1986a: 84. (**tx**) Blandford 1898b: 194; Browne 1955: 351, 1961c: 174–178, 1962g: 76; Eggers 1923a: 193; Eichhoff 1876a: 379; Hagedorn 1910a: 150, 1912b: 35; Hopkins 1914: 121, 135, 1915b: 10, 1915c: 176, 226; Motschulsky 1963: 515; Samp-

son 1911: 382, 1919: 112; Schedl 1936j: 26, 1939j: 570, 1957d: 83–84, 1959a: 512, 1962j: 90, 1977b: 223; Strohmeyer 1911: 25; Wood, S. L. 1986a: 84.

***drescheri* Eggers** 1940d: 154. Holotype ♀; Java (Batoerraden, G. Slamet); F.C. Drescher Collection.
Distribution: Indonesia (Java).
References: (**tx**) Eggers 1940d: 154; Schedl 1979c: 84.

***eccoptopterus* (Schedl)** 1951k: 154 (*Xyleborus*). Lectotype ♀; Tutuila, Fagatogo, 2100 ft., Upolu, Afiamalu, 2200 ft.; Schedl Collection, designated by Schedl 1979c: 86.
Distribution: Samoan Islands.
References: (**tx**) Beaver 1976b: 544; Schedl 1951k: 138, 153–154, 1979c: 86.

***gracilipes* (Eichhoff)** 1886: 25 (*Platydactylus*). Holotype ♀; Moluccas; Hamburg Museum, lost.
Distribution: Asia (Malaya), Indonesia (Batu Island, Borneo, Java, Moluccas, Sumatra), New Guinea, Philippine Islands, Samoan Islands.
Hosts: *Artocarpus elastica*, *Shorea leprosula*.
References: (**ec**) Browne 1958b. (**hb**) Browne 1958b, 1961c: 174; Kalshoven 1959a: 226, 1959c: 166. (**ds**) Browne 1961c: 174, 1980d: 491; Hagedorn 1910d: 105; Kalshoven 1959c: 166; Kleine 1913b: 168; Sampson 1919: 112; Schedl 1966b: 80. (**tx**) Eggers 1923a: 192–193, 1927b: 407, 1927c: 102; Eichhoff 1886: 25; Hagedorn 1910a: 154; Hopkins 1914: 122, 127; Kalshoven 1959a: 226; Nobuchi 1983: 304; Sampson 1919: 112; Schedl 1940b: 442, 1951i: 44, 1954a: 144.
collaris Eggers 1923a: 194 (*Xyleborus*). Lectotype ♀; Batoe Inseln (Tanah Masa); USNM, Washington, designated by Anderson & Anderson 1971: 9. Synonymy: Wood 1989: 172.
References: (**hb**) Kalshoven 1959c: 166. (**ds**) Kalshoven 1959c: 166; Schedl 1961c: 70, 1965g: 24, 1966b: 80. (**tx**) Anderson, W. H. & Anderson 1971: 9; Eggers 1923a: 194; Nobuchi 1983: 304; Schedl 1939c: 332, 1940b: 435, 442, 1965g: 24; Wood, S. L. 1989: 172.

***limbus* Sampson** 1911: 381. Holotype ♂; Perak; BMNH, London.
Distribution: Asia (Malaya), Indonesia (Borneo, Java, Sumatra, Sunda Islands).
Hosts: *Adenanthera pavonina*, *Aphanamixa rohituka*, *Arthrophyllum diversifolium*, *Castanopsis sumatrana*, *Dipterocarpus baudii*, *Eucalyptus deglupta*, *Grewia* sp., *Heritiera javanica*, *Hopea odorata*, *Koompassia excelsa*, *Rhodamnia trinervia*, *Shorea leprosula*, *Swietenia macrophylla*, *Swintonia specifera*.
References: (**cn**) Browne 1949e. (**ec**) Browne 1958b. (**hb**) Beaver & Browne 1978: 587; Browne 1935a, 1941, 1958b, 1961c: 177; Kalshoven 1959c: 167. (**ds**) Beaver & Browne 1978: 587; Browne 1935a, 1961c: 177–178, 1984b: 286, 1984c: 448; Kalshoven 1959c: 167. (**tx**) Browne 1955: 351; Eggers 1923a: 193, 1927b: 407; Sampson 1911: 381–383; Schedl 1954a: 144.
squamulosus duplicatus Eggers 1923a: 193 (*Xyleborus*). Lectotype ♀; Perak; USNM, Washington, designated by Anderson & Anderson 1971: 12. Synonymy: Wood 1989: 172.
Notes: (3) Eggers 1923a: 193 (named var. *auratus*).
References: (**tx**) Anderson, W. H. & Anderson 1971: 12; Eggers 1923a: 193; Schedl 1954a: 144, 1979c: 236; Wood, S. L. 1989: 172.

***multispinosus* (Hagedorn)** 1908: 377 (*Platydactylus*). Syntypes ♀; Sumatra und Kamerun; MNB, Berlin?
Distribution: Indonesia (Sumatra).
Notes: (1) Originally named as a subspecies of *sexspinosus*.
References: (**hb**) Hagedorn 1913a: 47–48. (**ds**) Kleine 1914b: 268, 312; Sampson 1914: 389. (**tx**) Eggers 1920: 125–126; Hagedorn 1908; Sampson 1911: 382, 1914: 389; Schedl 1962j: 92; Strohmeyer 1911: 25.
sexspinosus pluridentatus Schedl 1942d: 49. Lectotype ♀; Sumatra; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 227. Synonymy: Kalshoven 1959b: 96.
References: (**cn**) Yunus & Hua 1980: 231. (**ds**) Browne 1949b; Yunus & Hua 1980: 231. (**tx**) Browne 1949b; Kalshoven 1959b: 96–97; Schedl 1942a: 171, 1942d: 49, 1979c: 227.

***sagittarius* Schedl** 1939f: 41. Lectotype ♀; Luzon Rizal, Mt. Irid; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 218.
Distribution: Asia (Malaya), Indonesia (Borneo, Sumatra), Philippine Islands.
Hosts: *Gmelina arborea*, *Shorea* sp., *Swietenia macrophylla*.
References: (**hb**) Browne 1961c: 176; Kalshoven 1959c: 167. (**ds**) Browne 1961a: 307, 1961c: 176–177; Kalshoven 1959c: 167; Nobuchi 1979a: 407; Schedl 1966b: 80. (**tx**) Nobuchi 1983: 304; Schedl 1939f: 41, 1979c: 218.

***spinosus* (Olivier)** 1795: 9 (*Scolytus*). Holotype ♀; Java; MNHN, Paris.
Figures: Nobuchi 1978a:pl. 1, Nunberg 1959a:pl. 28, figs. 6–8, Schedl 1962j: 91, 1977b: 223.
Distribution: Africa (Angola/ Batchian Island/ Cameroon/ Canary Islands/ Congo/ Dama Island/ Equatorial Guinea/ Fernando Poo Island/ Ghana/ Guinea/ Ivory Coast/ Kenya/ Mauritania/ Nigeria/ Seychelles Islands/ South Africa/ Tanzania/ Uganda/ Zaire/ Zambia), Asia (Burma/ Andaman Islands, Assam, Maharashtra, Tamil Nadu in India/ Japan/ Malaya/ Sri Lanka/ Taiwan/ Thailand/ Vietnam), Australia (Queensland), Indonesia (Borneo, Celebes, Java, Sumatra), Madagascar, New Guinea, Philippine Islands, Reunion Island, Tonga.
Hosts: *Albizzia lebbek*, *Anacardium occidentale*, *Artocarpus nobilis*, *Bassia latifolia*, *Bridellia retusa*, *Canarium euphyllum*, *Dipterocarpus*

turbinatus, *Gluta travanicorica*, *Mangifera indica*, *Shorea robusta*, *Swietenia macrophylla*, *Tectona grandis*, *Terminalia belerica*.

References: (**ay**) Butovitsch 1929: 7; Francke-Grosmann 1963: 422. (**bv**) Gray, B. 1974c. (**cn**) Anonymous 1970c: 13; Beaver 1988a: 63; Cachan 1957: 15; Cotes 1891: 61, 1893: 155; Miller 1932: 19. (**hb**) Beaver 1988a: 63; Beaver & Browne 1975: 289, 1978: 587; Beaver & Loyttyniemi 1985a: 70; Browne 1961c: 175–176; Chobaut 1897: 262; Gray, B. 1974c; Loyttyniemi, Beaver, & Loyttyniemi 1984; Roberts 1969: 125; Schedl 1962j: 91, 1977b: 224; Zimmermann 1908: 716–724. (**ds**) Alluaud 1900: 441; Anonymous 1970c: 13; Beaver 1988a: 63; Beaver & Browne 1975: 289, 1978: 587; Beaver & Loyttyniemi 1985a: 70; Browne 1963: 246–247, 1966: 257, 1970: 541, 1980d: 491, 1985b: 290; Ferreira 1965: 1119; Nobuchi 1979a: 407; Ohno, Yoneyama, & Nakazawa 1987a: 89; Ohno, Yoshioka, et al. 1988a: 95, 1989: 64; Schedl 1962j: 91, 1964d, 1965g: 21, 1966b: 80, 1966g: 33, 1968e: 263, 1969d: 7, 1969e: 156, 1970h: 180, 1971a: 279, 1971g: 190, 1974c: 262, 1975a: 454, 1975e: 452, 1975i: 347, 1975k: 278, 1977b: 224. (**tx**) Beaver 1987b: 87; Blandford 1863a: 162, 1893b: 63–65, 1894b: 261, 1895a: 322, 1896c: 64–65, 1898a: 425, 1898b: 201; Butovitsch 1929: 7; Eggers 1927c: 102; Hagedorn 1910a: 156; Nobuchi 1978a:pl. 1, 1983: 304; Olivier 1795b: 9; Schedl 1962j: 91, 1962p: 201, 1977b: 223–224.

sexspinosus Motschulsky 1863: 515. Syntypes ♀; Des Montagnes de Nura-Ellia et du Birma; IZM, Moscow. Synonymy: Schedl 1962p: 201.

References: (**ay**) Francke-Grosmann 1957: 139–144. (**cn**) Beeson 1916: 221–223, 1922c: 495, 1923: 164; Brader 1964: 4; Dupont 1916; Green 1912a: 39, 1916: 608–636; Hagedorn 1913a; Hall 1914: 1–5; Kalshoven 1924c, 1932: 247, 1951: 851; Kleine 1932a: 307; Mathur & Singh 1960b: 14, 1961a: 46, 1961b: 14; Mayne 1917: 1–8; Morstatt 1937: 26; Roonwal 1954: 19; Schultze 1923: 40; Stebbing 1903a: 281; Thompson, G. H. 1960; Webb & Jones 1957: 37, 42, 1958: 383. (**ec**) Beeson 1922c: 495, 1923: 164; Francke-Grosmann 1957. (**hb**) Beeson 1916a: 221, 1922c: 495, 1923: 164; Blandford 1894b; Braune 1941; Browne 1935a, 1941: 65, 1949b: 892, 1949e: 178–189, 1961c: 175–176, 1963a: 246; Cotes 1893a; Hagedorn 1913a: 5–25; Jones, Roberts, & Baker 1959: 10, 14, 23; Kalshoven 1924c: 10, 1958a: 186, 1959a: 224, 1959c: 167; Kleine 1932a: 307; Lengerken 1939: 257, 1954: 325; Neger 1911: 50–58; Roberts 1969: 125; Schedl 1959p: 18; Stebbing 1903a: 284, 1911a: 6; Webb & Jones 1958: 383. (**ds**) Beeson 1916a, 1922c: 495, 1923: 164, 1930: 257–258, 1941: 402; Bhasin, Roonwal, & Singh 1958: 17, 38, 68; Blandford 1894b: 221, 1895a: 495, 1896c, 1897b; Brimblecombe 1953: 18; Browne 1935a, 1961c: 175, 1963a: 246; Cotes 1893a; Gardner 1957a; Gemminger & Harold 1872: 2696; Green 1912a: 39; Hagedorn 1907a, 1907b, 1910d: 110–111, 1913a; Kalshoven 1932: 247, 1951: 851, 1958a: 186, 1959b: 96–97, 1959c: 167; Kleine 1912a: 212, 1913b: 168, 1914b: 268, 274, 278, 288, 290, 312, 1932a: 307, 1934a: 177; Lefroy & Howlett 1909: 395; Mathur & Singh 1960b: 14, 1961a: 46, 1961b: 14; Mayne & Donis 1962: 306; Miwa 1931: 269; Murayama 1934d: 511; Nobuchi 1967: 23; Nonveiller 1984: 40; Roba 1935: 338; Roonwal 1954: 19–67; Sampson 1914: 389; Schedl 1936d: 5, 1936g: 531, 1936j: 20, 1937f: 15, 1959a: 512, 1959p: 18, 1959q: 706, 1962i: 72, 1971a: 274, 1979f: 103; Schultze 1923: 401; Spahr 1981; Stebbing 1903a: 284; Strohmeyer 1911b: 25; Thompson, G. H. 1960, 1963: 43; Wichmann 1954: 503, 524; Wood, S. L. 1957e: 1273. (**tx**) Beeson 1930: 257–258; Blandford 1893a, 1893b: 63–64, 1894b, 1896c; Eggers 1922b: 174, 1923a: 130, 193–194, 1925: 153, 1927b: 407, 1927c: 102–103, 1939c: 114; Eichhoff 1876a: 379; Green 1912a: 39; Hagedorn 1907a: 261, 1907b: 111–112, 1908: 337, 1910a: 156, 1912b: 33–36; Hopkins 1914: 121, 135; Kalshoven 1959a: 224, 1959b: 96; Keler 1928: 29; Motschulsky 1863: 515; Murayama 1934: 293; Nunberg 1959a: 438; Sampson 1911: 382–383, 1914: 389; Schedl 1933e: 105, 1937f: 1, 1939f: 40–41, 1939g: 170, 1940b: 435, 1942a: 171, 1942d: 45, 1951f: 40, 1951i: 44, 1951k: 154, 1952c: 62, 1952g: 49, 52, 1953b: 124, 1953d: 69, 1953g: 243, 1954a: 144, 1954d: 873, 1954e: 54, 1955b: 279, 282, 1955d: 270, 1959a: 512, 1959q: 706, 1961e: 128, 1962b: 185–187, 1962p: 201, 1964d: 212, 1965g: 21, 1969d: 7–12; Schedl, W. 1962: 364; Strohmeyer 1911b: 17, 25; Wood, S. L. 1969c: 118; Wylie & Yule 1977.

abnormis Eichhoff 1869b: 282 (*Xyleborus*). Syntypes ♀; Ceylon; Hamburg Museum, lost. Synonymy: Eichhoff 1878b: 378.

References: (**ds**) Blandford 1896c: 63; Gemminger & Harold 1872: 2684; Ghesquiere 1933a: 31, 36, 1933b: 781–786. (**tx**) Blandford 1896c: 63; Eichhoff 1869b: 282, 1876a: 378–379, 1878b: 341–342, 479, 1886: 25–26, 1898b: 341; Hagedorn 1905: 412, 1909: 733, 1912b: 33–36; Sampson 1911: 382; Schedl 1962j: 92; Strohmeyer 1911: 25.

***squamulosus* (Eggers)** 1923a: 193 (*Xyleborus*). Lectotype ♀; Pangherang-Pisang auf Sumatra; USNM, Washington, designated by Anderson & Anderson 1971: 31.

Distribution: Indonesia (Mentawei, Sumatra).

References: (**tx**) Anderson, W. H. & Anderson 1971: 31; Browne 1955: 351; Eggers 1923a: 193, 1927b: 407.

squamulosus auratus Eggers 1923a: 193 (*Xyle-*

borus). Lectotype ♀; Bandar Baroe an der Ostkust Sumatras; Eggers Collection, in NHMW, Wien, designated by Schedl 1979c: 236.

Notes: (3) Schedl note in his collection treated this as a subspecies of *limbus*; it could be a good species.

References: (**tx**) Anderson, W. H. & Anderson 1971: 5; Eggers 1923a: 193–194; Schedl 1979c: 236.

***tarsalis* Schedl** 1936j: 26. Holotype ♀; Borneo; Schedl Collection in NHMW, Wien.

Distribution: Indonesia (Borneo).

References: (**ds**) Schedl 1936j: 26, 1964g: 241, 1965g: 24. (**tx**) Eggers 1940d: 154; Schedl 1936j: 26, 1954c: 154, 1964g: 246, 1965g: 24, 1979c: 250.

Genus *Schedlia* Browne

SCHEDLIA BROWNE 1950b: 641. Type-species: *Xyleborus sumatranus* Hagedorn, original designation.

Keys: Bright 1980b: 371, Browne 1950b: 642.

References: (**hb**) Browne 1961c: 183; Wood, S. L. 1986a: 84. (**ds**) Bright 1980b: 369; Wood, S. L. 1986a: 84. (**tx**) Bright 1980b: 369; Browne 1950b: 641; Wood, S. L. 1986a: 84.

***allecta* (Schedl)** 1942d: 33 (*Xyleborus*). Holotype ♀; Saigon; Schedl Collection in NHMW, Wien.

Distribution: Asia (Vietnam).

References: (**ds**) Bright 1980: 369; Browne 1950b: 641–642. (**tx**) Bright 1980b: 371; Browne 1950b: 641–642, 1968a: 132; Schedl 1942d: 33, 1979c: 16.

***brownei* Bright** 1980b: 369. Holotype ♀; Fly River, 5 miles below Palmer River, Papua [New Guinea]; AMNH, New York.

Figures: Bright 1980b: 371.

Distribution: New Guinea.

References: (**tx**) Bright 1980b: 369, 371.

***convexa* Bright** 1980b: 370. Holotype ♀; Mt. Riu, Sudest Isl., 250–350 m, Papua, New Guinea; AMNH, New York.

Figures: Bright 1980b: 371.

Distribution: New Guinea.

References: (**tx**) Bright 1980b: 370–371.

***paraconvexa* Bright** 1980b: 370. Holotype ♀; Abaleti, Rossei Isl., 0–50 m, Papua, New Guinea; AMNH, New York.

Distribution: New Guinea.

References: (**ds**) Browne 1986c: 661; Ohno et al. 1987: 89. (**tx**) Bright 1980b: 370.

***praeusta* (Eggers)** 1923a: 167 (*Xyleborus*). Holotype ♀; Deutsch Neu Guinea, Kaiserin Augustafluss; MNB, Berlin.

Distribution: New Guinea.

References: (**ds**) Bright 1980b: 369. (**tx**) Bright 1980b: 371; Browne 1950b: 641; Eggers 1923a: 167; Schedl 1940b: 434–435, 1952k: 163.

***sumatrana* (Hagedorn)** 1908: 381 (*Xyleborus*). Syntypes ♀; Sumatra-Palembang; Hamburg Museum, lost.

Distribution: Asia (Malaya/ Vietnam), Indonesia (Borneo, Sumatra), New Guinea.

Hosts: *Balanocarpus heimii*, *Dipterocarpus* sp., *Dryobalanops oblongifolia*, *Hopea* sp., *Shorea leprosula*, *S.* spp.

References: (**ec**) Browne 1958b. (**hb**) Beaver & Browne 1978: 598; Browne 1958b, 1961c: 183. (**ds**) Beaver & Browne 1978: 598; Bright 1980b: 369; Browne 1950: 643, 1961a: 307, 1961c: 183, 1968a: 133, 1984b: 286; Hagedorn 1910d: 111; Kleine 1913b: 163, 1914b: 268; Sampson 1919: 109, 111. (**tx**) Bright 1980b: 371; Browne 1950: 641–643, 1968a: 132; Eggers 1923a: 167; Hagedorn 1908: 381, 1910a: 157; Sampson 1919: 109, 111; Schedl 1939e: 331, 1942a: 171, 1942c: 188, 192, 1942d: 33–34.

***usitata* (Schedl)** 1942c: 188 (*Xyleborus*). Holotype ♀; Neu-Guinea; Schedl Collection in NHMW, Wien.

Distribution: New Guinea.

References: (**ds**) Bright 1980b: 369; Browne 1950: 643. (**tx**) Bright 1980b: 371; Browne 1950: 641–643; Schedl 1942c: 188, 1942d: 33, 1979c: 262.

***vulpina* (Schedl)** 1942a: 192 (*Xyleborus*). Lectotype ♀; Malaya: Selangor, Ampang; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 269.

Distribution: Asia (Malaya).

Hosts: *Quercus* sp.

References: (**hb**) Browne 1961c: 183. (**ds**) Bright 1980b: 369. (**tx**) Bright 1980b: 369; Browne 1950b: 641–642; Schedl 1942a: 191–192, 1942d: 33, 1979c: 269.

Genus *Coptodryas* Hopkins

COPTODRYAS HOPKINS 1915b: 10, 54. Type-species: *Coptodryas confusa* Hopkins, original designation.

Microperus Wood 1980c: 94. Type-species: *Xyleborus theae* Eggers, original designation. Synonymy: Wood 1986a: 84, 1986c: 265.

References: (**tx**) Wood, S. L. 1980c: 94, 1986a: 84, 1986c: 265.

Adryocoetes Eggers 1951: 370. Type-species: *Adryocoetes nitidus*, nomen nudum, = *Xyleborus pullus* Schedl. Synonymy: Schedl 1952b: 371.

References: (**tx**) Eggers 1951: 370; Schedl 1952b: 370–371.

References: (**hb**) Wood, S. L. 1986a: 84. (**ds**) Wood, S. L. 1986a: 84. (**tx**) Hopkins 1915b: 10, 54; Wood, S. L. 1986a: 84.

***abbreviata* (Schedl)** 1942a: 195 (*Xyleborus*). Lectotype ♀; Malaya, Selangor, Buloh F. R.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 8.

Distribution: Asia (Malaya).

Hosts: *Shorea leprosula*.

References: (**ds**) Browne 1961c: 119. (**tx**) Schedl 1942a: 195, 1979c: 8.

***alpha* (Beeson)** 1929: 239 (*Xyleborus*). Holotype ♀; India: Sunderbans Div.; BMNH, London.
Distribution: Asia (Ghizhou in China/ Assam, Bengal in India/ Malaya/ Sri Lanka/ Vietnam), Samoan Islands.
Hosts: *Chrysophyllum roxburghii*, *Cordia grandis*, *Shorea* sp., *Vatica lanceaefolia*.
Notes: (1) Described by Sampson 1923b: 289, but without an acceptable Linnaean name, as *bicolor* var. *a*.
References: (**cn**) Mathur & Singh 1960a: 23, 1961a: 37, 1961b: 71; Roonwal 1954: 48. (**ds**) Mathur & Singh 1960a: 23, 1961a: 37, 1961b: 71; Roonwal 1954: 48; Schedl 1959a: 505, 1971a: 271, 1971c: 364, 1973c: 378. (**tx**) Beeson 1929: 239, 1930: 225; Sampson 1923b: 289; Schedl 1959a: 505.

***artegrapha* (Schedl)** 1942d: 44 (*Xyleborus*). Lectotype ♀; Mt. Gede, 800 m, Tofroo, Gombang, Mount Salak, Java; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 27.
Distribution: Indonesia (Java).
Hosts: *Albizzia falcata*, *Casurina equisetifolia*, *Marumia muscosa*.
References: (**bv**) Gray, B. 1974c. (**hb**) Gray, B. 1974c; Kalshoven 1959c: 148. (**ds**) Kalshoven 1959c: 148. (**tx**) Schedl 1942d: 44, 1979c: 27.

***atava* (Schedl)** 1979g: 104 (*Xyleborus*). Holotype ♀; Papua, Bulolo, Morobe District, Upper Manki L. A.; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1979g: 104.

***bella* (Sampson)** 1921: 31 (*Xyleborus*). Holotype ♀; Mt. Matang, Borneo; BMNH, London.
Figures: Nunberg 1978: 111.
Distribution: Asia (Malaya), Indonesia (Borneo, Moluccas).
Hosts: *Vatica* sp.
References: (**hb**) Browne 1961c: 165. (**ds**) Browne 1961c: 165; Sampson 1921: 31. (**tx**) Browne 1962c: 204–205; Nunberg 1978: 110–111; Sampson 1921: 31; Schedl 1938g: 427.

***camela* (Eggers)** 1940d: 152 (*Xyleborus*). Holotype ♀; Java (Batoerraden, G. Slamet); Eggers Collection, in NHMW, Wien.
Distribution: Indonesia (Java).
References: (**tx**) Eggers 1940d: 152; Schedl 1979c: 50.

***chimbui* (Schedl)** 1973f: 74 (*Xyleborus*). Holotype ♀; Peria Creek, Kwagira River, Milne Bay Dist. [New Guinea]; AMNH, New York.
Distribution: New Guinea.
References: (**tx**) Schedl 1973f: 74, 1979c: 56.
chimbui Schedl 1973e: 90 (*Xyleborus*). Holotype ♀; Peria Creek, Kwagira River, Milne Bay District [New Guinea]; AMNH, New York, preoccupied by Schedl 1973f: 74.
Notes: (1) This is an apparent unintentional redescription of the *chimbui* Schedl that was named on p. 74 in the same journal.
References: (**tx**) Schedl 1973e: 90.

***chrysophylli* (Eggers)** 1930d: 205 (*Xyleborus*). Holotype ♀; Assam (Longai Reserve, Sylhet); FRI, Dehra Dun.
Distribution: Asia (Assam, Bengal in India).
Hosts: *Chrysophyllum roxburghii*.
References: (**ds**) Beeson 1930: 229; Kleine 1934a: 175. (**tx**) Beeson 1930: 229; Eggers 1930d: 205.

***confusa* Hopkins** 1915b: 54. Holotype ♀; Pagbilao, P.I.; USNM, Washington.
Figures: Browne 1972b: 22.
Distribution: Asia (Malaya), Indonesia (Borneo), Philippine Islands.
Hosts: *Dipterocarpus grandiflorus*, *Hopea ferrea*, *Shorea curtisii*, *S. multiflora*, *S. parviflora*, *Vatica* sp.
References: (**ay**) Lhoste & Roche 1960. (**ds**) Kirk 1969; Kleine 1934a: 156; (**tx**) Hopkins 1915b: 54; Nobuchi 1983: 302; Schedl 1942a: 191, 1979c: 62; Wood, S. L. 1960a: 51.
cryphaloides Schedl 1942a: 191 (*Xyleborus*). Holotype ♀; Malaya, Selangor, Buloh F.R.; BMNH, London.
Notes: (1) A note by Schedl in his collection lists this as a synonym of *confusa* Hopkins.
References: (**hb**) Beaver & Browne 1978: 607; Browne 1961c: 161. (**ds**) Beaver & Browne 1978: 607; Browne 1961a: 305, 1961c: 161, 1981b: 598; Schedl 1954c: 154, 1958b: 101, 1964c: 304. (**tx**) Browne 1972b: 22; Schedl 1942a: 191.

***corporaali* (Eggers)** 1923a: 210 (*Xyleborus*). Lectotype ♀; Kotangan an der Ostkuste Sumatras; USNM, Washington, designated by Anderson & Anderson 1971: 10.
Distribution: Asia (Bhutan/ Malaya), Indonesia (Java, Sumatra).
Hosts: *Hevea brasiliensis*, *Shorea leprosula*.
References: (**cn**) Kleine 1932a: 307; Mathur & Singh 1961a: 40. (**hb**) Browne 1961c: 146; Kleine 1932a: 307. (**ds**) Beeson 1961: 303; Browne 1961c: 164–165, 1986c: 663; Kleine 1932a: 307, 1934a: 175; Mathur & Singh 1961a: 40; Ohno et al. 1988a: 93, 1989: 61; Schedl 1936d: 2, 1975c: 383. (**tx**) Anderson, W. H. & Anderson 1971: 10; Eggers 1922a: 88, 1923a: 210, 1927a: 189, 1930d: 204–205; Schedl 1936d: 2, 1942d: 6.

***costipennis* (Schedl)** 1959a: 501 (*Xyleborus*). Holotype ♀; Ceylon: Denawake Group; Schedl Collection in NHMW, Wien.
Distribution: Asia (Sri Lanka).
References: (**tx**) Schedl 1959a: 501, 1979c: 67.

***curvidentis* (Schedl)** 1958b: 104 (*Xyleborus*). Lectotype ♀; Malaya, Selangor, Kepong; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 73.
Distribution: Asia (Malaya), Indonesia (Borneo).
Hosts: *Balanocarpus heimii*, *Fissistigma elegans*, *Shorea leprosula*.
References: (**ds**) Browne 1961c: 108, 1962c: 202. (**tx**) Schedl 1958b: 104, 1979c: 72–73.

***cylindrica* (Eggers)** 1927c: 94 (*Xyleborus*). Lectotype ♀; Philippinen: Luzon, Provinz Mountain, Balbalan; USNM, Washington, designated by Anderson & Anderson 1971: 11.
Distribution: Asia (Malaya), Indonesia (Borneo), Philippine Islands (Luzon).
Hosts: *Artocarpus scortechinii*.
References: (**ds**) Browne 1961c: 156, 1965a: 189, 1980b: 380; Schedl 1966b: 50. (**tx**) Anderson, W. H. & Anderson 1971: 11; Eggers 1927b: 402, 1927c: 94–95; Nobuchi 1983: 302; Schedl 1942a: 196, 1979c: 74.

***diversicolor* (Eggers)** 1923a: 202 (*Xyleborus*). Holotype ♀; Butuan auf Mindanao; SMTD, Dresden.
Distribution: Asia (Malaya), Indonesia (Borneo), New Guinea, Philippine Islands (Mindanao).
Hosts: *Dipterocarpus baudii*, *Endospermum malaccense*, *Koompassia excelsa*, *Nephelium* sp., *Pasania sundaica*.
References: (**cn**) Mathur & Singh 1960b: 84. (**hb**) Browne 1961c: 135. (**ds**) Beeson 1961: 304; Browne 1961c: 135, 1965a: 189, 1980c: 482; Mathur & Singh 1960b: 84; Nobuchi 1978a: 42, 1979a: 406; Ohno et al. 1988a: 93, 1989: 61; Schedl 1966b: 51. (**tx**) Browne 1970: 573; Eggers 1923a: 202, 1930d: 204; Nobuchi 1983: 302; Schedl 1938g: 426, 1939e: 330, 1939f: 49.

***docta* (Schedl)** 1975f: 364 (*Xyleborus*). Holotype ♀; Upper Manki logging area, Bulolo, Morobe District [New Guinea]; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1975f: 364, 1979c: 83.

***elegans* (Sampson)** 1923b: 288 (*Xyleborus*). Holotype ♀; Bengal: Raja Bhat Khawa; BMNH, London.
Distribution: Asia (Burma/ Bengal, Madhya Pradesh in India), Indonesia (Java).
Hosts: *Albizzia moluccana*, *Eugenia jambolana*, *Lansium* sp, *Shorea robusta*.
References: (**cn**) Mathur & Singh 1961a: 46. (**ec**) Banerjee 1983. (**hb**) Kalshoven 1959c: 152. (**ds**) Beeson 1930: 214, 233, 1961: 304; Kalshoven 1959c: 152; Kleine 1934a: 173; Mathur & Singh 1961a: 46; Schedl 1962b: 186. (**tx**) Beeson 1930: 214, 233; Sampson 1923b: 288; Schedl 1954a: 141, 1958k: 154.
concinnus Beeson 1930: 214 (*Xyleborus*). Holotype ♀; Burma: Kondan Reserve, Insein; 4 at FRI, Dehra Dun, but none of these are labeled as the holotype. Synonymy: Wood 1989: 171.
References: (**cn**) Roonwal 1954: 48. (**hb**) Kalshoven 1959c: 152. (**ds**) Beeson 1930: 214, 1961: 303; Kalshoven 1959c: 152; Roonwal 1954: 48. (**tx**) Beeson 1930: 214.
flexiocostatus Schedl 1942d: 31 (*Xyleborus*). Lectotype ♀; Java, Buitenzorg; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 98. Synonymy: Schedl 1958k: 154.
References: (**tx**) Schedl 1942d: 31, 1958b: 104, 1958k: 154, 1959a: 501, 1979c: 98.

***erinacea* (Eggers)** 1927c: 103 (*Xyleborus*). Holotype ♀; Philippinen: Mindanao, Prov. Lanao, Kolambugan; Eggers Collection, in NHMW, Wien.
Distribution: Philippine Islands (Mindanao).
References: (**ds**) Schedl 1966b: 52. (**tx**) Eggers 1927c: 103–104; Nobuchi 1983: 302; Schedl 1979c: 91.

***eucalyptica* (Schedl)** 1938f: 51 (*Xyleborus*). Lectotype ♀; North Queensland, Geagana [actually Gadgarra]; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 92.
Distribution: Australia (Queensland).
Hosts: *Araucaria cunninghamii*, *Cardwellia sublimus*, *Endiandra palmerstonii* [not *Eucalyptus palmerstonii* as reported by Schedl], *Euroschinus falcatus*, *Flindersia brayleyana*, *Nauclea orientalis*.
References: (**cn**) Brimblecombe 1951. (**hb**) Brimblecombe 1951. (**tx**) Schedl 1938f: 51–52, 1948g: 25, 1954a: 152, 1979c: 92.

***exsculpta* (Eggers)** 1927c: 101 (*Xyleborus*). Lectotype ♀; Philippinen: Mindanao, Prov. Surigao, Surigao; USNM, Washington, designated by Anderson & Anderson 1971: 13.
Distribution: Philippine Islands (Luzon, Mindanao).
References: (**ds**) Schedl 1966b: 53. (**tx**) Anderson, W. H. & Anderson 1971: 13; Eggers 1927c: 101–102; Nobuchi 1983: 302; Schedl 1979c: 94.

***extensa* (Schedl)** 1955b: 301 (*Xyleborus*). Holotype ♀; Neu-Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1955b: 281, 301, 1979c: 94.

***gorontalosa* (Schedl)** 1939f: 50 (*Xyleborus*). Lectotype ♀; Gorontalo, Celebes; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 107.
Distribution: Indonesia (Celebes).
Hosts: Rattan.
References: (**hb**) Kalshoven 1959c: 149. (**ds**) Kalshoven 1959c: 149. (**tx**) Schedl 1939f: 49–50, 1979c: 107.

***huangi* (Browne)** 1983d: 34 (*Xyleborus*). Holotype ♀; China: Fujian, Chongan; IZAS, Beijing.
Distribution: Asia (Fujian in China).
References: (**tx**) Browne 1983d: 34.

***intermedius* (Eggers)** 1923a: 201 (*Xyleborus*). Lectotype ♀; Neu Pommern (Ralum); USNM, Washington, designated by Anderson & Anderson 1971: 16.
Distribution: Asia (Malaya), Indonesia (Java), Australia, New Britain Island, New Guinea, Philippine Islands.
References: (**bv**) Gray, B. 1974c. (**hb**) Kalshoven 1959c: 144. (**ds**) Browne 1961c: 201, 1984b: 287; Gray, B. 1974c; Kalshoven 1959c: 144; Ohno et al. 1989: 62; Schedl 1977b: 58, 1971c: 364, 1979a: 158. (**tx**) Anderson, W. H. & Anderson 1971: 16; Browne 1962: 201; Eggers 1923a: 201–202, 1927b: 408, 1940d: 144, 1941b: 225; Nobuchi 1983: 303; Schedl 1969a: 213.

***izuensis* (Murayama)** 1952a: 16 (*Xyleborus*). Syntypes ♀; Gansho, Izu peninsula, Shizuoka pref., Japan; Murayama Collection in USNM, Washington.
Distribution: Asia (Japan).
Hosts: *Cinnamomum camphora*.
References: (**ds**) Murayama 1952a: 16, 19, 1954b: 179; Nobuchi 1985c: 25. (**tx**) Murayama 1952a: 16, 1954b: 179.

***judenkoi* (Schedl)** 1959a: 507 (*Xyleborus*). Syntypes ♀; Ceylon: Millawitiya; Schedl Collection in NHMW, Wien.
Distribution: Asia (Sri Lanka), Indonesia (Borneo).
Notes: (3) Schedl 1979c: 130 (citation of holotype invalid).
References: (**ds**) Schedl 1959a: 507. (**tx**) Schedl 1958h: 498, 1959a: 507, 1979c: 130.

***kirishimanus* (Murayama)** 1955: 85 (*Xyleborus*). Syntypes ♂; Mt. Kirishima, Miyazaki pref., Kyushu, Japan; Murayama Collection in USNM, Washington.
Figures: Nobuchi 1981b: 153.
Distribution: Asia (Japan).
Hosts: *Ilex macropoda*, *Quercus acuta*, *Q. glauca*.
References: (**ds**) Nobuchi 1985c: 25. (**tx**) Murayama 1955: 85; Nobuchi 1981b: 152–153.

***libra* (Eggers)** 1923a: 202 (*Xyleborus*). Lectotype ♀; Ralum auf Neupommern (Neubritannien); USNM, Washington, designated by Anderson & Anderson 1971: 17.
Distribution: New Britain Island.
References: (**bv**) Gray, B. 1974c. (**hb**) Gray, B. 1974c. (**ds**) Beeson 1938: 293; Schedl 1975i: 346. (**tx**) Anderson, W. H. & Anderson 1971: 17; Eggers 1923a: 202; Schedl 1971f: 155.

bismarcensis Browne 1966: 255 (*Xyleborus*). Holotype ♀; Bismarck Islands, Mussau: Talumalaus; UZMC, Copenhagen. Synonymy: Schedl 1971f: 155.
References: (**tx**) Browne 1966: 255; Schedl 1971f: 155.

***mus* (Eggers)** 1930d: 203 (*Xyleborus*). Holotype ♀; Bengal (Chittagong Hill Tracts, Sitapahar); FRI, Dehra Dun.
Distribution: Asia (Bangladesh/ Guizhou in China).
Hosts: *Gmelina arborea*, *Michelia champaca*.
References: (**cn**) Mathur & Singh 1960b: 17. (**ds**) Beeson 1930: 250, 1961: 308; Kleine 1934a: 174; Mathur & Singh 1960b: 17. (**tx**) Beeson 1930: 250; Eggers 1930d: 203–204; Schedl 1979c: 162.

***myristicae* (Schedl)** 1939f: 49 (*Xyleborus*). Lectotype ♀; Sumatra W., Padang; Schedl Collection in NHMW, Wien.
Distribution: Asia (Malaya), Indonesia (Java, Sumatra).
Hosts: *Castanea argentea*, *Myristica fragrans*.
References: (**hb**) Browne 1961c: 135; Kalshoven 1959c: 149. (**ds**) Browne 1961c: 135; Kalshoven 1959c: 149. (**tx**) Kalshoven 1959b: 95, 1960a; Schedl 1939f: 49–50, 1953c: 290, 1979c: 162.

theae Eggers 1940d: 144 (*Xyleborus*). Holotype ♀; Java (Buitenzorg); Kalshoven Collection, 1 Eggers cotype, in NHMW, Wien. Synonymy: Wood 1989: 171.
References: (**hb**) Kalshoven 1959c: 144. (**ds**) Kalshoven 1959c: 144. (**tx**) Browne 1966: 255; Eggers 1940d: 144–145; Schedl 1942d: 7, 1951i: 51, 1954a: 144, 151, 1979c: 252; Wood, S. L. 1989: 171.

brevipilosus Eggers 1940d: 145 (*Xyleborus*). Holotype ♀; Java (Walikoekoen Pemalang; Kalshoven Collection. Synonymy: Kalshoven 1959b: 95, Wood 1989: 171.
References: (**tx**) Eggers 1940: 145; Kalshoven 1959b: 95; Wood, S. L. 1989: 171.

cylindripennis Schedl 1954a: 152 (*Xyleborus*). Lectotype ♀; Java, Batoerraden, G. Slamet; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 74. Synonymy: Wood 1989: 171.
References: (**bv**) Gray, B. 1974c. (**hb**) Gray, B. 1974c. (**tx**) Schedl 1954a: 141, 152, 1959a: 501, 1979c: 74; Wood, S. L. 1989: 171.

***nudibrevis* (Schedl)** 1942a: 195 (*Xyleborus*). Holotype ♀; Malaya, Selangor, Kepong; Schedl Collection in NHMW, Wien.
Distribution: Asia (Malaya).
Hosts: *Elateriospermum* sp.
References: (**hb**) Browne 1961c: 119. (**ds**) Browne 1986c: 662. (**tx**) Browne 1955: 356; Schedl 1942a: 195, 1952b: 370, 1979c: 172.

***nudipennis* (Schedl)** 1951i: 63 (*Xyleborus*). Holotype ♀; Java, Buitenzorg, 250 m; Schedl Collection in NHMW, Wien.
Distribution: Asia (Sri Lanka), Indonesia (Java).
Hosts: *Cinnamomum zeylanicum*, *Lansium domesticum*.
References: (**hb**) Kalshoven 1959c: 152. (**ds**) Kalshoven 1959c: 152; Schedl 1942d: 5, 1951i: 63, 1959a: 497. (**tx**) Schedl 1942d: 5, 1951i: 63, 1959a: 497, 1979c: 173.

***nugax* (Schedl)** 1939e: 353 (*Xyleborus*). Lectotype ♀; Malaya, Selangor: Sungei Buloh For. Res., Perak: Trolak For. Res.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 173.
Distribution: Asia (Malaya), Indonesia (Borneo, Java, Sumatra).
Hosts: *Actinomorpha fragrans*, *Arthrophyllum diversifolium*, *Artocarpus lanceaefolius*, *Castanopsis sumatrana*, *Dipterocarpus baudii*, *Dryobalanops oblongifolia*, *Garcinia* sp., *Hevea* sp., *Memecylon* sp., *Myristica fragrans*, *Scaphium* sp., *Shorea curtisii*, *S. leprosula*, *S. macroptera*, *Strombosia javanica*, *Swietenia macrophylla*, *Theobroma cacao*, *Whitfordiodendron pubescens*, *Xanthophyllum* sp.
References: (**cn**) Yunus & Hua 1980: 230. (**hb**) Beaver & Browne 1978: 610; Browne 1961c: 134–135; Kalshoven 1959c: 149. (**ds**) Beaver & Browne 1978: 610; Beeson 1961: 308; Browne 1961c: 134, 1981a: 126; Kalshoven 1959c: 149. (**tx**) Browne 1970: 573; Kalshoven 1959b: 97; Schedl 1939e: 353–354, 1942a: 171, 1979c: 173.

pertuberculatus Eggers 1940d: 144 (*Xyleborus*). Holotype ♀; West Java (Mount Tjampea); Kalshoven Collection [1 Eggers cotype, in NHMW, Wien]. Synonymy: Kalshoven 1959b: 97.
References: (**hb**) Kalshoven 1958a: 186. (**ds**) Kalshoven 1958a: 186, 1959c: 149. (**tx**) Eggers 1940d: 144; Kalshoven 1959b: 97; Schedl 1939f: 49, 1942a: 171, 1979c: 191.

fragosus Schedl 1942d: 41 (*Xyleborus*). Lectotype ♀; Java, Buitenzorg, 250 m; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 99. Synonymy: Wood 1989: 171.
References: (**hb**) Browne 1961c: 151; Kalshoven 1959c: 150. (**ds**) Browne 1961c: 151; Kalshoven 1959c: 150. (**tx**) Schedl 1942d: 41, 1953c: 290, 1979c: 100; Wood, S. L. 1989: 171.

***obtusicollis* (Schedl)** 1938g: 427 (*Xyleborus*). Lectotype ♀; Naganaga, Zamboanga Province, Mindanao, Philippines; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 175.
Distribution: Philippine Islands (Mindanao).
Hosts: *Vatica* sp.
Notes: (3) Schedl 1942a: 192 (described male).
References: (**ds**) Schedl 1938g: 427, 1977b: 62. (**tx**) Nobuchi 1983: 303; Schedl 1938g: 427, 1942a: 191–192, 1950g: 894, 1961c: 107, 1979c: 175.

***parva* (Lea)** 1893: 321 (*Xylopertha*). Holotype ♀; Richmond River [New South Wales, Australia]; SAM, Adelaide.
Distribution: Australia (New South Wales), Philippine Islands, Solomon Islands.
Hosts: *Eucalyptus torelliana*.
References: (**cn**) Froggatt 1926a, 1927. (**hb**) Froggatt 1926a, 1927. (**ds**) Brimblecombe 1953: 30; Schedl 1961f: 94, 1966b: 63, 1972a: 144, 1980b: 184. (**tx**) Eggers 1933b: 3, 1941a: 108; Lea 1893: 321, 1904: 106, 1910: 138; Schedl 1936g: 529, 1961f: 94, 1964m: 314.

***pedella* (Schedl)** 1969a: 213 (*Xyleborus*). Holotype ♀; Philippine Islands, Diapitan to Tokyo (Japan), imported; PPST, Tokyo.
Distribution: Philippine Islands.
Hosts: Lauan log.
References: (**ds**) Nobuchi 1978a: 44. (**tx**) Nobuchi 1983: 303; Schedl 1969a: 213–214, 1979c: 186.

***perparva* (Sampson)** 1922b: 151 (*Xyleborus*). Syntypes ♀; Bengal: Kurseong Div.; BMNH, London.
Distribution: Asia (Bangladesh/ Burma/ Guizhou in China/ Andaman Islands, Assam, Bengal in India/ Malaya), Indonesia (Borneo).
Hosts: *Canarium euphyllum*, *Chrysophyllum roxburghii*, *Dipterocarpus baudii*, *Elaeocarpus* sp., *Elateriospermum taposi*, *Hopea ferrea*, *Pentacme suavis*, *Shorea curtisii*, *S. macroptera*, *S. maxwelliana*, *S. ovata*, *S. robusta*, *Swintonia floribunda*, *Vatica* sp.
References: (**cn**) Kleine 1932a: 307; Mathur & Singh 1961a: 40; Yunus & Hua 1980: 230. (**ec**) Beeson 1923. (**hb**) Beaver & Browne 1978: 610; Beeson 1923; Browne 1938a, 1961c: 118–119; Kleine 1932a: 307. (**ds**) Beaver & Browne 1978: 610; Beeson 1923, 1930: 252, 1961: 308; Browne 1938a, 1962c: 202, 1983: 555; Kleine 1932a: 307, 1934a: 175; Mathur & Singh 1961a: 40; Ohno, Yoneyama, & Nakazawa 1987: 94; Ohno et al. 1988a: 94; Schedl 1936j: 20. (**tx**) Beeson 1930: 252; Eggers 1923a: 212; Sampson 1922b: 151; Schedl 1936j: 20, 1939e: 332, 1942a: 171, 195.

***pubipennis* (Schedl)** 1974c: 263 (*Xyleborus*). Holotype ♀; Nord-Vietnam, L. Thsi Nuguyen; MHNB, Bucharest.
Distribution: Asia (Vietnam).
References: (**ds**) Schedl 1974c: 262. (**tx**) Schedl 1974c: 262–263, 1979c: 203.

***pulla* (Schedl)** 1952b: 370 (*Xyleborus*). Holotype ♀; Philippines, Calapan; Eggers Collection, in NHMW, Wien.
Distribution: Philippine Islands.
Notes: (1) Schedl 1952b: 371 (type was in Eggers Collection under *Adryocoetes nitidus*, nomen nudum, synonymy).
References: (**ds**) Schedl 1966b: 66. (**tx**) Nobuchi 1983: 303; Schedl 1952b: 370–371, 1959a: 507, 1979c: 203.

***punctipennis* (Schedl)** 1953c: 302 (*Xyleborus*). Lectotype ♀; Malaya, Kelantan, Tenanger F. R.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 205.
Distribution: Asia (Malaya).
Hosts: Euphorbiaceae sp.
References: (**hb**) Browne 1961c: 161. (**ds**) Browne 1961c: 161. (**tx**) Schedl 1953c: 302, 1964g: 249, 1979c: 205.

***quadricostata* (Schedl)** 1942d: 30 (*Xyleborus*). Lectotype ♀; Java, Mt. Gede; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 208.

Distribution: Asia (Bengal in India/ Malaya), Indonesia (Borneo, Java).

Hosts: *Elaeocarpus* sp., *Shorea parvifolia*.

Notes: (3) Beeson 1941 (cited *tetracanthus*, nomen nudum, a synonym).

References: (**hb**) Browne 1961c: 108. (**ds**) Browne 1962c: 201; Schedl 1971c: 365. (**tx**) Beeson 1941; Schedl 1942d: 30, 1953c: 290, 1958b: 104, 1979c: 208.

***recidens* (Sampson)** 1923b: 287 (*Xyleborus*). Holotype ♀; Khariabandar, Lower Tondu, India; BMNH, London.

Distribution: Asia (Bangladesh/ Burma/ Guizhou in China/ Andaman Islands, Bengal in India/ Malaya/ Thailand), Indonesia (Borneo, Enggano), New Guinea, Philippine Islands.

Hosts: *Albizzia stipulata*, *Hymenodictyon excelsum*, (?) *Lindera latifolia*, *Shorea robusta*, *Styrax benzoin*, *Terminalia bialata*.

References: (**cn**) Mathur & Singh 1961a: 46, 1961b: 28; Roonwal 1954: 45; Wylie & Shanahan 1975. (**ec**) Beeson 1923. (**hb**) Beeson 1923; Browne 1961c: 150; Wylie & Shanahan 1975. (**ds**) Beeson 1923, 1930: 252; Browne 1961c: 150, 1966: 255; Kleine 1934a: 175; Mathur & Singh 1961a: 46, 1961b: 28; Roonwal 1954: 45; Schedl 1966b: 67. (**tx**) Beeson 1929: 247–248, 1930: 252; Browne 1955: 354; Eggers 1925: 154, 1927b: 391; Nobuchi 1983: 303; Sampson 1923b: 287.

minusculus Eggers 1923a: 212 (*Xyleborus*). Lectotype ♀; Engano (Bua Bua); USNM, Washington, designated by Anderson & Anderson 1971: 21. Synonymy: Eggers 1925: 154, 1927b: 391.

References: (**tx**) Anderson, W. H. & Anderson 1971: 20; Eggers 1923a: 212, 1925: 154, 1927b: 391; Schedl 1955b: 301.

minutissimus Eggers 1930d: 204 (*Xyleborus*). Holotype ♀; Chitagong Hill Tracts (Sitapahar Reserve); FRI, Dehra Dun. Synonymy: Wood 1989: 171.

References: (**cn**) Mathur & Singh 1960b: 61; Roonwal 1954: 53. (**ds**) Beeson 1930: 249; Kleine 1934a: 174; Mathur & Singh 1960b: 61; Roonwal 1954: 53. (**tx**) Beeson 1930: 249; Eggers 1930d: 204; Schedl 1934d: 90; Wood, S. L. 1989: 171.

crassitarsus Schedl 1936j: 28 (*Xyleborus*). Lectotype ♀; S.E. Borneo, N. Borneo: Samawang, near Sandakan, Philippine Is., Mt. Makiling, Laguna, Luzon; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 67. Synonymy: Browne 1955: 364.

References: (**cn**) Anonymous 1975c; Vuillaume et al. 1981. (**ec**) Vuillaume et al. 1981. (**ds**) Anonymous 1975c; Nunberg 1961b: 610; Schedl 1936j: 28, 1938g: 426. (**tx**) Browne 1955: 364; Schedl 1936j: 28–29, 1938g: 426, 1942a: 170, 1979c: 67.

***rosseli* (Schedl)** 1975m: 34 (*Xyleborus*). Holotype ♀; Abaleti, Rossel Isl., M. Bay Dist.; AMNH, New York, automatic.

Distribution: New Guinea.

References: (**tx**) Schedl 1975m: 34.

chimbui Schedl 1973f: 75 (*Xyleborus*). Holotype ♀; Abaleti, Rossel Isl., M. Bay Dist.; AMNH, New York, preoccupied by Schedl 1973f: 74.

References: (**tx**) Schedl 1973f: 75, 1975m: 34.

***tenella* (Schedl)** 1959a: 501 (*Xyleborus*). Syntypes ♀; Ceylon: Millawitiya Estate; Schedl Collection in NHMW, Wien.

Distribution: Asia (Sri Lanka).

Notes: (1) Schedl 1979c: 251 (citation of holotype invalid).

References: (**ds**) Schedl 1959a: 501. (**tx**) Schedl 1959a: 501, 1979c: 251.

***undulata* (Sampson)** 1919: 111 (*Xyleborus*). Holotype ♀; Bengal, India; BMNH, London.

Distribution: Asia (Bengal in India/ Malaya), Indonesia (Java).

Hosts: *Shorea leprosula*, *S. robusta*.

References: (**cn**) Mathur & Singh 1961a: 46. (**ec**) Beeson 1923. (**hb**) Beeson 1923. (**ds**) Beeson 1923, 1930: 262, 1961: 310; Kleine 1934a: 176; Mathur & Singh 1961a: 46; Sampson 1919: 112. (**tx**) Beeson 1930: 262; Eggers 1927b: 404, 1940d: 144; Sampson 1919: 111–112; Schedl 1936j: 29.

leprosulus Schedl 1936j: 27 (*Xyleborus*). Lectotype ♀; Malay Peninsula, Selangor: Bukit Lagong For. Res., Kepong; Schedl Collection in NHMW, Wien. Synonymy: Wood 1989: 171.

References: (**cn**) Mathur & Singh 1961a: 40. (**hb**) Browne 1961c: 151. (**ds**) Browne 1961c: 151; Mathur & Singh 1961a: 40; Schedl 1936j: 27, 1971c: 368. (**tx**) Schedl 1936j: 27–28, 1939e: 353, 1979c: 138; Wood, S. L. 1989: 171.

***vafra* (Schedl)** 1957e: 880 (*Xyleborus*). Holotype ♀; Tanganyika, Lushoto; BMNH, London.

Distribution: Africa (Tanzania).

Hosts: *Syzygium* sp.

Notes: (3) This is the only African species in the genus; for this reason synonymy or an error in identification is suspected.

References: (**ds**) Schedl 1962j: 328. (**tx**) Schedl 1957e: 880, 1962j: 328, 1979c: 263.

Genus *Taphrodasus* Wood

TAPHRODASUS WOOD 1980c: 95. Type-species: *Xyleborus percorthylus* Schedl, original designation.

References: (**hb**) Wood, S. L. 1986a: 84. (**ds**) Wood, S. L. 1986a: 84. (**tx**) Wood, S. L. 1980c: 95, 1986: 84.

***cuspidus* (Schedl)** 1975f: 363 (*Xyleborus*). Holotype ♀; Upper Manki logging area, Bulolo, Morobe Dist. [New Guinea]; Schedl Collection in NHMW, Wien.

Distribution: New Guinea.

References: (**tx**) Schedl 1975f: 363, 1979c: 73.

***divisus* (Browne)** 1972b: 25 (*Webbia*). Holotype ♀; Malaya: Perak, Ipon; BMNH, London.
Distribution: Asia (Malaya).
Hosts: *Hopea* sp.
References: (**ds**) Browne 1972b: 25, 1983a: 555.

***penicillatus* (Hagedorn)** 1910b: 7 (*Xyleborus*). Syntypes 2 ♀; Sumatra et Java; Hamburg Museum, lost.
Distribution: Asia (Malaya), Indonesia (Borneo, Java, Sumatra).
Notes: (3) Browne 1963c: 57 (cited in *Prowebbia*), 1972b: 25 (cited in *Webbia*).
References: (**ds**) Browne 1980c: 484, 1983a: 555; Hagedorn 1910d: 108; Kleine 1913b: 163, 1914b: 268. (**tx**) Anderson, W. H. & Anderson 1971: 24; Browne 1963c: 57, 1972b: 25; Hagedorn 1910a: 155, 1910b: 7; Ohno, Yoneyama, & Nakazawa 1982b: 9; Schedl 1931c: 344–345, 1939j: 577, 1964k: 214.

***percorthylus* (Schedl)** 1935f: 270 (*Xyleborus*). Lectotype ♀; F.M.S.: Bt. Enggany, Meranti, Selangor, Bangi Mercanti; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 188.
Figures: Nunberg 1978: 115.
Distribution: Asia (Malaya), Indonesia (Borneo).
Hosts: *Shorea exima*, *S. leprosula*.
References: (**cn**) Mathur & Singh 1961a: 38. (**hb**) Browne 1936a, 1961c: 164. (**ds**) Beeson 1961: 308; Browne 1936a, 1961c: 164, 1962c: 202; Mathur & Singh 1961a: 38. (**tx**) Nunberg 1978: 114–115; Schedl 1935f: 270, 1936j: 19, 1979c: 188.

Genus *Cryptoxyleborus* Schedl

CRYPTOXYLEBORUS SCHEDL 1937e: 550. Type-species: *Cryptoxyleborus naevus* Schedl, subsequent designation by Schedl 1962r: 103.
References: (**tx**) Browne 1960: 201–220, 1961c: 183; Schedl 1937e: 550, 1962r: 103.

***barbieri* Schedl** 1953b: 128. Lectotype ♀; Saigon; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 34.
Distribution: Asia (Vietnam).
References: (**tx**) Schedl 1953b: 128, 1979c: 34.

***confusus* Browne** 1950b: 644. Holotype ♀; Malaya: Selangor, Kepong; BMNH, London.
Distribution: Asia (Malaya), Indonesia (Borneo).
Hosts: *Shorea leprosula*.
Notes: (3) Browne 1962c: 208 (described male).
References: (**hb**) Beaver & Browne 1978: 586; Browne 1961c: 185. (**ds**) Beaver & Browne 1978: 586; Browne 1961a: 308, 1961c: 185. (**tx**) Browne 1950b: 644, 1962c: 208; Schedl 1979c: 62.

***dryobalanopsis* Schedl** 1942a: 184. Lectotype ♀; Malaya, Selangor, Kanching F. R.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 84.
Distribution: Asia (Malaya).
Hosts: *Balanocarpus heimii*, *Dryobalanops aromatica*.
References: (**ds**) Browne 1961c: 184, 1981b: 598, 1985b: 291. (**tx**) Schedl 1942a: 184, 1979c: 84.

***eggersi* Schedl** 1936h: 60. Lectotype ♀; Mindanao, Kolambugan; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 87.
Distribution: Philippine Islands (Mindanao).
References: (**tx**) Anderson, W. H. & Anderson 1971: 12; Schedl 1936h: 60, 1942a: 184, 1960i: 109, 1979c: 87.

eggersianus Schedl 1960i: 110 (*Xyleborus*). Lectotype ♀; Mindanao, Kolambugan; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 87, automatic.
Notes: (1) This is an unneeded replacement name; original name restored under the Code of Nomenclature.
References: (**ds**) Schedl 1966b: 51. (**tx**) Nobuchi 1983: 302; Schedl 1960i: 109–110, 1979c: 87.

***gracilior* Browne** 1984d: 101. Holotype ♀; New Guinea: Long Island L. A.; BMNH, London.
Distribution: New Guinea.
Hosts: *Araucaria cunninghamii*.
References: (**tx**) Browne 1984d: 101.

***major* Browne** 1986c: 665. Holotype ♀; Borneo: Tanjong Mani (Sarawak) to Nagoya (Japan), imported; BMNH, London.
Distribution: Indonesia (Sarawak in Borneo).
Hosts: *Dipterocarpus* sp. log.
References: (**tx**) Browne 1986c: 665.

***naevus* Schedl** 1937e: 551. Lectotype ♀; Malay Peninsula, Jensang F. R.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 163.
Distribution: Asia (Malaya), Indonesia (Borneo).
Hosts: *Shorea* spp.
References: (**ds**) Browne 1961c: 184; Schedl 1964g: 242. (**tx**) Browne 1972b: 24; Schedl 1937e: 551, 1979c: 163.

***nanus* Browne** 1949b: 903. Holotype ♀; Malaya: Kelantan, Pulai Chondong; BMNH, London.
Distribution: Asia (Malaya).
Hosts: *Hopea ferrea*, *Shorea parviflora*, *S.* sp.
References: (**tx**) Browne 1949b: 903, 1955: 353.

caelator Browne 1955: 353 (*Xyleborus*). Holotype ♀; Malaya: Kelantan, Pulai Chondong; BMNH, London, automatic.
Notes: (1) This is an unneeded replacement name.
References: (**hb**) Beaver & Browne 1961c: 123–124. (**ds**) Beaver & Browne 1978: 605; Browne 1961c: 124, 1962c: 202. (**tx**) Browne 1955: 353.

***opacicaudulus* Schedl** 1942a: 185. Lectotype ♀; Selangor, Kepong; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 178.
Distribution: Asia (Malaya).
Hosts: *Shorea gysbertsiana*, *S. leprosula*, *S. macroptera*.
References: (**hb**) Beaver & Browne 1978: 586; Browne 1961c: 184. (**ds**) Beaver & Browne 1978:

586; Browne 1961c: 184. (**tx**) Schedl 1942a: 185, 1979c: 178.

***oxyurus* Schedl** 1942a: 184. Lectotype ♀; Malaya, Pahang; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 182.
Distribution: Asia (Malaya).
References: (**ds**) Browne 1961c: 184. (**tx**) Browne 1950b: 644; Schedl 1937e: 551, 1942a: 184, 1950g: 894, 1979c: 182.

***quadriporus* Beaver** 1990a: 281. Holotype ♀; Chiang Mai, Thailand; BMNH, London.
Figures: Beaver 1990a: 282 (outline of female).
Distribution: Asia (Thailand).
References: (**tx**) Beaver 1990a: 281.

***shoreae* Browne** 1981b: 602. Holotype ♀; Philippines to Tagonoura (Japan), imported; BMNH, London.
Distribution: Philippine Islands.
Hosts: *Shorea* sp.
References: (**tx**) Browne 1981b: 602.

***stenographus* (Schedl)** 1971c: 383 (*Xyleborus*). Holotype ♀; Sumatra, Pladjoe; Schedl Collection in NHMW, Wien.
Distribution: Indonesia (Sumatra).
References: (**tx**) Schedl 1971c: 383–384, 1979c: 237.

***subnaevus* Schedl** 1937e: 552. Lectotype ♀; Borneo, Serawei, und Leb. Hara; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 242.
Distribution: Asia (Burma/ Kerala in India/ Thailand), Indonesia (Borneo, Sumatra), Philippine Islands.
Hosts: *Pentacme mavis*, *Shorea curtisii*, *S. platycarpa*, *S.* spp.
References: (**cn**) Mathur & Singh 1961a: 38. (**ds**) Beaver 1990a: 279; Beeson 1961: 286; Browne 1961c: 184, 1984c: 448; Mathur & Singh 1961a: 38; Nobuchi 1978a: 44; Ohno, Yoneyama, & Nakazawa 1987a: 89; Schedl 1961c: 70, 1966g: 33. (**tx**) Nobuchi 1983: 304; Schedl 1937e: 552, 1939e: 333, 1950f: 36, 1961c: 70, 1966g: 40, 1979c: 242; Wylie & Yule 1977.

***turbineus* (Sampson)** 1923b: 288 (*Xyleborus*). Holotype ♀; Bengal: Raja Bhat Khawa; BMNH, London.
Distribution: Asia (Burma/ Bengal, Bihar in India/ Thailand/ Vietnam), Philippine Islands.
Hosts: *Pentacme suavis*, *Shorea robusta*.
References: (**cn**) Mathur & Singh 1961a: 45. (**ec**) Beeson 1923. (**hb**) Beeson 1923. (**ds**) Beaver & Browne 1975: 289; Beeson 1923, 1930: 262, 1961: 286; Kleine 1934a: 175; Mathur & Singh 1961a: 45; Schedl 1962b: 187, 1966b: 75, 1975e: 452. (**tx**) Beeson 1930: 262; Eggers 1927b: 407; Nobuchi 1983: 304; Sampson 1923b: 288; Schedl 1936h: 60, 1937b: 399, 1937e: 551, 1942a: 184, 1953b: 124.

***vestigator* (Schedl)** 1973e: 93 (*Xyleborus*). Holotype ♀; Upper Manki logging area, Bulolo, Morobe Dist. [New Guinea]; CSIRO, Canberra.
Distribution: New Guinea.
Notes: (1) The holotype of *Platypus goilalae* Schedl 1975f: 387 is apparently this species (DEB).
References: (**tx**) Schedl 1973e: 93, 1979c: 266.

Genus *Webbia* Hopkins

WEBBIA HOPKINS 1915c: 222. Type-species: *Webbia dipterocarpi* Hopkins, original designation.
Xelyborus Schedl 1939e: 349. Type-species: Nomen nudum. Synonymy: Browne 1963c: 57.
References: (**tx**) Browne 1961c: 189, 1963c: 57; Schedl 1939e: 349.
Pseudowebbia Browne 1961a: 308. Type-species: *Xyleborus trepanicauda* Eggers, original designation. Synonymy: Wood 1983a: 650.
References: (**tx**) Browne 1961a: 308, 1963c: 57; Schedl 1964k: 213; Wood, S. L. 1983a: 650.
Prowebbia Browne 1962c: 208. Type-species: *Prowebbia subuculae* Browne, original designation. Synonymy: Browne 1972b: 25.
References: (**tx**) Browne 1962c: 208, 1963c: 53–58, 1972b: 25; Schedl 1963j: 480, 1964h: 424, 1964k: 214.
Keys: Browne 1962c: 210.
References: (**ay**) Nobuchi 1969a: 64. (**hb**) Browne 1961c: 185; Gardner 1934: 1–17; Wood, S. L. 1986a: 84. (**ds**) Schedl 1966b: 79; Wood, S. L. 1986a: 84. (**tx**) Browne 1958a: 487–497, 1960: 208, 1962c: 210, 1963c: 57, 1965a: 204, 1972b: 25; Hopkins 1915c: 222; Murayama 1960: 49; Schedl 1936h: 62, 1939e: 349; Wood, S. L. 1986a: 84.

***acutus* (Schedl)** 1975f: 361 (*Xyleborus*). Holotype ♀; Upper Manki logging area, Bulolo, Morobe Dist. [New Guinea]; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1975f: 361, 1979c: 11.

***armifer* (Schedl)** 1942c: 185 (*Xyleborus*). Holotype ♀; Neu-Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1942c: 185, 1955b: 306, 1979c: 26.
spinachius Schedl 1955b: 306 (*Xyleborus*). Holotype ♀; Deutsch-Neu-Guinea; Schedl Collection in NHMW, Wien.
Notes: (1) A probable synonym, needs confirmation.
References: (**tx**) Schedl 1955b: 281, 306, 1979c: 234.

***bakoensis* Browne** 1961a: 310. Holotype ♀; Sarawak: Bako National Park; BMNH, London.
Distribution: Indonesia (Sarawak in Borneo).
Hosts: *Shorea* sp., *Dipterocarpus borneensis*, *Vatica* sp.

References: (**tx**) Browne 1961a: 310.

***bicornis* (Schedl)** 1939e: 349 (*Xelyborus*). Lectotype ♀; Malaya: Selangor, Kepong; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 39.
Distribution: Asia (Malaya).
Hosts: *Shorea bracteolata*.
References: (**hb**) Browne 1961c: 189. (**tx**) Browne 1963c: 57; Eggers 1927b; Schedl 1939e: 349–350, 1942a: 193, 1979c: 39.

***biformis* Browne** 1958a: 496. Holotype ♀; Malaya: Selangor, Kepong; BMNH, London.
Distribution: Asia (Malaya/ Sri Lanka/ Thailand), Indonesia (Borneo), Philippine Islands.
Hosts: *Dipterocarpus obtusifolius*, *Shorea leprosula*.
Notes: (3) Browne 1958a: 497 (named an aberration as var. *minor*).
References: (**hb**) Beaver & Browne 1975: 296; Browne 1961c: 188. (**ds**) Beaver & Browne 1975: 296; Browne 1958a: 496, 1961c: 188.

***bituberculatus* Browne** 1977c: 369. Holotype ♀; Malaysia: Penang, Telok Bahang; BMNH, London.
Figures: Browne 1977c: 370.
Distribution: Asia (Malaya).
Hosts: *Hopea ferrea*, *Shorea curtisii*, *S. maxwelliana*.
References: (**hb**) Beaver & Browne 1978: 600. (**ds**) Beaver & Browne 1978: 600. (**tx**) Browne 1977c: 369–370.

***ceylonae* Schedl** 1959a: 493. Syntypes ♀; Ceylon: Millawitiya Estate; Schedl Collection in NHMW, Wien.
Distribution: Asia (Sri Lanka).
Hosts: *Dipterocarpus zeylanicus*.
Notes: (1) Schedl 1979c: 55 (citation of holotype invalid).
References: (**ds**) Schedl 1959a: 493. (**tx**) Schedl 1959a: 493, 1979c: 55.

***circumcisus* Schedl** 1975f: 373. Holotype ♀; Mt. Riu, Sudest Isl., New Guinea, 250–350 m; AMNH, New York.
Distribution: New Guinea.
References: (**ds**) Schedl 1965g: 24, 1975f: 373.

***cornutus* Schedl** 1942a: 183. Lectotype ♀; Malaya, Selangor, Kepong; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 65.
Distribution: Asia (Malaya/ Thailand), Indonesia (Borneo).
Hosts: *Dipterocarpus obtusifolius*, *Hopea beccariana*, *H. ferrea*, *H. odorata*, *Shorea macroptera*, *S. leprosula*.
Notes: (3) Browne 1955: 349 (described male).
References: (**cn**) Yunus & Hua 1980: 229. (**hb**) Beaver & Browne 1975: 297, 1978: 601; Browne 1961c: 188. (**ds**) Beaver & Browne 1975: 297, 1978: 601; Browne 1961c: 188, 1962c: 202, 1980c: 483; Yunus & Hua 1980: 229. (**tx**) Browne 1955: 349; Schedl 1942a: 183, 1979c: 65.

***costulatulus* Schedl** 1953c: 299. Lectotype ♀; Malaya, Selangor Kepong; Schedl Collection in NHMW, Wien.
Distribution: Asia (Malaya), Indonesia (Borneo).
Hosts: *Palaquium stellatum*.
Notes: (3) Browne 1958a: 492 (described male).
References: (**hb**) Browne 1961c: 185. (**ds**) Browne 1961c: 185–186, 1962c: 202. (**tx**) Browne 1958a: 492, 1962c: 202; Schedl 1953c: 299.

***cylindricus* Schedl** 1942a: 182. Lectotype ♀; Malaya, Selangor, Kepong; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 74.
Distribution: Asia (Malaya), Indonesia (Borneo).
Hosts: *Palaquium* sp., *Shorea leprosula*, *S. macroptera*.
References: (**hb**) Browne 1961c: 187. (**ds**) Browne 1961a: 311, 1961c: 187. (**tx**) Schedl 1942a: 182, 1952k: 162, 1979c: 74.

***dasyurus* Browne** 1981a: 133. Holotype ♀; Baculin (Philippine) to Tokyo (Japan), imported; BMNH, London.
Distribution: Philippine Islands.
Hosts: *Shorea* sp.
References: (**tx**) Browne 1981a: 133; Nobuchi 1983: 304.

***dentatus* Eggers** 1927c: 108. Holotype ♀; Philippinen: Negros, Cuernos Mts.; Eggers Collection, in NHMW, Wien.
Figures: Nobuchi 1978a:pl. 1.
Distribution: Philippine Islands (Negros).
References: (**ds**) Schedl 1966b: 79, 1966g: 30. (**tx**) Eggers 1927c: 108; Nobuchi 1978a:pl. 1, 1983: 304; Schedl 1936h: 63, 1979c: 77.

***denticulatus* Browne** 1983a: 561. Holotype ♀; Terminaban (West Irian) [New Guinea] to Nagoya (Japan), imported; BMNH, London.
Distribution: New Guinea.
References: (**ds**) Browne 1985b: 290. (**tx**) Browne 1983a: 561.

***dipterocarpi* Hopkins** 1915c: 223. Holotype ♀; near Pagbilao, Philippine Islands; USNM, Washington.
Distribution: Asia (Malaya), Indonesia (Borneo), Philippine Islands (Quezon).
Hosts: *Dipterocarpus grandiflorus*, *D. baudi*, *Hopea* spp., *Shorea* spp.
References: (**ds**) Kleine 1934a: 167; Sampson 1919: 114; Schedl 1966b: 79. (**tx**) Hopkins 1915c: 223, pl. 9, fig. 5, pl. 10, fig. 5; Nobuchi 1983: 304; Sampson 1919: 114; Schedl 1936h: 63.
octodecimspinatus Sampson 1921: 34. Holotype ♀; Penang; BMNH, London. Synonymy: Wood 1983a: 650.
Notes: (1) This name was originally given as 18–*spinatus*, a name no longer acceptable

under the Code. (3) Browne 1958b: 493 (described male).
References: (**cn**) Browne 1949e. (**ec**) Browne 1958b: 493. (**hb**) Beaver & Browne 1978: 601; Browne 1935a, 1941, 1958b: 493, 1961c: 186–187. (**ds**) Beaver & Browne 1978: 601; Beeson 1961: 301; Browne 1935a, 1980b: 380; Ohno, Yoneyama, & Nakazawa 1987a: 89; Sampson 1921: 34; Schedl 1936d: 2. (**tx**) Browne 1958b: 493; Nobuchi 1983: 304; Sampson 1921: 34; Schedl 1936d: 2, 1936h: 62–63, 1942a: 170; Wood, S. L. 1983a: 650.

***diversicauda* Browne** 1972b: 26. Holotype ♀; Malaya: Sungei Buloh; BMNH, London.
Distribution: Asia (Malaya).
References: (**tx**) Browne 1972b: 26.

***duodecimspinatus* Schedl** 1942a: 182. Lectotype ♀; Malaya, Selangor, Ulu Gombak; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 35.
Distribution: Asia (Malaya).
Hosts: *Hopea beccariana*, *H. ferrea*, *Shorea curtisii*, *S. maxwelliana*.
Notes: (1) This name was originally spelled 12–*spinatus*, a spelling no longer acceptable under the Code.
References: (**hb**) Beaver & Browne 1978: 601. (**ds**) Beaver & Browne 1978: 601; Browne 1961c: 187. (**tx**) Schedl 1942a: 182, 1979c: 35.

***gracilis* Browne** 1972b: 27. Holotype ♀; Malaya: Sungei Buloh; BMNH, London.
Figures: Browne 1972b: 22.
Distribution: Asia (Malaya).
References: (**tx**) Browne 1972b: 22, 27.

***hatanakai* Browne** 1986a: 99. Holotype ♀; Philippine Islands: Port Barton (Palawan) to Nagoya (Japan), imported; BMNH, London.
Distribution: Philippine Islands (Palawan).
Hosts: *Dipterocarpus* sp.
References: (**ds**) Ohno, Yoneyama, & Nakazawa 1987a: 89. (**tx**) Browne 1986a: 99.

***kuchingensis* (Browne)** 1955: 348 (*Xyleborus*). Holotype ♀; Sarawak: Kuching; BMNH, London.
Distribution: Indonesia (Sarawak in Borneo).
References: (**tx**) Browne 1955: 348, 1963c: 57.

***micrographus* (Schedl)** 1942a: 185 (*Cryptographus*). Lectotype ♀; Malaya, Selangor, Kepong; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 152.
Distribution: Asia (Malaya).
Hosts: *Shorea macroptera*.
References: (**hb**) Browne 1961c: 184. (**tx**) Browne 1949b: 903; Schedl 1942a: 185, 1979c: 152.
decorus Schedl 1960i: 110 (*Xyleborus*). Lectotype ♀; Malaya, Selangor, Kepong; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 152, automatic.
Notes: (1) This is an unneeded replacement name for *micrographus*.
References: (**tx**) Schedl 1960i: 110, 1979c: 152.

***mucronatus* Eggers** 1927c: 107. Holotype ♀; Philippinen: Mindanao, Provinz Lanao, Kolambugan; USNM, Washington.
Distribution: Philippine Islands (Mindanao).
References: (**ds**) Schedl 1966b: 79. (**tx**) Anderson, W. H. & Anderson 1971: 21; Eggers 1927c: 107; Schedl 1936h: 62–63.

***multidentatus* Browne** 1984c: 453. Holotype ♀; Kimanis (Sabah) to Nagoya (Japan), imported; BMNH, London.
Distribution: Asia (apparently Malaya).
Hosts: *Shorea* sp.
References: (**tx**) Browne 1984c: 453.

***obtusipennis* Schedl** 1966g: 38. Holotype ♀; Diapitan, P.I. to Tokyo (Japan), imported; PPST, Tokyo.
Figures: Nobuchi 1978a:pl. 1.
Distribution: Philippine Islands.
Hosts: Lauan log.
References: (**ds**) Nobuchi 1978a: 3. (**tx**) Nobuchi 1978a:pl. 1, 1983: 304; Schedl 1966g: 38.

***obtusispinosus* Schedl** 1939e: 348. Lectotype ♀; Malaya, Selangor: Sungei Buloh For. Res.; Schedl Collection in NHMW, Wien, designated by Schedl 1979c: 196.
Distribution: Asia (India, Malaya), Indonesia (Borneo).
Hosts: *Shorea parvifolia*.
Notes: (1) Originally named as a variety of *platypoides*, Browne 1958a: 494 elevated it to species rank. (3) Browne 1958a: 494 (described male).
References: (**cn**) Mathur & Singh 1961a: 41. (**hb**) Browne 1961c: 188. (**ds**) Beeson 1961: 301; Browne 1961a: 311, 1961c: 188. (**tx**) Browne 1958a: 494; Schedl 1939e: 348, 1979c: 196.

***orbicularis* Schedl** 1970b: 361. Holotype ♀; Sarawak, Sibuti to Tokyo (Japan), imported; PPST, Tokyo.
Distribution: Indonesia (Sarawak in Borneo).
Hosts: Serava.
References: (**ds**) Browne 1984c: 448; Nobuchi 1978a: 5. (**tx**) Schedl 1970b: 361–362, 1979c: 180.

***pabo* Sampson** 1922b: 150. Holotype ♀; Kheri Lakhimpur, U.P., India; BMNH, London.
Figures: Nobuchi 1978a:pl. 1.
Distribution: Asia (Xizang [Tibet], Yunnan in China/ Madhya Pradesh, Uttar Pradesh in India/ Thailand), Indonesia (Sarawak in Borneo).
Hosts: *Anisoptera curtisii*, *Shorea robusta*.
References: (**cn**) Mathur & Singh 1961a: 45; Wylie & Shanahan 1975. (**ec**) Beeson 1922c: 500, 1923. (**hb**) Beeson 1922c: 500, 1923; Wylie & Shanahan 1975. (**ds**) Beaver & Browne 1975: 297; Beeson 1922c: 500, 1923, 1961: 301; Browne 1972b: 20, 1980c: 483; Kleine 1934a: 167;

Mathur & Singh 1961a: 45. (**tx**) Eggers 1927c: 105; Nobuchi 1978a:pl. 1; Sampson 1922b: 150; Schedl 1936h: 62.

***philippinensis* Schedl** 1971c: 374. Holotype ♀; Philippines: Luzon, Balbalan; Schedl Collection in NHMW, Wien.
Distribution: Philippine Islands (Luzon).
References: (**tx**) Nobuchi 1983: 304; Schedl 1971c: 374–375, 1979c: 192.

***picicauda* Schedl** 1979j: 129. Holotype ♀; Papua New Guinea; Schedl Collection in NHMW, Wien [not seen].
Distribution: New Guinea.
References: (**tx**) Schedl 1979j: 129.

***piscecauda* Browne** 1960: 210. Holotype ♀; Malaya: Kelantan, Pulai Chondong; BMNH, London.
Distribution: Asia (Malaya).
Hosts: *Pasania* sp., *Quercus* sp.
References: (**ds**) Browne 1961c: 188. (**tx**) Browne 1960: 210, 1972b: 26.

***platypoides* Eggers** 1927c: 105. Lectotype ♀; Philippinen: Kolambugan, Prov. Zamboanga, Port Banga; USNM, Washington, designated by Anderson & Anderson 1971: 26.
Figures: Nobuchi 1978a:pl. 1.
Distribution: Asia (Malaya), Indonesia (Borneo), Philippine Islands (Mindanao).
Hosts: *Shorea* spp.
References: (**cn**) Ishikura 1966. (**hb**) Browne 1941, 1961c: 188. (**ds**) Browne 1961c: 188; Ishikura 1966; Nobuchi 1978a: 4; Ohno, Yoneyama, & Nakazawa 1987a: 89; Schedl 1966b: 79, 1966g: 31, 1975a: 454. (**tx**) Anderson, W. H. & Anderson 1971: 26; Eggers 1927c: 105; Nobuchi 1978a:pl. 1, 1983: 304; Schedl 1936h: 62–63, 1939e: 348–349, 1951i: 50, 1959a: 493, 1975a: 459, 1979c: 196.

***quadricinctus* Schedl** 1972h: 62. Holotype ♀; Kulolo logging area, Wau, M. Dist., New Guinea; CSIRO, Canberra.
Distribution: New Guinea.
Hosts: *Castanopsis accuminatissima*.
References: (**tx**) Schedl 1972h: 62, 1979c: 207.

***quattuordecimspinatus* Sampson** 1921: 34. Holotype ♂?; Mt. Matang, Borneo; BMNH, London.
Distribution: Asia (Malaya), Indonesia (Borneo), Philippine Islands.
Hosts: *Dipterocarpus borneensis*, *Dryobalanops aromatica*, *Hopea* sp., *Shorea balanocarpoides*, *S.* sp., *Vatica* sp.
Notes: (1) This name was originally given as 14–*spinatus*, a spelling not now acceptable under the Code.
References: (**hb**) Browne 1961c: 187. (**ds**) Browne 1961a: 310, 1961c: 187, 1981a: 125. (**tx**) Browne 1961a: 310, 1961c: 187; Sampson 1921: 34.

quattuordecimspinatus Schedl 1942a: 182. Syntypes ♀; Malaya, Mersing Reserve, Johre; BMNH, London and Schedl Collection in NHMW, Wien, preoccupied by Sampson 1921. Synonymy: Wood 1989: 176.
Notes: (1) The original spelling was 14–*spinatus*. (3) Browne 1958a: 493 (described male).
References: (**hb**) Browne 1961c: 187. (**ds**) Browne 1961a: 310, 1961c: 187, 1981a: 185; Sampson 1921: 34. (**tx**) Browne 1958a: 493, 1961a: 310; Nobuchi 1983: 304; Nunberg 1956: 209; Schedl 1942a: 182, 1952c: 61; Wood, S. L. 1989: 176.

quattuordecimcostatus Schedl 1952c: 61. Syntypes ♀; Malaya, Mersing Reserve, Johre; BMNH, London, and Schedl Collection in NHMW, Wien. Synonymy: Browne 1961a: 310, 1961c: 187.
Notes: (1) This name was originally given as 14–*costatus*. It is an unneeded replacement name. (3) Browne 1958a: 493 (described male).
References: (**tx**) Browne 1958a: 493, 1961a: 310, 1961c: 187; Schedl 1952c: 61.

sampsoni Nunberg 1956: 209. Syntypes ♀; Malaya, Mersing Reserve, Johre; BMNH, London and Schedl Collection in NHMW, Wien.
Notes: (1) This is an unneeded replacement name of 14–*spinatus* Schedl.
References: (**tx**) Browne 1961a: 310; Nunberg 1956: 209, 1959c: 168.

***sarawakensis* Schedl** 1964g: 245. Holotype ♀; Sarawak, Merurong Plateau, 2350 feet; BMNH, London.
Distribution: Indonesia (Sarawak in Borneo).
Hosts: *Palaquium* sp.
References: (**ds**) Browne 1965a: 189, 1981a: 126. (**tx**) Schedl 1964g: 245, 1979c: 219.

***seriata* (Browne)** 1963c: 56 (*Pseudowebbia*). Holotype ♀; Sarawak, Kuching; BMNH, London.
Distribution: Indonesia (Sarawak in Borneo).
Hosts: *Vatica* sp.
References: (**ds**) Browne 1965a: 189. (**tx**) Browne 1963c: 57; Schedl 1964k: 213.

brownei Schedl 1964k: 214 (*Xyleborus*). Holotype ♀; Sarawak, Kuching; BMNH, London.
Notes: (1) This is an unneeded replacement name for *seriata*.
References: (**tx**) Schedl 1964k: 214, 1965f: 13, 1979c: 48.

***similis* (Eggers)** 1923a: 213 (*Xyleboricus*). Holotype ♀; Deutsch Neu Guinea (Hunsteinspitze, 1350 feet); MNB, Berlin.
Distribution: New Guinea.
Notes: (1) Browne 1963c: 57 (to *Webbia*).
References: (**tx**) Browne 1963c: 57; Eggers 1923a: 213; Schedl 1936h: 64, 1958k: 145, 1973q: 259.

obscurus Schedl 1972q: 259 (*Xyleborus*). Holo-

type ♀; Deutsch Neu Guinea (Hunsteinspitze, 1350 feet); MNB, Berlin.
Notes: (1) This is an unneeded replacement name for *similis*.
References: (**tx**) Schedl 1972q: 259.

***simplex* (Browne)** 1949b: 902 (*Cryptoxyleborus*). Holotype ♀; Malaya: Kelantan, Pulai Chondong; BMNH, London.
Distribution: Asia (Malaya), Indonesia (Borneo).
Hosts: *Dryobalanops oblongifolia*, *Shorea* sp.
References: (**hb**) Browne 1961c: 184. (**ds**) Schedl 1964g: 242. (**tx**) Browne 1949b: 902, 1960: 202; Schedl 1964g: 242.

***spinipennis* Schedl** 1970b: 360. Holotype ♀; Borneo, Kennedy Bay to Nagoya (Japan), imported; PPST, Tokyo.
Figures: Nobuchi 1978a:pl. 1.
Distribution: Indonesia (Borneo).
References: (**ds**) Nobuchi 1978a: 5. (**tx**) Nobuchi 1978a:pl. 1; Schedl 1970b: 360–361, 1979c: 235.

***squamatilis* (Schedl)** 1955b: 307 (*Xyleborus*). Holotype ♀; Deutsch-Neu-Guinea; Schedl Collection in NHMW, Wien.
Distribution: New Guinea.
References: (**tx**) Schedl 1955b: 281, 307, 1979c: 235.

***subuculae* (Browne)** 1962c: 209 (*Prowebbia*). Holotype ♀; Sarawak: Bungo Hills, 4000 ft.; BMNH, London.
Distribution: Asia (Malaya), Indonesia (Sarawak in Borneo).
References: (**tx**) Browne 1962c: 209, 1972b: 25; Schedl 1964k: 214, 1964h: 424.

***suturalis* Browne** 1955: 349. Holotype ♀; Malay Peninsula: Kedah, Gunong Jerai; BMNH, London.
Figures: Browne 1972b: 22.
Distribution: Asia (Malaya), Indonesia (Borneo).
Hosts: *Dipterocarpus borneensis*, *Hopea* sp., *Shorea maxwelliana*.
References: (**hb**) Beaver & Browne 1978: 602; Browne 1961c: 189. (**ds**) Beaver & Browne 1978: 602; Browne 1961a: 311. (**tx**) Browne 1955: 349, 1963c: 57, 1972b: 22, 27.

***trepanicauda* (Eggers)** 1923a: 170 (*Xyleborus*). Syntypes ♀; Tambang Salida (W. Sumatra), Borneo: Sarawak: RNH, Leiden and MCG, Genova.
Distribution: Asia (Vietnam), Indonesia (Sarawak in Borneo, Sumatra).
Hosts: *Vatica* sp.
Notes: (3) Browne 1961a: 309 (cited in *Pseudowebbia*).
References: (**ds**) Browne 1968a: 133. (**tx**) Browne 1961a: 309, 1963c: 56, 1968a: 133; Eggers 1923a: 170–171; Schedl 1942a: 197, 1955b: 306–307.

***trigintispinatus* Sampson** 1922: 149. Holotype ♀; Burma: Kaing R., Pyimana; BMNH, London.
Figures: Nobuchi 1978a:pl. 1.
Distribution: Asia (Burma/ Assam in India/ Malaya/ Vietnam), Indonesia (Borneo).
Hosts: *Dipterocarpus* spp., *Hopea odorata*, *Mallotus albus*.
Notes: (1) Originally named *30–spinatus*, a spelling not now accepted by the Code. (3) Browne 1963c: 57 (described male).
References: (**ec**) Beeson 1922c: 500. (**hb**) Beeson 1922c: 500. (**ds**) Beeson 1922c: 500, 1961: 301; Browne 1968a: 133; Kleine 1934a: 167; Ohno, Yoneyama, & Nakazawa 1982b: 9, 1987a: 89. (**tx**) Browne 1963c: 57, 1968a: 132; Eggers 1925: 160; Nobuchi 1978a:pl. 1; Sampson 1922b: 149.

26–spinatus Sampson 1922b: 149. Holotype ♀; Burma: Kaing R., Pyinmana; BMNH, London.
Synonymy: Browne 1963c: 57.
References: (**ec**) Beeson 1922c: 500. (**hb**) Beeson 1922c: 500. (**ds**) Beeson 1922c: 500; Kleine 1934a: 167. (**tx**) Browne 1963c: 57; Eggers 1925: 160; Sampson 1922b: 149; Schedl 1936c: 63.

***turbinatus* Maiti & Saha** 1986: 104. Holotype ♀; North Andaman Island; FRI, Dehra Dun.
Figures: Maiti & Saha 1986: 105.
Distribution: Asia (Andaman Islands in India).
Hosts: *Dipterocarpus turbinatus*, *Sapium eugeniafolium*.
References: (**tx**) Maiti & Saha 1986: 104.

3 2044 072 231 343